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Dynamics and Potentiality of Postgraduate Students Regarding Lifelong Learning: A Greek case

Sofia Boutsiouki

Department of International and European Studies, University of Macedonia 156 Egnatia Street, P.O. Box 1591, 540 06 Thessaloniki, Greece Tel: 30-23-1067-3451 E-mail: sofiab@uom.gr

Abstract

The purpose of this article is to contribute to a gradually expanding discussion on the role of lifelong learning in the personal and professional lives of individuals, as well as on the socioeconomic trends and practices in the global context. It presents the results of a survey carried out with a structured questionnaire on postgraduate students in social and economic sciences in a Greek university, in order to explore their views, perceptions and attitudes regarding lifelong learning; it also explores the way in which these factors guide their ideological commitment of lifelong learners, as well as their corresponding dynamics and potentiality. The definition of these determinants would significantly enable the effective implementation of lifelong learning by contributing to a wider range of interventions, varying from planning activities to eventually influencing the socioeconomic environment and transforming relevant national and supranational strategies.

Keywords: Lifelong learning, Adult learning, Postgraduate studies, Professional development, Social qualities

1. Introduction

The purpose of this article is to contribute to a gradually expanding discussion on the role of lifelong learning in the lives of individuals. It aims at exploring the perceptions and the attitudes of a group of Greek postgraduate students towards lifelong learning both as a dynamic (justification of their choice to actually attend lifelong learning) and as a potential process (evaluation of its socioeconomic role and estimation of their ability for future participation overcoming any obstacles).

At first, a brief overview of the context of lifelong learning rhetoric is presented, followed by a description of the research design, the basic research questions and the methodology. Finally, the findings, presented in both a descriptive and a tabular form, are thoroughly examined in order to draw useful conclusions. These conclusions are indicated at the end of the paper.

2. Modern rhetoric on lifelong learning

In post-modernity, it has become undeniable that knowledge is one of the most important sources of future advantages for individuals, employers and national economies. The instability of views and the complexity of conditions demonstrated the need for reorganization and enrichment of the knowledge base and of the intellectual capital of individuals; thus, their normal incorporation and maintenance in the social reality would become attainable throughout one's lifetime. For this reason a very strong trend has developed towards redefining educational goals and reforming the educational systems in all levels and in both formal and non-formal settings. The "pressure" towards the implementation of the appropriate changes stems from (active or potential) learners, family environments, employers and all kinds of stakeholders. The general aim is to apply innovative strategies and effective practices, which respond flexibly to the new economic, social, political or cultural conditions, and to satisfy new learning needs that arise. Beyond that, the concept and the meaning of the term *learning* gradually replace the term *education* in many applications, conveying an inclusive essence and combining —with no exclusions—knowledge, employment and spare time activities in a creative and interactive way of living (Jarvis, 1998; Green, Wolf and Leney, 1999; Edwards and Usher, 2001).

The content of lifelong learning and its influence on human capital development have been discussed for many years now and have enriched the relevant rhetoric with intellectual reasoning. This discussion has led to a thorough analysis of certain aspects of the issue and has contributed to the formation of the lifelong learning concept as a totality (Aspin and Chapman, 2007). The definition of the term *lifelong learning* accepted within the framework of the present article is the one adopted by the European Union and used in the official documents:

"Lifelong learning includes every learning activity undertaken throughout life, with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective." (Tissot, 2004, p. 102)

The necessity to organize and to develop human capital which a person *may* and at the same time *must* use and renew throughout his/her lifetime, has grown and has led to the wider access and the increased lifelong participation in all forms of human capital development. Therefore, the attention of educational organizations and policy makers has been directed towards the development of individual abilities and skills and the production of larger numbers of more flexible, adaptable and efficient graduates, who are expected to increase their prospects and subsequently their employability (Edwards, 1993; Jacquemin and Pench, 1997; Harvey, 2000; Brown, 2003). At the same time lifelong learning is considered to influence the social, economic and ideological aspects of human life and to define human well-being. The need to establish a new lifelong learning model, which is operational and interactive with social and economic activity as a whole, refers not only to policy-makers and employers, but also to individuals themselves, whose responsibility to make the proper strategic planning and to apply the best choices increases (Brown and Lauder, 1992; European Commission, 1993; European Council, 1997; Hake, 1998).

As time passes, the deeper purposes of lifelong learning take on new forms. For a long time the notion of lifelong learning had been confined to employment/profession oriented aims and competitiveness purposes to the exclusion of a more general definition; thus, it led the learning society to specific policies and measures (Tight, 1998; Coffield, 1999, p. 1-12; Harman and Brelade, 2000, p. 29-30, 62-67, 69-71). For many, lifelong learning has been deemed as a means to enlighten people and to lead to social change. Today, lifelong learning becomes less "collectivist", leads participants to a self-development focus and can definitely be described as a high-individualized form of learning process (Field, 2006, p. 55). These conditions result in redefining the knowledge society and lifelong learning as pathways to development on the level of both politics/ideology and people's everyday life. It can be argued that nowadays lifelong learning has developed a new, broader concept, which not only refers to ideological and political aspects of modern *learning*— for some *knowledge—society*, but is also expected to affect the actual life and well-being of individuals. This influence is no longer limited to younger ages, but has realigned its width, depth and duration in terms of rhetoric and practice (Hughes and Tight, 1995; European Commission, 1995; Griffin, 1998; Wain, 2000).

In our era, socioeconomic transformations have become a more complex, but more substantial process. For this reason the learning society is no longer guided solely by economic factors, but by changes of individual values, social interdependent relations and new ways of life (Field, 2006, p. 77). Learning already relates to both the strictly school environment, in a narrow sense, and the broader socioeconomic environment, in a wider sense. It constitutes a cultural capital, which defines the views, beliefs and perceptions of people about themselves, about others and about the environment where they live and function. This process is continuous and leads to the redefinition, reassessment and evolution of ourselves (Bourdieu, 1986). Lifelong learning is also considered a special requirement for both survival in a competitive, unstable and unfavorable environment and personal success (Checchi, 2006). For this reason, it must be carefully approached as an element of "life-politics" towards human self-actualization and studied within a wider context of profound individual and socioeconomic transformations (Giddens, 1991, p. 214).

The interest for the development of lifelong learning and the accomplishment of the above-mentioned tasks is strongly related to the understanding of adult motivation to undertake lifelong learning, so that the proper decisions are made. This motivation is rather complex and can be influenced by external factors and subjective individual perceptions and expectancies for the environment and oneself (Rubenson, 2000). Patricia Cross' Chain-of-Response (COR) Model depicts in a descriptive way that the decision of adults to become learners results from the interrelation of a number of variables, which form a chain of responses (Cross, 1981, p. 124-131) based on the individuals' evaluation of their position in the socioeconomic framework (Note 1).

The same discussion is developed on a policy level, too. The incorporation of lifelong learning into the socioeconomic systems and the derivative policies of at least most post-industrial states can be easily observed primarily by considering the alterations in the relevant strategic planning of important supranational organizations (Hantrais, 2000, p. 5; European Council, 2002; OECD, 2007; UNESCO, 2008), since learning stopped being a strictly national affair, mainly due to globalization; then, this same pattern was enforced by nation states. Lifelong learning has acquired an important role in the strategic planning and policy implementation of modern nation states and acts as a crucial competitive advantage, creating a base for them to develop more welfare, tolerance and democratic values and avoid social exclusion (Commission of the European Union, 2001, p. 3-7; OECD, 2001; European Council, 2002, § 10; Kleinman, 2002). Moreover, it has the ability to exercise a significant influence on a personal level, helping individuals in their struggle for personal fulfillment, active citizenship, social inclusion and employability/adaptability (European Commission, 2001, p. 9; 2002).

3. Previous Research Literature

The promotion of the lifelong learning strategy is based on the perception that it is able to exercise a major influence on every aspect of human life and empirical studies seem to support this contention.

Through a survey conducted in Finland, Jauhianen (2007) analyzed the attitudes and experiences that ageing people attach to education and learning and examined aspects of lifelong learning. He demonstrated that individuals with a

higher educational background showed a more positive and optimistic attitude towards learning than others; but, when they were asked to evaluate it in the case of more concrete issues, such as solving social and employment problems, this highly positive attitude diminished and the effectiveness of learning in human lives was implicitly doubted.

Mihail and Elefterie (2006) conducted a survey in order to investigate graduates' perceptions on a Greek MBA program as well as its impact on their careers. The respondents revealed their belief that they benefited from continuing their learning activity; the specific program helped them pursue managerial careers and increase their employability, because they were able to negotiate successfully for new and challenging job positions.

Field (2005) explored the question of the relationship between social capital and lifelong learning through the analysis of people's responses to the 2001 Northern Ireland Life and Times Survey. The findings suggest a clear association between positive attitudes towards lifelong learning and positive attitudes towards a range of different forms of civic engagement; there is also a mutually beneficial association between social capital and lifelong learning with interesting implications for both individuals and policy-makers, but the extent to which one causes the other remains undetermined.

The General Directorate for Education and Culture of the European Union commissioned a survey (Cedefop, 2003), in order to define the learning preferences of Europeans. The findings show that they recognize the benefits of lifelong learning for personal, social and economic purposes; it helps people both to cope with change and labor market demands and to have an independent and satisfactory life. They deem it suitable for all ages and more profitable in non-formal contexts; nevertheless, they prefer formal settings for the improvement of their professional skills, obviously emphasizing on official certification. The survey also confirms that those with higher educational and occupational levels are more likely to participate in various forms of lifelong learning. Although individuals underline that money and lack of time due to job and family commitments are important obstacles, they are willing to make a financial contribution, if they judge the benefit to be an exclusively personal one; on the contrary, they do not see work-related learning as solely their responsibility.

Jenkins et al. (2003) found that acquiring qualifications within the school system increases the likelihood of undertaking lifelong learning, but undertaking actual lifelong learning programs increases the probability for someone to attend more lifelong learning in the future. Lifelong learning does not seem to have an important effect on earnings, but there is strong evidence that it is associated with a higher probability to enable or preserve someone's presence in the labor market. At the same time, the authors acknowledged that they did not investigate the individuals' motivation to participate in lifelong learning, yet they believe that we should expect different outcomes and benefits from lifelong learning programs with differently oriented aims.

Illeris (2003) analyzed data from the Danish Adult Education Research Project (1997-2000), which referred to poorly educated or unemployed adults. He found that their majority entered learning programs because they were forced to do so and not because of their interest to learn; he concluded that adults have little inclination to learn something they do not perceive as meaningful for their goals and set themselves the limits of their learning, if they are allowed. This finding shows that lifelong learning should focus more on adult guidance and motivation.

A comparative analysis (Schuetze and Slowey, 2002) gave emphasis to the institutional factors, which affected the participation of lifelong learners in higher education in ten developed countries (Austria, Australia, Canada, Germany, Ireland, Japan, New Zealand, Sweden, United Kingdom and United States). Although the researchers acknowledge that national differences of culture, traditions and structures differentiate the degree of integration of individuals in the lifelong learning system, they identified common factors that determine their motivation and participation. The majority tended to enroll in non-university institutions and vocationally oriented programs, while flexible or open access to the programs, usually based on specific personal characteristics and previous achievements, seemed to exercise a positive influence. Practices removing institutional barriers that associated to the mode of study, such as information and communication technologies or flexible course programs, increased students' potential. The cost of the programs and the lack of financial support also influenced motivation negatively, while the availability of lifelong learning programs not only in higher education institutions, but also to other education providers, broadened opportunities and facilitated participation.

The Organization for Economic Co-operation and Development (2001) in search for the crucial factors of economic competitiveness discovered a relation between human and social capital; this may act as an important parameter of a socially sustainable strategy for competitiveness and development.

Kember (2000) studied evidence from over 90 action research projects on Asian university students exploring among others their motivation to learning experiences. He concluded that they were incited by extrinsic motivation, mainly by the prospect of a successful career, which is commonly accompanied by an interest in the course content; nevertheless, intrinsic motivation, abeit expressed indirectly, existed, too. These students also showed high levels of achievement motivation, which had a less individual and a more collective character, due to the cultural differences between Asian and Western civilization.

Tamkin and Hillage (1997) explored the issue of the commitment of individuals to learning throughout lifetime. There is general belief that learning processes produce positive benefits, especially for participants; for this reason, the individuals are willing to invest in lifelong learning aimed at their personal development, although there is no certainty that this investment will actually have a positive effect. On the contrary, benefits for employers are not clearly defined yet, but still they believe that learning development is beneficial.

4. The survey

4.1 The postgraduate programs in general

In order to examine the research questions mentioned below, a survey was designed and conducted during the period April-May 2009 on students of six postgraduate programs in Social and Economic Sciences at the University of Macedonia, located in Thessaloniki, Greece. These students were accepted into these postgraduate programs through a procedure, which consists of written examinations and an interview. The broad conception of the individuals' need for more formal qualifications and essential skills to satisfy labor market demands and the recognition, which the studies at the University of Macedonia have established among Greek educational institutions, have made these four semester programs very attractive and highly competitive.

4.2 Key Research Questions

The fact that postgraduate students are themselves a part of the lifelong learning process corroborates the significance of the exploration of their views and their experiences in relation to lifelong learning; it reveals important aspects of the motivation and the reasoning, which formulate the relationship between these individuals and lifelong learning activities. The survey was structured under the general hypothesis that well-educated individuals, such as postgraduate students, develop necessity, eagerness, concrete consciousness and devotion to the exploitation of learning opportunities. Moreover, we deemed it particularly important to explore how lifelong learning shapes attitudes and values related not only to social and economic aspects of life, but also to self-determination and formation of human self-identity.

The basic questions of our research are:

i. How do these postgraduate students evaluate the role of lifelong learning in the personal, social and economic life of individuals and how does this affect their learning choices?

ii. Which reasons would lead them to attend a lifelong learning program with reference to their previous experiences?

iii. How do personal characteristics, such as gender, age, social origin and professional status, influence their assessment?

iv. What are the obstacles involved in their participation-therefore, potentiality-in lifelong learning?

4.3 Questionnaire of the survey

The structured questionnaire that was used as a research tool consisted of two parts. In the first one the participants provided their personal demographic characteristics. In the second one, there are questions with given statements that aim at justifying the subjects' choice to attend lifelong learning -postgraduate studies included- ("dynamics") and at exploring their perceptions for the socioeconomic role of lifelong learning related to their ability to pursue it overcoming any participation obstacles ("potentiality"). There were firstly questions specifically referring to the respondents' previous lifelong learning experiences; their answers were valuated through a Likert scale ranging from 1=no significance to 5=very high significance; secondly, the perceptions and attitudes towards lifelong learning were explored through the expression of their agreement to statements referring to its role; these were put in random order to avoid any prejudice and grouping of the answers and the levels of preference were set again by the Likert scale varying from 1=totally agree to 5=totally disagree.

4.4 Statistical Analysis Methodology

The description of the qualitative variables was done with frequency tables and bargraphs, while the chi-square test was used to assess the homogeneity of the distributions that arose. The correlation of the qualitative variables was done with the use of connection tables (crosstabulation); chi-square test was used to check the independence between the pairs of the variables under examination. The statistical adjusted residual was used in order to locate the statistically significant results of the test (values that are greater than 2 indicate a statistically significant relation among the corresponding categories), while the test validity was checked with the multitude of the cells with the expected frequency smaller than 5 (<20%). For the formation of the lifelong learning approach components the model of Factor Analysis was applied with the method of Principal Component Analysis (extraction method) and the Varimax with Kaizer Normalization (rotation method). The checking for the propriety of the method and the correlation of the variables under consideration was done with the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO Test=0.614>0.6) and Bartlett's Test of Sphericity criteria (it was statistically significant p<0.001). The credibility of the components was tested with the calculation of the Cronbach's Alpha coefficient. The results showed five groups of statements, which were added in

order to give a general estimation of the attitude of the respondents towards each one of them. The correlation among the five components was done with the use of the Pearson correlation coefficient. Moreover, Friedman testing was used in the groups of variables of every component aiming at checking the hypothesis that all statements get the same score in average (Mean Rank). The whole statistical analysis was realized with the use of SPSS 15.0 and the statistical significance level was set for P<0.05. (Tabachnick and Fidell, 2001; Green, Salkind and Akey, 1997).

4.5 Sample of the survey

The survey was conducted with a structured questionnaire, which was distributed to 108 postgraduate students personally by the author during course hours; the questionnaires were gathered a few days later, so that there would be enough time for a careful and credible completion.

The 41.7% of the participants were men and the other 58.3% were women, originating from various undergraduate studies; almost half of them were over 30 years of age and had graduated at least six years earlier, but neither this fact nor family status were an obstacle in their choice to continue their studies. Their participation by postgraduate program is shown in Table 1.

The parents' educational and professional status is rather high for a great majority of the participants; the father and the mother of one third of the sample (30.8% and 28% respectively) are tertiary education graduates, while an additional 6.5% and 3.7% respectively hold a postgraduate or doctoral degree. This finding confirms that individuals originating from a well-educated family of a higher professional status tend to continue their studies at a higher level, with much more ease and determination; of course, individuals whose parents had a lower educational and professional status seem subconsciously motivated to continue studying by their parents' aspirations for higher attainments, in order to validate their social and employment status and become "upwardly mobile" (Floud, Halsey and Martin, 1957; Parsons, 1959; Halsey et al, 1961; Bourdieu, 1971; Cross, 1981, p. 67; Checchi, 2006). Nevertheless, a difference in their dynamics and in their projected potentiality is implicit in the unequal ability of every family environment to offer them effective guidance and support to succeed in their tasks.

5. Findings and Discussion

5.1 Professional status of the sample

The specific group of postgraduate students was considered suitable for the exploration of adults' dynamics and potentiality regarding lifelong learning because their attendance in a postgradute program of studies was actually a form of lifelong learning participation and served the same ideology and policy aims (European Commission, 1993; 2002; European Council, 1997, p. 6). Moreover, the overwhelming majority of the sample was employed at the time of the survey (Table 2.1) and more than half of them had been working for more than five years; thus, they were expected to have already formulated a more accurate opinion and a specific attitude towards lifelong learning. Finally, their successful completion of undergraduate studies and their employment status suggested a satisfactory sense of self-esteem, which affects positively their motivation for lifelong learning achievement (Cross, 1981, p. 125, COR Model, point A).

The employed respondents were mainly salaried employees in the public and private services sector, which offers job security and stability, while very few (7.1%) were entrepreneurs (Table 2.2); this fact can be attributed to the limited development of entrepreneurship in Greece, especially in SMEs; although data is limited, it can be argued that Greek entrepreneurs still lack the mentality of participating in lifelong learning activities themselves (postgraduate studies being one of them) in order to broaden their knowledge and skills and reinforce their professional efficiency. The students show a major dynamics expressing their expectancy on meeting important goals; but the possibility of lifelong learning participation to be financed either by EU and Greek state resources or by their employers seems to actually affect their potentiality, therefore their final decisions (Cross, 1981, p. 126, COR Model, points C and E). Although a strong dynamic can be observed for both genders—clearly ascending educational and professional mobility compared to the parents—in general, fewer women than men exercise independent professions or hold job positions with greater responsibility (Table 2.3).

5.2 Information sources on lifelong learning

Information is considered to have a significant importance, because it provides the link between already motivated learners to the appropriate lifelong learning opportunities (Cross, 1981, p. 127, COR Model, point F). The Internet and to some extent other forms of mass media are the main information sources of the respondents for lifelong learning programs; informal social networks seem to play an important role, too, mostly for women (Table 3).

5.3 Participation in the postgraduate program and in lifelong learning activities

Almost one out of three respondents of both genders had already participated in at least one lifelong learning program. These referred mainly to economics, management and ICT and were organized either by universities or by—private or

public—vocational training centers; tuition fees were paid mostly by employers or, in several cases, were subsidized by EU resources, while very few were paid by the participants.

The motivation and the reasoning for their participation in both the postgraduate program and future lifelong learning at their own expense were quite similar and reveal their dynamics and their potentiality. Table 4 presents both groups of reasoning in order to facilitate the comparison between them.

Personal interest clearly exercises the greatest influence, but the mentality is mainly orientated towards professional parameters and on their influence on the individuals' transition, the presence and the probable development in the labor market. This profession-oriented framework includes elements indirectly referring to professional position or financial advancement, special knowledge and skills or broader acknowledgement in the labor market. It can be argued that their primary motivation derives from their determination to secure employability by acquiring and deploying knowledge, skills and attitudes and presenting them to their current or future employers or to the context in which they work (Cross, 1981, p. 124-127; Hillage and Pollard, 1998; Kember, 2000). However, there is an interesting argumentation referring to the "voluntary" or "mandatory" character of lifelong learning participation; although employers do not directly require constant knowledge and skills updating, the intense competition in the labor market exercises a certain coercion linking adult learning to professional advancement (Cross, 1981, p. 241-242).

Younger ages believe more strongly in the value of lifelong learning and consider it as a reasonable investment for one's better professional development, improvement of earnings and increase in intellectual awareness. It can also be stated that for younger ages, whose personality is still subject to change, social parameters exercise a certain influence, which tends to weaken over time (Note 2). On the other hand, we must emphasize the general reluctance towards entrepreneurship; there is statistically significant evidence that, as age advances, "know-how for entrepreneurship" becomes a less appreciated motive for participants to invest in lifelong learning.

5.4 Obstacles that hinder lifelong learning

Lack of free time and the cost (Note 3) of lifelong learning are the most important obstacles that hinder the respondents' participation in lifelong learning activities and are related to their personal and professional status. This issue is nothing more than a new aspect of a continuous debate: the rhetoric on offering—easy to combine work and personal life—learning opportunities and the effective exploitation of contemporary financial and time resources (Note 4). On the contrary, professional and family obligations themselves, although they are primary commitments for adults, do not prevent the respondents from taking part in lifelong learning, because such programs are thought to promote multidimensional self-improvement and self-achievement (Table 5). Finally, we must underline the fact that the lack of motives is projected as a serious reason for reduced participation dynamics; this tendency can be attributed to the uncertainty of the effectiveness of the learning concept and content in social and professional settings.

5.5 Lifelong learning related components

One of the basic aims of the survey was to explore the attitudes and perceptions of these postgraduate students towards lifelong learning in relation to their deeper motivation, what we called *potentiality* and *dynamics* (Note 5). The respondents were asked to express their views with reference to statements, which often appear in lifelong learning rhetoric. Factor analysis was applied to the answers and formed five attitude components that were labelled: "economic development", "social influence", "personality formation", "lifelong learning value" and "lifelong learning potentiality". These components project a different focus on the economic, social and personnal aspects of lifelong learning; the first one clearly presents a functional, therefore more short-term, character focusing on the immediate necessities (mostly benefits) of work related issues; the rest project an aspirational, therefore long-term, character and focus on more indirect (and for this reason rather dubious) outcomes of lifelong learning.

5.5.1 Economic development

This component (Table 6.1) basically focuses on the lifelong learning influence on the economic aspects of human society. There is a strong acceptance of the greater value of "learning how to learn", which usually relates to the economic aims of flexibility, adaptability and employability. The respondents consider lifelong learning as a significant, additional qualification to serve someone's professional advancement and increased income; they also express a positive opinion on the implicitly economic role of education in terms of creating useful, that is, productive and effective citizens.

The positive attitude of the respondents decreases when the statements refer to more concrete issues. The respondents critically examine the effectiveness of lifelong learning in confronting the challenges of the future, mainly those of an economic nature, and unemployment, which proves to be a particularly complex and difficult phenomenon to solve. Finally, the compulsory character of lifelong learning is strongly rejected because it interferes with people's free will and, eventually, lifelong learning loses the ability to differentiate individuals.

In contrast to those employed or exclusively students, who project less optimistic opinions, half of the unemployed individuals strongly agree that lifelong learning helps to confront unemployment and the challenges of the future. Thus, they report their expectations of improving their professional opportunities via the postgraduate program they are currently attending; at the same time, they imply a stronger positive attitude—dynamics—towards future participation in lifelong learning.

5.5.2 Social influence

This component (Table 6.2) establishes the idea that lifelong learning affects social activity on an individual and a collective level. It can be observed that the attitude of the participants towards the influence of lifelong learning tends to be more positive when the statements have a more general and abstract character. A significant number of the respondents argue that lifelong learning effectiveness is directly proportionate to the pleasure it creates, while the ability to take advantage of its outcomes depends on human talent and diligence; moreover, they believe that it guides human personality towards broader horizons and tolerance and promotes social justice and equality. These benefits make it a social responsibility.

When the discussion moves to the real function of society as a whole and statements come closer to concrete—and somehow measurable—social situations, the original general enthusiasm about the decisive role of lifelong learning on the social life of individuals weakens. The initial certainty is followed by an implicit uncertainty about its actual potentiality, which is influenced by other determinants, too. The respondents doubt its ability to contribute to the decrease of social problems and reject with certainty that it helps people enhance their social status and gain public recognition, thus having access to a larger proportion of power and social influence.

In most cases, age does not have a statistically significant relation to the variables with two exceptions. Firstly, postgraduate students 22-25 years old totally disagree that people's ability to learn is the same at all ages (Cross, 1981, p. 57), while the rest of the participants indicate a gradually increasing agreement as age increases; after all, their own participation in a postgraduate program confirms their stronger belief. Secondly, age correlates to the belief that lifelong learning participation is people's social responsibility. As age increases, the participants seem to value lifelong learning more and argue with intensity that participating in it is their own social responsibility, therefore a result of free will; on the contrary, younger respondents still continue to attach the orientation and realization of their learning choices to formal education processes.

Besides age, the survey indicated that the respondents' present professional status exercises statistically significant influence on certain variables. First of all, those who are exclusively students totally disagree that people's ability to learn is the same at all ages; but when the statement refers to better dealing with life difficulties with lifelong learning, they show less doubt. Secondly, unemployed participants project statistically significant total disagreement to the idea that offering lifelong learning chances increases social justice and equality, opposed to the total agreement of those employed. On the contrary, they totally accept the fact that individuals have a better quality of life if they participate in lifelong learning. Although they doubt its ability to change general social conditions due to their professional instability and uncertainty, they argue that quality of life on a personal (perhaps emotional) level is improved, because they cherish hopes for better prospects.

5.5.3 Personality formation

This component (Table 6.3) tests the role of lifelong learning on the formation of human personality. The strong interest for personal development is apparent in the sample. The majority of the respondents, who obviously constitute a typical paradigm of well-educated persons continuing their studies, rejects the notion that a higher educational level decreases the need for lifelong learning. They also concede that lifelong learning primarily focuses on individuals' skills renewal and attribute to it a supplementary to formal education role.

Most unemployed respondents show statistically significant total agreement with the decrease of the need for lifelong learning in the case of higher educational levels; although they believe that lifelong learning offers help against unemployment, they do not overestimate its potential and accept that it has specific limits to its effectiveness in terms of who receives it and why._

5.5.4 Lifelong learning value

This component (Table 6.4) defines the individuals' evaluation of lifelong learning. Most of them certainly acknowledge its value as an additional (and acceptable) qualification in the labor market, when it is offered to all, and as an influential parameter in general; in contrast, the opinions are divergent in the case of esteem that is attributed to lifelong learning nowadays; the respondents believe lifelong learning is given more esteem than it should have, that its actual dynamism is less than believed and that it is overrated as a means to deal with human needs.

5.5.5 Lifelong learning potentiality

This component (Table 6.5) refers to the potential ability of lifelong learning to exercise its mission. The great esteem that the respondents attach to lifelong learning leads them to relate its successful outcomes in direct proportion to the

supply of more resources to it and to younger age. Moreover, they attribute to it a strong influence, which is expressed through the provision of social skills and results in their social and professional evolution. That is why they are strongly in favor of the official certification of lifelong learning. Nevertheless, they do not consider that offering lifelong learning chances would be a motive for them to stay in a job or that it would lead to achieving higher professional positions; these issues seem to be affected by a number of other determinants not necessarily related to learning.

6. Conclusions

During the last few decades an explosion in supply and demand for lifelong learning has emerged in both developed and developing economies worldwide. The main aim of this article is to explore the perceptions and attitudes on the role of lifelong learning of students doing postgraduate studies in the University of Macedonia, Greece, taking into consideration personal, social and professional parameters. The article is based on an empirical survey which tested how lifelong learning rhetoric penetrated this group of university-educated persons ideologically and, allegedly, affected their way of thinking, their beliefs, their behavior and, finally, their previous or future choices related to the issue, what we call *dynamics* and *potentiality*.

The respondents show great esteem for lifelong learning and it is quite clear that they are conscious of their need to renew or extend their intellectual repertoire, without being deterred by demographic determinants, such as age or gender. The—constantly projected (Floud, Halsey and Martin, 1957; Parsons, 1959; Halsey et al, 1961; Bourdieu, 1971; Checchi, 2006)—finding that persons originating from better-educated families are more likely to pursue studies at a higher level and for longer periods of time is once again confirmed. Moreover, the higher educational level of the participants seems to influence their positive attitude and respect for lifelong learning, as it is already stated in other research studies (Tamkin and Hillage, 1997; Jenkins et al., 2003), reflecting their readiness and stronger expectancy for significant learning, professional and social attainments (Cross, 1981).

The respondents show a remarkably positive attitude towards the influence of lifelong learning on a wide range of human activities of personal, social and employment nature. Nevertheless, although this strong positive attitude becomes less firm when the discussion moves from general issues to more concrete, important and rather urgent ones, such as social problem solving, increasing employability and earnings, confronting unemployment and ameliorating human personality—as Jauhianen (2007) has already concluded for a population with a wider age and educational status variation—they obviously hope to realize their initial expectations by attending the postgraduate program and by strengthening their qualifications. The principle motivation for lifelong learning for this group of Greek students, who are themselves a part of lifelong learning processes through attending a postgraduate programme, appears to be financial, since they relate their decision to professional content and prospects; so they seem to be more short-term focused on their effort to cope with a complex labor market reality.

They turn to individualism because they primarily acknowledge the profession-oriented advantages of lifelong learning that have a direct impact upon them, and then its broader social reflections. Nevertheless, they seem aware of the fact that the mass participation in higher education in the modern knowledge economy has forced employers to gradually confine their ability to differentiate employees on the basis of knowledge and to increase their evaluation on the basis of socio-cultural factors (Brown, 2003). We must also emphasize their reluctance to proceed to entrepreneurial activities and their preference for safer job choices; so, attracting entrepreneurs as lifelong learning recipients is a new challenge for both lifelong learning planners and researchers.

Younger or unemployed individuals, as opposed to older respondents, seem rather skeptical about lifelong learning effectiveness in certain complex socioeconomic situations, although they are more willing to pay the cost for it than others. Lifelong learning is thought to enhance the dynamics and to offer special potentiality to the individuals that pursue it through the provision of professional and social skills and the formation of a cultivated personality; thus, it promotes not only employability, but also individual well-being (Cross, 1981; Gibbs, 2000, Kember, 2000); nevertheless, they consider it overrated and accept limitations to its effectiveness, keeping in mind that other determinants may influence the interdependent conditions of the modern socioeconomic environment and the aspirations related to learning achievements.

Although postgraduate students are considered to be self-sufficient on learning, because they have already reached an advanced learning cycle, research reveals that they continue to have specific learning needs, which must be satisfied. The search for learning chances also expresses the respondents' dynamics; social networks help to access lifelong learning information, but the Internet and the press are by far the main sources of information. However, when the discussion comes to other groups of people with difficulty in accessing these media, the equality of educational opportunities for all, as well as the maintenance of high self-esteem and positive attitudes towards lifelong learning are called into question (Cross, 1981, COR Model, points A, B, F).

Finally, lack of free time and cost are the main situational barriers to lifelong learning and, strangely enough, go along with a leading dispositional barrier, lack of motivation and interest (Cross, 1981, p. 106-107). This finding once again

sparks the debate about offering learning opportunities in such a way and with the appropriate content, so as to be easily combined with someone's personal and working life. This opportunity would have a positive effect on their dynamics to acquire knowledge and skills as well as on their potentiality to attend various learning forums throughout their lifetimes. Data referring to the respondents' previous lifelong learning experiences, which were clearly profession oriented, show that in most cases the cost of the program was paid by the employer or was subsidized by the EU and state resources; this funding made the programs accessible and attractive, and, therefore, increased the subjects' potentiality. This finding indicates that removing situational and institutional barriers would significantly reduce dispositional barriers and strengthen positive forces, attitudes and self-perceptions of potential learners.

Generalizations cannot be made on the perceptions and motivations of postgraduate students in other universities, because the results of the survey answer to the exploration of a rather small sample and are confirmed in only one university; nevertheless, there are several indications that certain dimensions are worth to be further explored; the conclusions of this survey have an additional value, because they suggest both the short-term / "functional" and the long-term / "aspirational" focus of the respondents in relation to lifelong learning outcomes. So, it would be very useful to extend similar research on a larger scale, in order to determine whether the variables under consideration actually influence and to what extent can capture various dimensions of adults' motivation to learning and work. If the sample was bigger and the survey expanded to other Greek universities, we would get more significant results and would be able to generalize the findings that reveal the deeper motives which lead postgraduate students to their learning experiences, as well as the obstacles to lifelong learning choices and implementation in Greece. Moreover, a similar research to postgraduate students in other countries would show whether differences in the national labor markets or in the socio-cultural characteristics really influence these perceptions and choices. Basic conclusions would greatly help other researchers, lifelong learning planners and policy makers to consider new strategies and practices.

The increase of those who attend tertiary education is a fact and there are significant indications that these individuals give great credit to lifelong learning. In our opinion it would be very important and useful to extend similar research to a larger sample of university students and graduates, who will always be a pool of interested lifelong learning participants—"clients"—and potential factors for the diffusion of its outcomes. For this reason, in the next few years lifelong learning will be obliged to continue transforming itself, in order to develop a more attractive and inclusive character; thus, it will be likely to contribute decisively to the satisfaction of the needs of individuals, societies, labor markets or even states and supranational formations.

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Note 1. The Chain-of-Response (COR) Model includes the following points: (A) self-evaluation; (B) attitudes about education; (C) importance of goals and expectation that participation will meet goals; (D) life transitions; (E) opportunities and barriers; (F) information; (G) participation.

Note 2. Also see Cross, 1981, p. 235-240.

Note 3. In many cases lifelong learning participation may be financed by a special fund (Fund for Employment and Vocational Training, Λ .A.E.K. in Greek), which is funded by the contribution of employees (0.45% on the salary). (Tsekouras, Stamboulis and Litsardakis 2003, p. 21-22).

Note 4. i.e. Facilitating employees with on-the-job learning or educational full-pay leave, time management training, child care provision, etc.

Note 5. Also see Cross, 1981, p. 124-127, COR Model, point B and its correlations.

Table 1. Distribution of the sample by postgraduate program

Postgraduate Studies Department	Frequency	Total (%)	Men (%)	Women (%)
European Studies and Diplomacy ^a	6	5.6	6.7	4.8
Strategic Studies and International Politics ^a	1	0.9	2.2	0.0
European Youth Studies ^a	19	17.6	13.3	20.6
MBA executive	24	22.2	28.9	17.5
MBA for young graduates	32	29.6	24.4	33.3
Total Quality Public Management	26	24.1	24.4	23.8
Total	108	100.0	100.0	100.0
^a The first three programs are represented by a smaller group of respondents due to the smaller number of students who attend these				
programs compared to the other three programs.				

Table 2. Present professional status

(1) Present professional status	Frequency	Total (%)	Men (%)	Women (%)
Employed	86	79.6	82.2	77.8
Unemployed	4	3.7	4.4	3.2
Student (exclusively)	18	16.7	13.3	19.0
Total	108	100.0	100.0	100.0
(2) Type of employment				
Self-employed with personnel	2	2.4	5.4	0.0
Self-employed without personnel	4	4.8	2.7	6.4
Salaried (monthly or daily)	76	90.5	89.2	91.5
Aid in the family business	2	2.4	2.7	2.1
Total	84	100.0	100.0	100.0
(3) Professional position of responsibility				
Director / Assistant Director	5	23.8	30.0	18.2
Departmental Manager	12	57.1	70.0	45.5
Supervisor	4	19.0	0.0	36.4
Total	21	100.0	100.0	100.0

Table 3. Information sources on lifelong learning

Information Sources	Percentage	Men (%)	Women (%)
	response (%)		
Advertisements in various magazines	37.4	40.0	35.5
Electronic mass media (TV, radio)	30.8	28.9	32.3
Internet	85.0	86.7	83.9
Friendly environment	34.6	17.8	46.8
Advertisement brochures	20.6	22.2	19.4
Other trainees	29.0	20.0	35.5
Personal search in training institutions	9.3	2.2	14.5

Table 4. Reason for postgraduate program participation / Reason for lifelong learning participation

Friedman Test for the comparison of the items				
Reason for postgraduate program	Mean	Reason for lifelong learning participation	Mean	
participation	Rank	K	Rank	
Personal interest	9.83	Personal interest	8.72	
Better professional development	9.18	Relation to my job	8.35	
Securing special knowledge	8.33	Better professional development in my job	8.09	
Good reputation of the program	6.83	Offer modern and applied knowledge	7.69	
Increase chances of finding a job	6.77	Relation to my studies	7.35	
High demand in labor market	6.74	Better payment development in my job	6.89	
Securing high financial income	6.52	Acquire social skills	6.39	
Connection of the program to the labor		Potential finding of a job with better conditions		
market	6.03		5.98	
High social acceptance	5.86	Know-how for entrepreneurship	5.82	
Accessible tuition fees		"Guarantee" to keep my job position by the		
	4.87	company that employs me	4.88	
Having free time	3.93	Participate in social activities	4.51	
The company that employs me pays the		Taking advantage of free time		
tuition fees	3.11		3.32	

The answers of the respondents were set in a Likert scale ranging from 1 = no significance to 5 = very high significance; then Friedman Test was applied to the findings and the results show the evaluation of the statements in a descending order: the bigger the value, the greater the importance of the motivating factor.

Table 5. Obstacles for lifelong learning participation

Obstacles that hinder LLL	Total (%)
Lack of free time	41.7
Professional obligations	11.1
Family obligations	9.3
Cost of participation	27.8
Lack of information	10.2
Improper educators, content or quality	9.3
Lack of motives	24.1

Table 6. Attitude components

Friedman Test for the comparison of the items			
Component 1. Economic Development	Mean Rank		
Lifelong learning must have a compulsory character	5.16		
Lifelong learning is an effective way to confront unemployment	3.71		
Participation in lifelong learning is the only way to confront the challenges of the future	3.64		
The more educated a person is, the more useful he is to society	3.00		
People with greater participation in lifelong learning activities earn more than those with less	2.76		
Learning how to learn is more important than simply acquiring knowledge and skills	2.72		
Component 2. Social influence	Mean Rank		
People's ability to learn is the same during all ages	9.54		
People who participate in lifelong learning activities achieve a higher social status	8.63		
Greater participation of individuals in lifelong learning will contribute to the decrease of many social	6.96		
Lifelong learning helps people confront adverse circumstances in life more than knowledge acquired in	0.90		
formal education	6.83		
People who participate in lifelong learning activities have a better quality of life	6.82		
People can deal with the difficulties of life with lifelong learning	6.54		
Participation in lifelong learning for self-improvement is every person's social responsibility	4 88		
Offering more lifelong learning chances increases social justice and equality	4 78		
Taking advantage of the knowledge and skills acquired through lifelong learning depends on a person's talent			
and diligence	4.31		
Lifelong learning contributes to the formation of individuals with broader horizons and tolerance	3.91		
Lifelong learning is more effective when it pleases the individual	2.79		
Component 3. Personality Formation	Mean Rank		
The higher educational level someone has, the less need for lifelong learning he has	2.22		
Lifelong learning must aim at someone's self-improvement and not collectivism	1.98		
Formal education renews knowledge, while lifelong learning only a person's skills	1.80		
Component 4. Lifelong learning value	Mean Rank		
Offering lifelong learning activities to all decreases its value as an additional qualification	2.21		
Lifelong learning is useful only when it exclusively refers to work	2.12		
Lifelong learning is overrated today	1.67		
Component 5. Lifelong learning potentiality	Mean Rank		
Persons who participate more in lifelong learning activities achieve higher professional positions than those	1		
who don't	4.44		
Offering lifelong learning chances is a motive to stay in a job	3.68		
Participation in lifelong learning programs must lead to an official studies certificate	3.64		
Acquiring social skills helps the social and professional evolution of individuals more than knowledge	1		
acquired through formal education	3.64		
The younger a person is, the easier he can correspond to lifelong learning activities	3.34		
If more resources were given to lifelong learning, it would be more successful	2.26		
The answers of the respondents were set in a Likert scale ranging from $1 =$ totally agree to $5 =$ totally disagree	e; then Friedman		
Test was applied to the findings and the results show the evaluation of the statements in an ascending order: the smaller the			

value, the greater the acceptance of the statement in relation to the respective lifelong learning component.



Econometric Assessment of 'One Minute' Paper as a Pedagogic Tool

Amaresh Das College of Business Southern University at New Orleans New Orleans, LA 70056 E-mail: adas2@,cox.net

Abstract

This paper makes an econometric testing of one-minute paper used as a tool to manage and assess instruction in my statistics class. One of our findings is that the one minute paper when I have tested it by using an OLS estimate in a controlled Vs experimental design framework is found to statistically significant and effective in enhancing students' knowledge. It is found to be equally effective when I have tested it by using a seemingly unrelated regression that allows the error terms to be correlated across separate but related regressions. This is irrespective of students' ability levels as is measured by GPA in both cases.

Keywords: Production function, Quasi-concavity, Seemingly unrelated regression

1. Introduction

Learning can take place in a class room setting. It can take place in an on line environment, through a e-mail system (see Ruth (2008) and others) or through a Blackboard. The one - minute paper, a recent innovation in higher education in a class room setting, is gradually becoming popular. According to a simple finding of the Harvard Assessment Report, the one minute paper is a modest, relatively simple and a low-tech innovation that can improve student's learning and active participation in class in a big way (see Light (1990)). There are many, for example, Naeve *et al* (2008) who investigated a modeling approach to learning process. The purpose of this paper is to do the same and statistically assess the impact of this technique on student learning.

This 'low-tech' innovation is designed to obtain regular feedback from students – a scarce commodity in a lecture setting. Again, based on the premise that students who have genuine input and control will be better motivated to learn, the one –minute paper can encourage active engagement in the class process. In the final minute or two of the class, the instructor, asks students to respond to the following two questions:

What is the most important thing you learned to day?

What is the muddiest point still remaining at the conclusion of today's class?

The first question directs students to focus on the big picture, that is, what is being learned, whereas the second seeks to determine how well learning proceeding is. The instructor encouraged students to provide thoughtful, sincere responses to these questions. Unlike standard end-of-term evaluations students were providing guidance for *their own* on- going instruction, not for students coming in future. If, based on a simple analysis of students' responses, the teacher decides that the main points of the previous class are poorly understood, or, that the misunderstandings of the key points – the 'mud' - is particularly deep, the teacher reviews and clarifies these points at the beginning of the subsequent class. Most importantly, through one minute paper, the teacher is able to demonstrate a respect for and interest in, student opinion that by itself can encourage students' 'active' involvement in the learning process.

2. Methodology

I taught two sections of statistics both in Fall 2005 and Spring 2006 at Trinity University in Washington, D.C. In Spring 2006, I used one minute paper only in one of two sections. Here I used a 'controlled vs. experimental' design to test the effectiveness of one minute paper. I taught two sections of the same course again in the Fall of 2005 when I used one minute paper in the both the sections. For Spring 2006 data I use the Ordinary Least Square Estimate (OLS) to estimate the parameters and for Fall 2005 data, I estimate the same parameters by using a technique called Seemingly Unrelated Regression (SUR). I had three major goals to accomplish in both Spring and Fall. These are: to assess the effectiveness of one minute tool and along with it gain classroom experience by way of students' reasoning, problem solving, and creativity

2.1 OLS estimate

In Spring 2006, when I used one minute paper in only one class – the experimental class, I taught identically the same materials and used the same pedagogical style in both sections. The two sections were almost of the same size (30 students in one and 27 in another) in terms of student enrollment. At the conclusion of each class period, I asked

students in my experimental class to complete a one-minute paper (card). Using paper and pencil students responded to the one-minute paper questions and dropped their responses in a box located on the front desk as they left. They were given the choice to drop their responses even by e-mail. I asked students to do the same in every class.

I read and analyzed all of their responses in Excel spreadsheet. Then I began each subsequent (experimental) class with a short discussion of the most frequently mentioned 'muddy' points from the previous class. This way I could demonstrate to the students that their understanding and feed back were of much importance. I scheduled the controlled class before the experimental class to mediate against the possibility of inadvertently using feedback from the experimental class (concerning what students learnt and how well did they learn it) to promote learning in the control class. As an additional check against inadvertently transferring feedback from the experimental class to the other class, the feedback from a previous experimental class was not analyzed until after the subsequent controlled class had concluded. At the beginning of the semester, I also administered a 'pretest' in both the experimental as well as in the controlled classes to measure initial knowledge in the area.

I used a variant of the well-known educational production function approach with all its conventional properties. That is, the production function \int is a continuous function and twice differentiable or, in other words, as in the two variable case, for example, $\int_1 > 0$, $\int_2 > 0$ and because of twice differentiability of \int ,

 $\int_{12} = \int 21$. The bordered Hessian of the strictly quasi-concave production function satisfies the inequality

$$\begin{bmatrix} J_{11} & J_{12} & J_1 \\ J_{21} & J_{22} & J_2 \\ J_1 & J_2 & 0 \end{bmatrix} > 0$$

 $G_{S} = f[pre-test score, A_S, A_0, Gender, One Min, One Min*GPA], where$

 G_s = the student's post- test score in the posttest (score will not count toward a student's final grade

 A_{S} = the student's aptitude in Statistics to be measured by a Pretest (ETS)

 A_0 = the student's aptitude in all other courses as measured by the GPA, excluding the Statistics grade. Another possible proxy might be the student's ACT score.

Gender = dummy variable for gender = 1 for male students,

= 0 for female students

One Min = a dummy variable for treatment

= 1 for data with there is a one minute paper

= 0 for data in a class with no one minute paper

One Min*GPA = dummy variable for treatment interaction terms,

One Min*GPA 3.0, where One Min^{*} GPA 3.0 = 1 when the student's GPA ≥ 3.0 and

One Min*GPA 2.0, where One Min* GPA 2.0 has value 1 when the student's GPA < 3.0 but ≥ 2.0 .

To allow the slope of the one min variable to differ according to students' differing ability levels, I introduced a series of interaction terms. To check for multi collinearity again I tried a ridge estimator (not reported here) incorporating the stochastic constraint that β is the zero vector. Note 1

Instead of obtaining two different post- score equations for two classes, I chose a more efficient procedure involving the estimation of only one equation with a dummy variable treatment of One Min. In this study the one minute paper was not allowed to change the constant (intercept) term in the equation but only the slope (β_4 in eq. (1) below). Note 2.

I estimated the following regression model:

E(Post- test score) =

 $\beta_0 + \beta_1 \operatorname{Prtest} + \beta_2 \operatorname{GPA} + \beta_3 \operatorname{Gender} + \beta_4 \operatorname{one} \operatorname{Min} + \beta_5 \operatorname{one} \operatorname{Min}^* \operatorname{GPA} 3.0 + \beta_6 \operatorname{one} \operatorname{Min}^* \operatorname{GPA} 2.0$ (1)

 $+\mu$

where $\mu = \text{error term and}$

$$E(\mu) = \begin{bmatrix} E(\mu_1) \\ E(\mu_2) \\ . \\ . \\ .E(\mu_n) \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \\ . \\ . \\ .0 \end{bmatrix} \text{ and}$$

 $E(\mu\mu') = \sigma^2 I$ This assumption gives the variance matrix as

$$\begin{bmatrix} \sigma^2 & 0 & 0 \\ 0 & \sigma^2 & 0 \\ 0 & 0 & \sigma^2 \end{bmatrix}$$

This means the μ_{ii} has the same variance and all μ_{ij} are pair-wise are uncorrelated.

2.2 Results of the OLS

The principal hypotheses to be tested were:

The introduction of one-minute paper enhanced student's knowledge.

The one-minute paper enhanced the performance of all students regardless of the initial ability levels of students.

The value and the statistical significance of the coefficient β_4 associated with the One Min variable, if found positive and significant, will suggest that the use of one minute paper enhance students' knowledge. The amount of the gain in knowledge that would depend on students' ability levels was measured by the coefficients of the interaction terms, β_5 and β_6 . The hypothesis that $H_0: \beta_5 = \beta_6 = 0$, which means that the change in post- test score promoted by the interaction of One Min with GPA 3.0 and GPA 2.0 is jointly zero, could not ne be rejected.

(see Table 1)

I tried with other specifications of the GPA dummy variable in my study. The results (not reported here) were not sensitive to other specifications. I employed a pre test score in my estimation but this since this was an extraneous (a priori) information it would create a bias, often called 'pretest' bias in econometrics. I, therefore, used what Kennedy (1992) calls a 'testing down' strategy (not reported) to eliminate this bias. I estimated the coefficients of a more relevant model that supported our finding that the coefficients of the interaction terms, β_5 and β_6 are jointly zero.

Because there is some controversy in the inclusion of pre-test score as a regressor and to demonstrate the robustness of our finding concerning the importance of one minute paper, I employed a final specification of our model in which Post test – Pretest is used as the dependent variable. But R^2 did not drop significantly (the results are not reported here). More importantly, the One Min coefficient which was significant before is found to be equally significant in the final specification. That is β differs in absolute value by less than some pre assigned positive number. That is,

$$p \lim \beta = k$$
 if $\lim \text{ prob}\left(\begin{vmatrix} \hat{\beta} - k \end{vmatrix} \right) < \delta = 1$

 $n \rightarrow \infty$

3. Seemingly Unrelated Regression (SUR)

3.1 A few words on SUR

In this section I ran two regressions separately for two sections (30 in α one section and 29 in another) taught in Fall 2005 at Trinity by using the technique called Seemingly Unrelated Regression (SUR). The SUR is a set of regression equations that seem unrelated but is in reality related. SUR allows the error terms to be correlated across separate but related regressions. The μ s in the four regressions above do not have to be independent of each other in any one time period.

Theorem 1.

If the error terms of the equation are uncorrelated or if all equations in the simultaneous estimation have the san=me right hand side variables, then SUR and OLS will produce identical estimated values for the parameters of the equation. If one equation has more independent variables than the other, but all independent variables in the smaller equation are included in the larger, then SUR and OLS produce identical estimated values for the smaller equation but not the larger one.

Theorem 2.

If the equations of he system have different right hand side variables and the errors are correlated, then SUR and OLS will produce different estimates of the β 's as well as different estimated standard errors. If the Gauss-Markov assumptions are satisfied, then the SURE estimates will be consistent and more efficient (i.e., they will have lower standard errors) than the OLS estimates for sufficiently large samples.

[Proofs are given in any graduate econometrics text]

Suppose there are n equations of this form $Y_i = X_i \beta_i + \mu_i$ All are in vectors. X is a data matrix. The subscript *i* refers to the *i* th equation. These equations can be written as

$$\begin{bmatrix} Y_1 \\ Y_2 \\ .. \\ Y_n \end{bmatrix} = \begin{bmatrix} X_1 & & \\ & X_2 & \\ .. & & \\ & & X_n \end{bmatrix} \begin{bmatrix} \beta_1 \\ \beta_2 \\ .. \\ \beta_n \end{bmatrix} + \begin{bmatrix} \mu_1 \\ \mu e_2 \\ . \\ \mu_n \end{bmatrix}$$
Or,
$$Y^* = X^* \beta^* + \mu^*$$

If we allow correlation between the error terms across equations, so that, for example, the i th error term in the i th equation is correlated with the i th term in the j th equation

the variance –covariance matrix of μ^* will not be diagonal. I estimate the following two equations, one for each class separately.

```
E(\text{Post test score}) = \\ & \text{WITH ONE MINUTE CLASS} = \\ & \beta + \beta_1 \text{ Prtest} + \beta_2 \text{ GPA} + \beta_3 \text{ D} + \beta_4 \text{ one Min} + \beta_5 \text{ one Min}^* \text{ GPA 3.0} + \beta_6 \text{ one Min}^* \text{ GPA 2.0} \\ & + \mu_1 \\ E \text{ (Post test score)} \\ & \text{WITHOUT ONE MINUTE CLASS} = \\ & \beta + \beta_1 \text{ Prtest} + \beta_2 \text{ GPA} + \beta_3 \text{ D} + \beta_4 \text{ one Min} + \beta_5 \text{ one Min}^* \text{ GPA 3.0} + \beta_6 \text{ one Min}^* \text{ GPA 2.0} \\ & + \mu_2 \end{aligned} 
(2)
```

The SUR allows the error terms $\mu_i s$ to be correlated across separate but related regressions. This way the SUR procedure can use the correlation between error terms to improve the estimates Any correlation between error terms in regressions is valuable information; it is trying to tell us something. It could be telling us that there is some change or event in the class policy or even a text book in that time period that affects more than one class. The change may not be captured by any of the independent variables and that is why it will show up in the error term. The SUR procedure uses this information (Table 2 & Table 3) to improve the coefficient estimates. Note 4.

3.2 Results

4. Conclusion:

Our test provides an empirical assessment of one - minute paper. Our finding is that it is positively and significantly important in student's learning in Statistics. This is irrespective of students' ability as is measured by GPA. One major limitation of our test is the 'power' of the test that can not be determined without being able to randomize the sample selection or control the demography and the behavior of students. The faculty involved in curriculum and assessment reform should view this work as a learning process that will provide a kind of 'library' of examples to other reform practitioners and will thus expand the 'community' of reformers . Our findings will help foster shared value in evaluating students' performance.

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Notes

Note 1. In a Bayesuan interpretation the extent of the shrinking depends on the confidence with which it is believed that β is the zero vector (see Vinod and Ullah (1981, Congdon (2001)). Chow 91983) and Maddala (1988), however, holds an opposite view.

Note 2. Remember we want to test the joint hypothesis that, the fifth and elements of β , say, are equal to 6.76 and 3.62. That is, we wish *t* test the hypothesis that the sub-vector

is equal to the vector

$$\begin{bmatrix} 3.04 \\ 3.56 \end{bmatrix}$$

This is a different question from the two separate questions of whether β_5 is equal to 3.04 and

whether β_6 is equal to 3.56.

Note 3. For econometrics of different specifications see Kennedy, P (1992, 1981), Cross and Angelo (1993). Note 4. I used the student version of Eviews for SUR estimation.

Table 1. Dependent variable post test score

Variable	Coefficient	Standard Error	t-statistic	p-value
Constant	5.3	1.4	3.76	0.12
Pre test	7.45	4.60	5.97	0.10
GPA	7.13	1.94	9.62	0.01
Gender	2.10	3.34	2.11	0.11
One minute	4.22	1.45	5.30	0.01
One Min [*] GPA 3	3.04	3.02	1.32	0.56
One Min [*] GPA 2	2.56	1.81	2.87	0.13
Table 1 contd,				

Observations : 57 $R^2 = 0.84$, Adjusted $R^2 = 0.81$ Residual Sum of Squares = 51.76 $\hat{\sigma} = 7.556$ DW= 1.323 F statistic = 6.56

Table 2. Dependent variable post test score in one minute class

Variable	Coefficient	Standard Error	t-statistic	p-value
Constant	10.3	2.41	1.76	0.52
Pre test	17.4	6.46	3.94	0.40
GPA	16.1	1.93	8.12	0.00
Gender	3.10	3.22	1.16	0.71
One Min	4.22	1.13	4.31	0.00
One Min [*] GPA3	1.23	4.78	1.11	0.12
One Min [*] GPA2	1.77	4,43	1.85	0.28

Observations : 30 $R^2 = 0.92$, Adjusted $R^2 = 0.91$ Residual Sum of Squares=31.11 $\hat{\sigma} = 4.554$ DW= 1.32F statistic = 7.33

Table 3. Dependent variable post test score without a one minute class

Variable	Coefficient	Standard Error	t-statistic	p-value
Constant	3.30	1.31	813	0.10
Pre test	7.34	2.50	3.91	0.30
GPA	8.23	1.91	7.44	0.05
Gender	3.11	4.24	3.10	0.31
One Min	3.26	3.45	2.56	0.48
One Min [*] GPA3	2.61	3.22	1.98	0.17
One Min [*] GPA2	1.43	3.29	1.89	0.11
Observations $R^2 = 0.88$, Residual Sum $\hat{\sigma} = 7.343$ DW= 1.322	: 29 Adjusted R ² =0 n of Squares= 47.1	.80 11		
F statistic =	5.98			



Enrollment Quota Control, Elite Selection and Access to Education

in Rural China

Luan Zhao

School of Economics and Management, Tsinghua University, Beijing 100084, China E-mail: zhaoluan@mails.tsinghua.edu.cn

Abstract

In China, the access to education is determined by not only student's demand for schooling, but also the allocation of educational resources and the schools' selection of candidate students. Based on the data obtained from the rural life level and rural social assistance household surveys in four provinces in 2005, the demand-identified bivariate probit model is adopted to identify whether rural youths have the demand for schooling, distinguish between the students' demand for schooling and the selection of schools, and open out the influence and function of family and social backgrounds on rural youths to acquire the education above junior high school. The empirical research shows that both the deficiency of demand for schooling and the enrollment quota control are important obstacles to restrain the access to education, and the demand for schooling and the elite selection of school all obviously incline to the families and peoples with predominant social backgrounds. The policy implication of this research is that it is imperative under the situation to adopt measures such as improving the demand for schooling of the disadvantaged families and further loosening the enrollment quota control, but the former is more important.

Keywords: Access to education, Demand for schooling, Estimation of demand-identified bivariate probit model

1. Introduction

Though the access to education is generally regarded as the important channel to reduce the intergenerational transmission of poverty and promote the flow from the lower class to the upper class of the society, but the researches aiming at many countries indicated that the education opportunity obviously inclined to the group with predominant family or social background, which also means that in many economic objects, the education has been one important mechanism to maintain the privilege status of the superior class in the society, and continue the inequity of the society and the economy (Li, Chunling, 2003). In China, the significant influences of family economy, and education and class background on the access of education have been extensively validated in many researches (Guo, Congbin, Min, Weifang, 2006 & Tao, Hong, Yang, Dongping, 2007 & Liu, Jingming, 2008 & Hou, Longlong, Li, Fengliang, Zheng, Qinhua, 2008). Some researches (Li, Chunling, 2003 & Li, Yu, 2006, Liu, Jingming, 2006 & Hao, Dahai, 2007 & Wu, 2007) also paid attention to the influences of the special social backgrounds such as the system transfer of China and the social structure on the access to education. One noticeable problem is the access to education of children in rural regions. Because the unbalance of rural and urban development in China, and education opportunities of urban and rural children are largely different (Fan, Mingcheng, 2008), and if the expanded trend of the educational unbalance between villages and cities continues, it may be the important hidden trouble to maintain even expand the gap between villages and cities (Qain and Smyth, 2008).

Therefore, to develop and promote the access to education in rural regions has been regarded as an imperative task for the government of China. However, the efforts that the government develops the educational opportunities will not always obtain anticipated effects. For example, after 1950s, some countries adopted the measures to expand the educational scale in the primary education and the secondary education, but some researches indicated that the expansion of educational scale had not significantly improved the equality of educational opportunity (Shavit, Arum and Gamoran, 2007). Raftery and Hout (1993) put forward the hypothesis of "Maximally Maintained Inequality", and they thought that the expansion of education scale would not certainly improve the equality of education opportunity except that the education demand of the group with predominant social state had been achieved certain saturation, or else, those parents with higher social and economic state would always try to acquire added enrollment chances, so the enrollment status of the disadvantaged groups would be improved limitedly. This instance could be found in the enrollment expansion of Chinese colleges. The researches aiming at the expansion of Chinese higher education scale in the near future indicated that the increase of the total amount of Chinese higher education opportunity had not obviously reduce the educational disparities (Liu, Jingming, 2006 & Hao, Dahai, 2007), and many problems such as reduced education quality and descended rates of return to education induced by the enrollment expansion would first strike the demand for schooling of the disadvantaged groups, and the final result would even deteriorate, not improve the access to education of the disadvantaged groups.

Accordingly, to effectively develop the education opportunity of the disadvantaged groups, the government must deeply analyze the obstacles that the disadvantaged groups can not acquire the education, and in this way, the government will have a definite object in view. One key problem is whether the disadvantaged groups have the demand for schooling. In China, various levels of education are not students' free selection, and except for the demand of schooling, the enrollment is also determined by the selection of schools and the distribution of education resources. Both the secondary education and the higher education in china adopt strict selection mechanism of entrance examination, and the ability selection mechanism based on the achievements of examination is the main mode to distribute scare education resources (Wang, 2008). If rural families also have the demand for schooling, but lose the enrollment opportunities only because of the limited education resources, the expansion of education scale will help the disadvantaged groups to acquire the education. However, if rural families would not accept the investment of human capitals at all, the measures that the government expands the education scale will not be effective, and it is the essential method for the government to enhance the drive that the disadvantaged groups acquire the education.

By the special data of questionnaires about survey of the rural life level and the social assistant households, when effectively identifying the causes that rural children don't enter a higher school, a new demand-identified bivariate probit model is adopted to identify whether rural youths have the demand for schooling, distinguish between the students' demand for schooling and the selection of schools, and open out the influence and function of family and social backgrounds on rural youths to acquire the education above junior high school.

The structure of this article can be described as follows. The second chapter introduces the adopted data and the selection of measurement model. The third chapter introduces the demand for schooling in various educational stages and the descriptive statistical characters with satisfied degree. The fourth chapter explains the explanation variables adopted in the research about the access to education. The fifth chapter studies the bivariate probit model simultaneously considering education demand and supply, and opens out the advantages of the bivariate probit model estimation comparing with simple probit model estimation. The sixth chapter further analyzes and opens out the time-sequence character of the demand for schooling and its satisfied state. The seventh chapter summarizes the research conclusions and the policy implications of this article.

2. Data and measurement model selection

The data in this article are from the rural life level and social assistance household surveys in four provinces organized by the China Ministry of Civil Affairs in 2005. By the mode of grading random sampling, 1600 rural households were surveyed in four provinces including Zhejiang, Fujian, Guangxi and Gansu. The database recorded the income, payout, education experiences and working state of each family member in detail. The most character of this database is to offer the survey of causes that investigators have not entered into a higher school, which needs to distinguish the obstacles of education access respectively induced by the demand factors and the supply factors and more deeply understand the influences and the function mechanism of the family and society backgrounds on the access to education.

One two-stage model is used to describe students' process entering a higher school. In the first stage, rural youths would select whether they would accept the higher education according to their own and family backgrounds, and the application for higher school is one symbol which means that students have the demand for schooling. In the second stage, schools select the applicants to determine the distribution of education resources.

The dummy variables y_D and y_3 are respectively used to denote students' demand for schooling and the selection of school. $y_D = 1$ denotes rural youths have the demand for schooling, and $y_D = 0$ denotes rural youths would not enter a higher school, and $y_3 = 1$ denotes school admits the student through the selection, and $y_3 = 0$ denotes that the school has not admit the student. Only when $y_D = 1$ and $y_3 = 1$, rural youths can be observed to acquire higher education. In addition, y_D^* and y_3^* respectively are used to denote the hidden variables influencing rural youths' demand for schooling and the selection of the school, and they are non-observable, and the relationship between them with y_D and y_3 is

$$\begin{split} & \{y_D^* = \beta_D' x_D + \varepsilon_D, & \text{ if } y_D^* > 0 \ y_D = 1, \ \text{ or } y_D = 0 \\ & \{y_S^* = \beta_D' x_S + \varepsilon_S, & \text{ if } y_S^* > 0 \ y_S = 1, \ \text{ or } y_S = 0 \\ & E[\varepsilon_S] = E[\varepsilon_D] = 0, & \text{ Var}[\varepsilon_S] = \text{Var}[\varepsilon_S] = 1, \ \text{ cov}[\varepsilon_S, \varepsilon_D] = \rho \end{split}$$

2.1 Estimation of single-variable probit model

Generally speaking, the maximum information which could be observed is whether rural youths would enter a higher school. The present research is mainly to apply the single-variable probit model to study the influencing factor of the rural youths' probability entering a higher school. Suppose that y is the variable denoting whether students could

enter a higher school, and it is the interaction result of y_D and y_S , and only when rural youths have the demand for

schooling $(\mathbb{Y}_{\mathbb{D}} = 1)$ and the school would admit the student $(\mathbb{Y}_{\mathbb{S}} = 1)$, rural youths could enter a higher school favorably.

$\begin{cases} y = 1, & \text{if } y_s = 1 \text{ and } y_D = 1 \\ y = 0, & \text{otherwise} \end{cases}$

If the problem that schools select students doesn't exist, entering a higher school is students' independent choice, and the access to education is only determined by students' demand for schooling. Here, it is a better selection to use the single-variable probit model to study the access to education. But when rural students' demand for schooling and the selection of the school exert the function simultaneously and the function mechanisms are different, if certain factor simultaneously impacts students' demand for schooling or the selection of the school, the single-variable analysis model can only be used to obtain general conclusion, which can not distinguish the influences of students' demand and the supply of the school. And even if certain factor only influences students' education demand, the single-variable analysis model can only be used to obtain inefficient evaluation value, because in the single-variable probit model estimation, the problem whether students enter a higher school can only be identified, and those explained variables such as the students have the demand for schooling but have not passed the entrance examination and the students have not the demand for schooling, which will obviously induce the deviation of the estimation result.

2.2 Estimation of educational demand-identified bivariate probit model

If rural youths' demand for schooling y_D can be identified by the mode of questionnaire survey, and this excessive information can significantly improve the validity of the estimated result, and more abundant estimated result can be obtained. The bivariate probit model is estimated by the following bivariate equation.

The first equation is to estimate the influencing factor of students' demand for schooling, and it is called as the demand equation. After identifying rural youths' demand for schooling, the second equation will estimate the influencing factor of the selection of the school for those students have the demand for schooling, and it is called as the supply equation.

The establishment of the bivariate probit model is because that only when $y_{D} = 1$, students will apply for the entrance

to the school, and the information about y_s can be observed, and when $y_D = 0$, the information about y_s will not be observed.

The maximum likelihood method (MLE) is adopted to estimate the above bivariate probit equations, and the logarithm likelihood function can be denoted as

$$\ln L(\beta_{s},\beta_{D},\rho) = \sum_{i=1}^{N} \{y_{D}y_{s}\ln \Phi_{1}(\beta_{D}^{i}x_{D},\beta_{s}^{i}x_{s},\rho) + (1-y_{D})\ln \Phi_{2}(-\beta_{D}^{i}x_{D})\}$$

$+y_D(1-y_S) ln[\Phi_2(\beta_D^{\prime} x_D,\beta_S^{\prime} x_S,\rho)-\Phi_1(\beta_D^{\prime} x_D,\beta_S^{\prime} x_S,\rho)]\}$

In the bivariate probit model, $\Phi_1(.)$ and $\Phi_2(.)$ are supposed as the normal distribution functions.

Comparing with the estimation of the single-variable probit model, the education demand-identified bivariate probit model could identify and more largely utilize the information that the samples in which students have not entered a higher school. It makes decomposing of the influences of two factors including students' demand for schooling and the selection of the school feasibly, and it can also remedy the deviation of the estimation of the single-variable probit model, so the more effective measurement estimation result can be obtained.

3. Descriptive statistical characters of the demand for schooling and its satisfied degree

It is easy to identify whether rural youths could acquire higher education, but rural youths' demand for schooling is difficult to identify. If rural youths finally participate in the education of certain stage, so they certainly have the demand for the education in this stage. But for the students who have not entered a higher school, rural youths' demand for schooling can not be directly observed. These problems will usually be encountered when studying the credit acquirement. The usual solution is to adopt the direct elicitation methodology, and the measure of questionnaire survey is used to identify the credit demand, for example, Huang Zuhui, Liu Xichuan and Cheng, Enjiang (2009) directly identified the excessive information of credit demand by the questionnaire survey to study the credit acquirement of China. In this article, the survey data just offer the item about the causes that the students have not entered a higher school, so it can identify whether these students have the demand for schooling.

Concretely speaking, the causes which influence rural youths to accept the subsequent education can be approximately divided into two sorts. The first sort includes individual or family factors, and as seen in Table 1, "couldn't afford to the

school charge", "would not go to school themselves" and "lacking in labor force in their families" are main individual or family causes to restrain the access to education in various stages entering a higher school, and these factors influence individuals' favors to accept education or the economic cost and the opportunity cost to accept education. The second sort comes from the special enrollment quota control in China, and because of limited education resources, China establishes strict entrance examination selection system in various classes of education, and distributes the education opportunities by the selection. In this survey, the primary scholars, the junior high school students, and the senior high school students who have not entered a higher school because they didn't pass the entrance examination respectively occupy 7.51%, 27.61% and 38.12%. It is obvious to see that in the higher education stage, the function of the education quota control is more obvious.

To participate in the entrance examination can be regarded as the symbol whether students would enter a higher school and have the demand for schooling, so those students who have not passed the entrance examination of higher school are the appliers who have the demand for schooling but are eliminated by the school. Table 2 shows the statistical result of students' demand for schooling and the relative satisfied state in various education stages entering a higher school. In addition, because higher education stage have stronger education quota control degree, the satisfied degree of the demand for schooling is lower, and because of two above causes, the access of the education in higher schooling stage is worse.

4. Setup and explanation of variables

The former literatures studying the access to education and the educational disparities mainly considered the influences of the individual characters of the sex and nationality, the parents' education background, the parents' occupation (class) status, the family economy and the family structure on the access to education for children. Except for above factors, aiming at the special background of rural youths' access to education, the explained variables such as "parents do works for others far from hometown" and "whether there are long-term sickened members in the family" are added in this article. Following analysis can indicate that above factors can simultaneously influence rural youths' demand for schooling and the selection of the school. The factor of the provincial higher education opportunity is also considered in this article, and it can only influence rural youths' demand for schooling after graduating from the junior high school, but will not influence the selection of the school for students.

Parents' education degree has positive influence on their children's access to various classes of education. The family with higher parents' education degree has higher education anticipation for their children, and their children will also accept this concept certainly, at the same time, parents with higher education degree have the ability to implement tutorship and explanation for their children's learning (Li, Yu, 2006), so their children's demand for schooling will be enhanced, and the possibility that their children are selected by the school will be enhanced also. In this research, parents' education degree is the education degree will be converted into the education term. Parents' education were surveyed in 2005, and parents' education level will not change largely, so the survey data can basically represent parents' real educated degree when their children make the decision to enter a higher school from the junior high school at 16 years old.

The family income is the important factor to influence children's access of education. On the one hand, many students can not afford the schooling or think a lot of the work income than the demand of education because of the limitation of the fluidity, or they will more consider reduce the family burden as soon as quickly, and give up the chance to enter a higher school. At this time, the family income will influence rural youths' demand for schooling. On the other hand, rich families can enhance students' learning ability by purchasing counseling books, employing family education, or offering more convenient conditions for students, and with the development of the education marketilization in China, the channels bartering economic resources for education change increase more and more, such as sponsoring enrollment, and pay students in the double-track system, and the family income will indirectly influence the selection of the school for students.

It is very difficult to study the influences of the family income on the access of education as viewed from the empirical data. First, because of the limitation of the data, the real family income of 16 years old youths when they make the decision to enter the junior high school, and the survey data only could show the income information of the family members in the late of 2005. Second, even if the real family income is known, the family incomes of the youths in different education stages accepting the education of the junior high school can not be compared, and the quick variance of the family incomes induced by the quick economy development of China also pricks up the comparison unbalance of the data. According to above situations and the limitation of data, the compromise scheme is to acquire the ranking of family incomes, not the absolute amount. The parents' non-agricultural incomes in 2004 are selected to study the ranking of family rankings because first, rural households have the character to make decisions by the unit of household, and parents' incomes will undoubtedly occupy the large proportion in the children's education payout, second, the family structure in the late of 2005 may be largely different with the family structure when 16 years' old children make

the decision to enter the junior high school, so it is the better selection to only consider parents' incomes, third, the non-agricultural incomes would more represent the ranking of the income abilities, and the difference of non-agricultural incomes is the main factor to induce the income difference in rural regions. To deal with the problem that the family incomes in different stages can not be compared, for the samples making the decision to enter the junior high school in different stages, the parents' non-agricultural incomes in 2004 are respectively ranked. The concrete operation method is that the households which parents' non-agricultural incomes are not zero are divided into four groups according to rural youths' ages in 2005, i.e. below 20 years old, from 20 years old to 25 years old, from 25 years old to 30 years old, and above 30 years old, and each group is divided into the low subgroup, the middle subgroup and the high subgroup according to parents' non-agricultural incomes in 2004. Because parents' non-agricultural abilities in different ages are not even to change, so this treatment method can not completely reflect the income ranking when 16 years' old children make the decision to enter the junior higher school, but it can effectively reduce the problems that the data can not be compared.

Parents' predominant occupation and class background will influence children's education anticipation and the acceptance ability of education by influencing the cultural capital of family (Liu, Jingming, 2008). Considering the sample character of rural regions, for parents' occupation division, the class of farmer is a individual sort, and the principles of the party and administration departments, and the enterprises and professional technology employees are combined as one sort, and these people represent the predominant class in the rural regions, and others occupations and the samples which occupations can not be known are regarded as other classes. The parents' occupation backgrounds in the survey of 2005 basically can represent parents' occupation background when their 16 years old children make the decision to enter the junior high school.

After Becker (1960) put forward the quantity-quality trade-off theory, i.e. families would balance the quantity and quality of their children's education, many empirical researches have validated the negative correlation relationship between the family scale and the education quality, and the research aiming at China could be seen in Li's article (Li, et al., 2008). When family has several children, parents' energy will certainly be dispersed to look after them, and the family income has to support these children's education simultaneously, which will influence children's demand for schooling and learning ability, and the possibility that they are selected by the school. In the survey data, the information of the family scale can be obtained directly.

With the transformation course of China, it is very universal for rural labor forces to flow to urban regions. And parents' migrant working will largely influence rural youths' access to education. De Brauw and Gile's research (De Brauw and Gile, 2006) showed that good migrant opportunity may make rural youths to select the present income, but influence the will to enter the junior high school. Parents' migrant working obviously will make children to have better migrant opportunity and channels. In addition, the problem about unattended children has been extensively concerned by the society in recent years. Those parents who often work far from hometown have not the ability to look after their children's life and learning, so children's educated ability and the will of schooling will be influenced. The proportion that rural youths' parents had worked far from the hometown above three months is used to represent the variable that parents worked far from hometown in this article.

The influence of sickened family members on youths' access to education is still rare. Especially in the rural regions that the medical guarantee has not been spread, long-term sickened member in the family represents very expensive medical payout, which will make rural youths to more easily give up the opportunity entering a higher school because of the limitation of the fluidity, and accordingly influence their will to enter a high school, but the sickened family members basically will not influence the selection of the school for students. The survey data in 2005 can be used to inquire whether the family has the patient with over three month's chronic disease when the 16 years old rural youth makes the decision to enter the junior high school.

The influence of the provincial higher education opportunity on rural youths' demand for the schooling of junior higher school is also reviewed in this article. Comparing with other developing countries, the higher education return of China is higher, but the return of the senior higher education is very low (Zhang et al, 2005). When the entrance opportunities of higher education increase, the incomes that rural youths continue to enter a higher school will be enhanced, and the will of rural youths graduating from the junior high school to participate in the subsequent education will be enhanced. However, the provincial higher education opportunities basically will not influence the selection of the school for students. Li Lifeng's method and data (2007) are adopted to reflect the difference of the provincial higher education opportunities in different years, i.e. dividing the proportion of the various provincial enrollment amount of higher education in the whole country, and obtaining the index of entrance opportunity.

5. Empirical analysis result of bivariate probit model estimation

5.1 Educational demand-identified bivariate probit model estimation

By the estimation method in the Chapter 3, the education demand-identified bivariate probit model is adopted to respectively study the influences factors of the access to education from the junior high school to the senior high school,

and from the senior high school to college, and the estimation result is seen in Table 3. For example, when the problem whether students have the demand for schooling and acquire the education of the senior high school in the stage from the junior high school to the senior high school, the control group is the samples who has completed the learning of the junior high school and has not accepted the subsequent education.

In the stage from the junior high school to the senior high school, whether the demand for schooling or whether the selection of the school will obviously incline to those students with predominant family and society backgrounds. The influences of most explanation variables including parents' educated term, family non-agricultural income, father's occupation, family scale, long-term sickened family members and provincial higher education opportunity on rural youths' demand for schooling and the selection of the school are all consistent with the theoretical anticipation. The bivariate probit model allows comparing with the influences of students' demand for schooling and the selection of the school on the access to education by comparing with the demand equation and the supply equation from the significance and the coefficients of the variables. For example, comparing with children's demand for schooling, parents' educated term exerts larger function for children's learning ability, and the family children scale will largely influence rural youths' demand for schooling.

But in the stage from the senior high school to college, the family and society backgrounds basically have not significant influences on the demand for schooling and the selection of the school, which is significantly consistent with the researches in others countries, i.e. the family and society backgrounds would largely influence the stage of lower education. At the same time, that is related with the sample characters of poor rural households, and small part of students entering the senior high school have belonged to the families with predominant family and society backgrounds, and whether these students could enter colleges is mainly determined by their individual efforts or abilities, not relatively better family backgrounds.

5.2 Comparison with the estimation result of single-variable probit model

To explain the meanings and advantages of the education demand-identified bivariate probit model estimation, the estimation result of the single-variable probit model can be compared with the measurement result. The explained variable in the single-variable estimation model is whether rural youths enter a higher school in certain stage. Comparing with the single-variable probit model or the Logit model, the estimation advantages of the education demand-identified bivariate probit model are mainly reflected in following aspects.

First, the bivariate probit model estimation can acquire more information, i.e. acquiring the influencing factors such as the demand for schooling and the selection of the school simultaneously, and identify and decompose the different influences of two sorts of factor on the access to education by comparing the estimation significances and coefficients of the supply equation and the supply equation.

Second, especially when certain factor can only influence students' demand for schooling and the selection of the school, the single equation model will easily produce the deviation of the estimation result, so the effective measurement result is hard to obtain. For example, in the stage from the junior high school to the senior high school, the bivariate probit model estimation result shows that the provincial higher education opportunity would significantly positively influence rural youths' demand for schooling, but the single-variable probit model estimation result could not indicated the significant influence of this variable. The estimation result of bivariate probit model indicates that the family children scale would significantly negatively influence rural youths' demand for schooling, and the significant influence of the selection of the school has not been found, but the single-variable probit model estimation could directly show the insignificant influencing result.

6. Time-sequence characters of the demand for schooling and its satisfied state

It is very necessary to review the time-sequence characters of rural youths' demand for schooling and the enrollment quota control in the system variance of China, which can not only open out the basic trends of the access to education in various educational stages, but review whether the obstacles of the access to education in different term from the supply layer or the demand layer, and point out the time-sequence change trend of these obstacles. The same term of birth group method is adopted in the research, i.e. matching the information of the access to education of corresponding years in different education stages according to the education characters such as youths above 16 years old enter the senior high school and youths above 19 years old enter the college in rural regions to implement the statistics.

First, the time-sequence characters of the stage from the junior high school to the senior high school are studied. In Figure 1, the entrance rate from the junior high school to the senior high school continually increase in recent tens years. The increase is mainly because the satisfied degree entering the senior high school is continually enhanced, i.e. the control of enrollment quota continually is loosed, not the enhancement of the demand for schooling. The proportion of the junior high school students with the demand for the schooling of the senior high school is always kept in about 60%, but the satisfied degree of the demand of entering the senior high school had been ascended from about 50% in 1990 to above 80% after 2000, which make the proportion of the junior high school students who can accept the education of

the senior high school to approach 30% in 1990 to above 50% after 2000.

Comparing with that, the access to education of the stage from the senior high school to college has not obvious time-sequence trend. The proportion of the senior high school students who have the demand for entering the college is basically in 50%~60%, and the satisfied degree of the demand for schooling has been ascended in recent years, and at present, about 50% students' demand for schooling can be satisfied.

7. Conclusions and policy implication

Based on the data obtained from the rural life level and rural social assistance household surveys organized by the China Ministry of Civil Affairs in four provinces in 2005, the demand-identified bivariate probit model is adopted to identify whether rural youths have the demand for schooling, distinguish between the students' demand for schooling and the selection of schools, and open out the influence and function of family and social backgrounds on rural youths to acquire the education above junior high school.

As viewed from the empirical data, both the deficiency of the demand for schooling and the entrance examination failures with the will of schooling are important obstacles to restrain the access to education. The problem of the enrollment quota control in the stage from the junior high school to the senior high school has been basically solved, and the bottleneck to improve the access to education is to improve the demand for entering the senior high school. And in the stage from the senior high school to the college, large space to further eliminate the enrollment quota control still exists, but to improve the demand from the senior high school to the college is the key factor. Therefore, except for expanding the enrollment scale, the government is necessary to adopt further measures to try to enhance students' will of schooling. The causes that students have not enter a high school show that the most important factor restraining the demand for schooling is that students can not afford the schooling charges, therefore, the government should urgently constitute the schooling charge and life allowance assistant polices aiming at poor students in rural regions to face the fluidity limitation in poor farmers' education investment when the education costs continually ascend.

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	Don't enter a higher	Don't enter a higher	Don't enter a higher
	school after	school after	school after
	graduating from	graduating from	graduating from
	elementary school	junior high school	senior high school
Didn't pass the enrollment exam of higher school	7.51	27.61	38.12
Couldn't afford to the school charge	61.05	42.28	20.22
Would not go to school themselves	22.21	25.10	21.30
Lacking in labor force in their families	2.84	2.51	2.93
Sickened or disabled	2.33	0.45	0.46
Need to look after family members	1.12	0.31	2.16
Parents didn't allow them to go to higher school	0.61	0.22	0.00
Too far from the nearest school	0.00	0.00	0.15
Other causes	2.33	1.52	14.66

Table 1. Survey result of causes that surveyed students don't enter a higher school

Table 2. Students' demand for schooling and its satisfied state

	From elementary school to junior high	From junior high school to senior high	From senior high school to college
	school	school	
Without the demand for schooling	15.24	42.53	46.36
With the demand for schooling but didn't pass the enrollment exam	1.25	16.29	28.55
With the demand for schooling and passing the enrollment exam	83.51	41.18	25.09
Satisfied degree of the demand for schooling	98.52	71.66	46.77

Table 3. Estimation result of educational demand-identified bivariate probit model

	Stage from junior high school to senior high school		Stage from senior high school to college		
	Supply equation	Demand equation	Supply equation	Demand equation	
T (1)	-0.709***	-0.515***	-0.110	-0.241*	
Han nationality	(0.056)	(0.053)	(0.151)	(0.137)	
Saw (male is 1 and female is 0)	-0.099**	-0.053	-0.077	0.056	
Sex (male is 1 and iemale is 0)	(0.046)	(0.046)	(0.103)	(0.096)	
Eather's advanted term	0.034***	0.037***	0.004	0.012	
Father's educated term	(0.006)	(0.006)	(0.014)	(0.013)	
Mather's advanted term	0.039***	0.014**	0.003	-0.020	
Mother's educated term	(0.007)	(0.007)	(0.013)	(0.013)	
Parents' nonagricultural income is in the low	-0.185**	-0.085	0.141	-0.073	
group	(0.083)	(0.081)	(0.220)	(0.204)	
Parents' nonagricultural income is in the	-0.096	0.040	0.312*	0.114	
middle group	(0.086)	(0.087)	(0.171)	(0.166)	
Parents' nonagricultural income is in the	0.359***	0.459***	0.123	-0.060	
high group	(0.089)	(0.095)	(0.163)	(0.154)	
Eather's accuration is former	-0.163***	0.026	0.026	-0.003	
Father's occupation is farmer	(0.050)	(0.050)	(0.111)	(0.101)	
Father's occupation is in the class of	0.467***	0.488***	0.292	-0.070	
management and technology	(0.124)	(0.137)	(0.197)	(0.191)	
Scale of family shildren	-0.014	-0.065***	-0.030	-0.119**	
Scale of family children	(0.024)	(0.024)	(0.057)	(0.053)	
Parents do works for others far from	0.111	0.287	0.258	0.316	
hometown	(0.182)	(0.187)	(0.421)	(0.402)	
Whether there are long-term sickened		-0.163***		-0.247**	
members in the family		(0.041)		(0.125)	
Opportunity of provincial higher education		0.003***		0.003	
		(0.001)		(0.002)	
Itom of constant	-0.237***	-0.044	-0.673	0.107	
tem of constant	(0.084)	(0.109)	(0.185)	(0.233)	
Inverse Mill's ration	7.106		5.800		
	(84.086)		(81.169)		
Value of maximum likelihood function	-3658.080		-899.442		
Observation point	3800		865		

Note: *, ** and *** respectively denote the significance levels of 10%, 5% and 1%.

	Stage from junior high school to senior high school			Stage from senior high school to college		
	Bivariate probit		~	Bivariate probit		a
	mo	del	Single-variable	model		Single-variable
	Supply	Demand	probit model	Supply	Demand	probit model
Hon notionality	equation	equation		equation	equation	
Say	-	-	-		-	
SCA	-		-			
Father's educated term	+	+	+			
Mother's educated term	+	+	+			
Parents' nonagricultural income is in the low group	-		-			
Parents' nonagricultural income is in the middle group	+	+	+	+		
Parents' nonagricultural income is in the high group						
Father's occupation is farmer	-		-			
Father's occupation is in the class of management and technology	+	+	+			
Scale of family children		-			-	
Parents do works for others far from hometown						
Whether there are long-term sickened members in the family	/	-		/	-	
Opportunity of provincial higher education	/	+		/		+

Table 4. Comparison of the educational demand-identified bivariate probit model estimation and the single-variable probit model estimation

Note: + and – respectively denote the positive relationship and the negative relationship above 10% significant level, and the blank denotes the insignificance, and / denotes that the model setup doesn't include this variable.



Figure 1. Time-sequence characters of the demand for schooling and its satisfied state


What's Wrong with Current Chinese College English

Assessment System? Reform or Not?

Fen Gao

School of Foreign Languages, Shaanxi Normal University, Xi'an 710061, China School of Education, University of Massachusetts, MA 01002, US E-mail: gaojjyy@126.com

Abstract

The author expounds the *status quo* of college English assessment system in China and objectively points out some major problems that have negative impacts on college English teaching and learning. On the basis of prons and cons towards the issue, the author intends to come up with some effective countermesures, including converting the idea to further strengthen English teaching reform, to reform teaching method, to establish and conduct multi-level English teaching system, and most importantly to establish reasonable assessment and evaluation system.

Keywords: College English assessment system, Classroom tests, School final exam, CET4/CET6, Reform

The issue of college English assessment system in China seems to be a controversial topic for decades. Many researchers have ever touched upon this topic, Zhao(2001, 2002, 2003a, 2003b) stated that current Chinese assessment system is filled with imperfection and immaturity from the macro point of view and further strengthened that the reform should be under way; Jin(2008) stressed that the inconsistency between college English teaching and learning and that in primary and middle schools and put forward some solutions to promote the reform of English teaching and assessment; Cheng(2004) conducted the comparative analysis of the assessment practices used at universities in three different ESL/EFL contexts in Canada, Hong Kong, and Beijing, and found that Beijing is the place where the objective test items are mostly valued in assessment system.

So far few studies conducted have been specifically done with the problems of assessment system popular in Chinese context. Therefore, what I am concerned about in this article is the issue of assessment of English proficiency of college non-English majors in China. Nowadays, the popular assessment items for the college students consist of as follows: National Matriculation Entrance Test (NMET); classroom tests; school final examination; College English Test (CET4/CET6).

College English Teaching, Learning and Assessing in China

With China hosting the 2008 Olympics successfully and developing itself as a powerful nation, a more modern educational system that prepares people to interact with global society is urgently needed. China's college English teaching has existed for more than twenty years in which it has witnessed several stages of development and now it comes to the stage of maturity and perfection. College English is a 2 year required basic course for non-English undergrauates in all the universities of China. Unfortunately, the truth is college English teaching is fairly lengthy and learning is fairly painstaking. The teachers mostly adopt the spoon-feeding method, which dominates the whole class from the first minute of the class until the end, and oppositely the students are confined to remain their seats listening passively for decades. As a consequece, the students are found to be rather poor and undeveloped in oral English and communicative skills. The students' English proficiency in the aspects of listening, reading, writing, and translation is routinely assessed by the college final exam at the end of each semester and CET4 in the second year of college.

Problems in Current College English Teaching, Learning and Assessing

The following are respectively the problems prevailing in current college English teaching, learning and assessing: imperfect education management system; unscientific teaching objectives; insufficient attention and input to English teaching; contradictory assessment system. What I emphasize on here is the contradictory assessment system, which is categorized into the types as follows: National Matriculation Entrance Test (NMET); classroom tests; school final examination; College English Test (CET4/CET6). NMET is a kind of national entrance exam required for all the high school students to attend so as to catch the chance and possibility of going to the college or universities. Frankly, NMET is a rather difficult proficiency test that all the students have to take painstaking efforts and energy for the preparation in order to achieve the satisfactory scores. But only the small numbers of them have the slim chance to make it.

As to classroom tests in college, it is always prepared by English teachers to check the students' mastery of book knowledge, which offers the valuable information for the students to improve their learning and teachers to promote

their teaching. What's more, the school final is designed for the students at the end of each semester, which covers mostly the majority of book stuffs plus some extra ability items. Finally, CET4 is a nation-wide test administered by the Ministry of Education for the purpose of testing the college students' overall abilities on listening, speaking, reading, writing and translation.

Issue Problems

Thus, here arise some problems that need to be addressed with prudence:

How do teachers achieve the balance among classroom teaching, the school exam and CET test?

How much attention and time should the teacher spend in dealing with both school final and CET4 respectively in terms of time, energy and attention ?

How could we get ready for the CET4 perfectly without neglecting the classroom learning and final exam taking?

In what way should the students integrated abilities be valued and assessed? And what are the possible solutions for the above mentioned issues?

College English

College English is a required basic course for undergraduates. The objectives are: to develop students' ability to use English in an all-round way, especially in listening and speaking; to enhance students' ability to study independently and improve their cultural quality. The *Teaching requirements for college English curriculum(2004)* clearly defines the standards of skills in terms of vocabulary, reading, writing, listening and speaking in three respective levels, namely, basic level, intermediate level and advanced level. Each level is concerned with restrictive requirements in above aspects, i.e. listening, speaking, reading, writing, translation.

And the course designing is listed as follows generally: classroom-based (2 periods per week, on reading and writing mainly); language lab-based (2 periods per week, on listening and speaking mainly). Teaching materials, such as textbook entitled New Horizon College English, or New College English or other alternatives, are properly adopted.

Assessment System

1. classroom assessment. Usually, classroom assessment is a class-size nonstandard quiz or test administered by individual teachers autonomously. Classroom tests, as a type of formative assessment, which occur from time to time, are always designed as a simple check-up of students' command of text knowledge in order to help the teachers get to know the students' weakness and improve their teaching.

2. School Final (take Shaanxi Normal University as an example). Generally speaking, school final is a unified school scale final exam at the end of each semester adminstered by the school of foreign languages. Also the school final is established by the university teachers and slected from the test bank at random and designed as an objective and accurate evaluation of the English proficiency based mostly on textbooks in order to check the students' command of language study and teachers' teaching outcome.

3. CET4/CET6. CET(College English Test) has been prevaling for decades among college students since English plays increasingly important role throughout the world. It is a large-scale standard examination, a national teaching-oriented examination administered by the National Ministry of Education. It needs to be clarified that CET4/CET6 is established by professors and experts from several top universities. No doubt the test is designed as an objective and accurate evaluation of the English proficiency of the college students so as to better inform the English teaching of non-English majors in the institutions of higher learning in China. Both CET4 and CET6 occur in June and December annually and presently the full score is 710, starting from January 2005. Those whose mark is above 220 will be awarded a transcript issued by the National CET-4 and CET-6 Commission on behalf of the Bureau of Higher Education of the National Ministry of Education. Even if CET 4 and CET6 are intended to better inform the English teaching of non-English majors in the institutions of higher learning in China, however, CET4 specifically is a matter of life and death regarding the students' successful graduation in that without passing the CET4 the students do have the problems of obtaining their bachelor's degree.

Conflicts

However, it has been argued and debated about the issue of contradiction among in-class tests, school final and CET4 in the recent decades. In other words, in-class test focuses on coverage of textbook stuffs at regular intervals, which is a kind of formative assessments to judge the quality of students' achievement while the students are still in the process of learning. By comparison, as a unified school test, final exam always covers majority of languge points and vocabulary from the text book that have been taught and instructed during the class. There is always a chance to include the test items of integrated ability, which usually provides the information for both teachers to improve their teaching and students to strengthen their learning. While last but not the least, CET4 is a completely proficiency test excluding the textbook at all. In other words, CET4 aims at testing the students' all-round ability, namely listening, speaking, reading,

writing and translation, which is totally irrelavent to what the students have been taught during in class on the basis of textbooks.

Therefore, the problem once again: should the classroom teaching and learning be geared to classroom test or school final or CET 4/CET6 ? And what could be the best proportion respectively for different tests in everyday teaching?

Pros and Cons

Accordingly, there are pros and cons toward this conflicting issue: some people argue that these three tests are interrelated and complementary to each other; the fact is in-class tests and school final both serve the purpose of CET 4 and CET6; class time and attention should be paid to textbook teaching for better preparion of CET4; all tests stimulate and motivate teachers and students in the process of English teaching and learning. On the contrary, a large number of people maintain that the three tests are contradictory to each other, i.e. both in-class tests and final exam are textbook-oriented, while CET4/CET6 is the proficiency test irrelevant to textbook; some people even proposed that CET 4 should be abolished because it overburdens and worries the students. No doubt that everything the teacher does in class should cater for the CET4 to the largest extent, a test of life and death, because it matters the students' successful completion and graduation of college study. All these guaranteed the students' maximum possiblity of getting a better job and a brighter future.

Thus, it is suggested that classroom teaching, learning and assessment, and all other test forms should be combined in terms of the students' all-round abilities, esp. some practical and communicative skills that are possibly applied in the near future after graduation.

Discussions and Reflections

In order to solve the forementioned conflicts, I attempt to come up with some possible solutions, for instance, we'd better convert our ideas to promote English teaching reform, to further strengthen English teaching reform, to reform teaching method, to establish and conduct multi-level English teaching system, and to establish reasonable assessment and evaluation system.

It is true that Chinese Ministry of Education has been reforming the assessment system in recent years, such as the change of scoring system for CET4. There is no pass or fail standard in CET4 with the standard score focusing on the percentage tile relevant to the rest who attend the exam. Unfortunately, it is still seen that some universities enact their own passing score to restrain the students' English learning, thus the reform going back to the old track one again. Recently, the interview "University Head Zhu Qingshi Challenges Old Academic Ways" (Newsmaker Interview, *Science*, 20 November, p.1050) highlights the vision of Zhu Qingshi, the newly appointed president of the planned South University of Science and Technology in Shenzhen (SUST), who intends to shake up China's old, widely-blamed education university system. According to Zhu, NMET will not be used in SUST's admission process and SUST will enroll students directly from grade two of high school. However, the truth is the selection criteria is still doomed to use test grades which is essentially no difference from NMET.

To sum up above mentioned, however, there are still some reflections personally based upon this controversial problem. Firstly, it is still a long way to go for Chinese college English teaching and learning reform. Next, all college tests should be consistent to each other on the basis of classroom teaching and learning. Thirdly, CET4 as a standard exam should produce the backwash effect in the way that it covers as much as it expects and tests the integrated language ability. Lastly CET 4 can continue to exist in the way it perfects itself in terms of contents, forms and objectives.

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ICT in Language Learning - Benefits and Methodological Implications

Kristina Mullamaa Language Centre, University of Tartu Näituse 2, Tartu 51003, Estonia E-mail: kristina.mullamaa@ut.ee

Abstract

ICT as a medium for teaching is becoming more and more acknowledged. In this article we wish to share some aspects of using ICT that have proved positive and stimulating both for students and the teacher. We share our experience in using the Blackboard e-learning environment for teaching language courses in English and Swedish (different levels), for learning terminology, and ESP (English for Specific Purposes). Our focus will be on how the web-based environment can be used for supporting student-centred learning, increasing student motivation, individualisation and cooperation in creating the study-materials, at the same time developing a feeling of "us" and of belonging together. Taking a look at our different past and current courses, we will view different ways of motivating students by engaging them in building the learning materials: data-bases on specific research topics, power-point presentations and on-line dictionaries. We analyse how the ICT solutions can be used as a support for different classroom activities, group-work and pair-work assignments; for independent work; for enforcing student-centred learning and the principles of individualisation; forming one's personal opinion, and being able to express it on topical issues.

Keywords: E-learning, ICT, Language learning, Individualisation, Motivation

1. Introduction

E-learning tends to create dissenting opinions. Some educationalists appreciate its values, others tend to be rather reserved to the option of having the electronic environment "overtake the classroom".

Our experience of using e-learning as a support to our eye-to-eye classes has proved to be positive and stimulating both for students and the teacher. At the same time, there has been a strong incentive from our university to encourage teachers to explore the possibilities of on-line learning.

Some years ago, the University of Tartu started to organise e-learning sessions called "coffee with e-learning". This was based on the example from Scandinavia. Suitably scheduled during the lunch break of the last working day in the week and offering tempting delicacies to coffee, the e-lunches introduced state-of-the-art knowledge about e-learning. The ICT solutions were taught by the IT-support staff who also became the tutors of the teaching staff during building and carrying out the e-courses.

Thus, by 2010 at the University of Tartu all distance learning courses and 30% of the full-time courses should have a Web-based support (http://www.ut.ee/590864). Today, 34 % of courses have some materials up at a parallel electronic system ÕIS. The project is supported by the EU-funded programmes "VANKeR" and "Best".

In language teaching, the educational and tutoring support available can be used in creating the e-learning environments for teaching general language courses in different languages at different levels; for learning terminology, and ESP (English for Specific Purposes) in different fields of specialisation. At the same time, ICT enables us to foster student-centred learning, individualisation and support building up a sense of belonging to a community. In the article below, we would like to share some of these experiences.

2. The theoretical background

2.1 Student motivation and e-learning

ICT supports the modern principles of learning and language acquisition. Individualisation, interaction and student motivation, often considered paramount in modern education theories, are necessarily a part of the process in ICT. As Theobald (2006: 1) points out, some students need extrinsic tools to increase their motivation. Intrinsic motivation, however, is "the ultimate goal of educators for their students" (ibid.). How to make students reach this? Intrinsic motivation is often attributed to finding a value in what students do. Theobald (2006: 1) concludes:

Helping students find value in learning through the implementation of various instructional strategies and multiple alternative and authentic forms of assessments, while maintaining high standards of student performance in an environment which encourages students to do their best work by effective, nurturing teachers, will help increase the motivational levels of all students.

Dörnyei and Otto (1998:65) give us a definition of L2 (second/ foreign language) motivation:

In a general sense, motivation can be defined as the dynamically changing cumulative arousal in a person that initiates, directs, coordinates, amplifies, terminates, and evaluates the cognitive and motor processes whereby initial wishes and desires are selected, prioritised, operationalised and (successfully or unsuccessfully) acted out.

Hasanbegovic (2005) has reviewed a study on the impact of intrinsic motivation on e-learning in authentic computer tasks by Martens *et al.* 2004. The study allows her to conclude:

In line with the motivation theory of Ryan and Deci it is predicted and evidenced that intrinsically motivated students do more in a fixed time period as a result of their higher effort and persistence and will do different things in computer environments that allow for this liberty of choice (Hasanbegovic 2005).

A well-balanced ITC environment will enable students to feel the above and stay motivated throughout the learning process. Motivation, individualisation, learning in context and the activation of the learner - all buzzwords in modern education – are often a part and a parcel of a successful ICT support.

2.2 Modern role sharing: learner responsibility and teachers' roles

An equally important aspect is learner responsibility – the students' capacity to envision and pursue their goals. A modern student, especially at the university level, must know *why* and *what* s/he needs to study, and to be able to design and stick to their personal study plan. Wilson (1981: 61) points out that student development through the university years can be seen as follows:

One view is that student growth occurs through an invariant sequence of stages or levels in which progress from stage to stage implies a restructuring and reorganisation of what went before. 'Higher' stages are qualitatively different from 'lower' stages in terms of the way the individual thinks, feels or acts. Another influential view is that student development is to be seen in terms of mastery of a series of developmental 'tasks' which involve the individual's maturation in the different aspects of intellect, emotions and social relationships.

Today, the role of the teacher is that of an advisor, an expert in the field whose task is to support the student's development. This is much more creative and much more challenging than the more traditional "design and control the study process" concepts. Dörnyei (2001: 35) points out:

/.../ teachers are powerful *motivational socialisers*. Being the officially designated leaders within the classroom, they embody group conscience, symbolise the group's unity and identity, and serve as a model or a reference/ standard. They also function as an 'emotional amplifier' of the group whose appeals and examples are critical for mobilising the group /.../. Simply speaking, to lead means to direct and energise, that is, to motivate.

In education, as elsewhere, increased cooperation and neglecting the earlier rigid borderlines, is becoming more and more common practice. Day and Sachs (2004: 7) indicate:

The core democratic professionalism is an emphasis on collaborative, cooperative action between teachers and other educational stakeholders.

Kiggins and Cambourne (2007: 368-379) emphasise the importance of a "triadic partnership" (ibid. 374) from the very training of young teachers. Kiggins and Cambourne (ibid.) stress:

/.../ trust becomes a required element in the knowledge building process, and if friendship and trust are not present among the student cohort, this process is unlikely to occur.

At the same time, the responsibilities going along with the teaching profession *per se* increase. As Day and Sachs (2004: 7) point out:

It suggests that the teacher has a wider responsibility than the single classroom and includes contributing to the school, the system, other students, the wider community and collective responsibilities of teachers themselves as a group and the broader profession /.../.

2.3 Learning concepts in situated meanings: the possibilities for ICT

J P Gee (2009: 15) points to the importance of learning of concepts in situated meanings. It is only if students have acquired and tried out the contents of concepts in situations that teach and test their real meaning, that learning has happened. Without that, students may be able to complete seemingly perfect "pen and paper" tests. However, at closer testing, they prove not to be able to solve real problems (cf. Gardner 1991, in Gee 2009: 15).

We suggest that ICT and web-based learning solutions offer the learners the possibilities for making the learning process more interesting and challenging. Some of the capacities here are attractive and enthusing, even similar to what has been pointed out as the educational reserve of video games. J P Gee suggests (2009) that the principles these follow often relate to the principles of encouraging active learning. Out of the capacities that Gee relates to positive learning techniques in video-games (Gee 2009: 22), we associate with ICT the following: interactivity, adaptability, a gradual build-up of the level of difficulty, and following the principle of the "cycle of expertise".

Also, the modernity of the medium and its parallels to the developments in virtually all other spheres of human life, where the digital revolution reaches from citizen journalism to museum pedagogy (cf. Gottlieb 2009: 26-37), help to make it attractive.

A recent SRI International for the Department of Education in Estonia (http://www.ed.gov/rschstat/eval/tech/evidence-based-practices/finalreport.pdf) demonstrates that the learning results that have been reached by using ICT solutions are more profound than the learning results achieved through using traditional learning methods:

On average, students in online learning conditions performed better than those receiving face-to-face instruction. Over the 12-year span, the report found 99 studies in which there were quantitative comparisons of online and classroom performance for the same courses. The analysis for the Department of Education found that, on average, students doing some or all of the course online would rank in the 59th percentile in tested performance, compared with the average classroom student scoring in the 50th percentile.

Below, let us take a look at some practical implications of using ICT in our language teaching.

3. The experience of using ICT in teaching general language courses and ESP

3.1 The general layout of the web-based courses and the main goals of using ICT support

In our experience, ICT has proved to be a good environment for general language courses (English and Swedish at different levels), as well as for learning terminology and ESP (English for Specific Purposes) (Aviation English). The courses have been offered as a support for ordinary classroom teaching, i.e. the web-based courses usually:

run parallel to the face-to-face seminars

support what has been learned in the classroom

include exercises on texts/ grammar covered in the classroom

The main goals of using the ICT are to support:

learning and acquiring new vocabulary in English and Swedish

forming one's personal opinion and being able to express it on issues topical in one's field of specialisation, as well as topics of general interest (links to topical articles & hot debates both in Estonia & abroad, web-links, multimedia resources)

learning ESP

This can be done in different ways, for example using the more traditional solutions like:

on-line vocabulary exercises on texts we read & discuss in the classroom

links to self-correcting grammar exercises (individualisation)

on-line dictionary created by students step-by-step, course-by-course

information about different projects

e-mail

forum

self-tests on-line

a clear structure, course plan, calendar – important dates, dates for when to present one's work, field-trips always at the click of the mouse

personal feedback on different skills, on accomplishing different tasks

Out of the areas mentioned above, creating on-line dictionaries, power-point presentations and exercises integrated with the activities carried out in the classroom deserve further attention.

3.1.1. Creating on-line dictionaries

Our experience suggests that on-line dictionaries can prove most useful in learning ESP and creating terminology. This was especially conspicuous in the case of teaching Aviation English. In this discipline, we did not have established terminology in Estonian for many years, as aviation education in our language was eliminated in the 1940s and was restored only in 1993 with the creation of Tartu Aviation College. Terminology was developed in the lectures and workshops of the main field of study, sometimes also accompanied by finding the counterparts to items of English terminology in the English language lessons, with active cooperation with students. The on-line dictionaries served as a term-bank built by students in the field, accessible to the whole student community from the moment each respective student added their vocabulary item to the on-line environment.

3.1.2. Power-point presentations

Something as basic as power-point presentations has proved to be most popular with students. Presented in the classroom, the power-point presentations remain up on the net, and offer students the possibility of revisiting the presentations they liked the most, checking up the new vocabulary items presented in the power-point reports, and revising new knowledge on topics interesting for them.

3.1.3 Extension to activities in the classroom

Exercises designed as an extension to activities carried out in the classroom support the acquisition of vocabulary, forming one's personal opinion, and being able to express it on topical issues. It enables students to understand their area of specialisation and many other important issues in a wider context and to put it into a perspective that stretches beyond their university, country, and continent.

Another important aspect is the possibility of immediately shaping the learning materials to answer the students' needs. It may, for example, be appropriate to add a grammar or vocabulary exercise in an area/ or on a topic that needs active learning or revision. Encouraging students to cooperate in the process of creating and shaping the study process keeps them interested and motivated.

3.2 Web-based solutions integrated with classroom learning

The web-based solutions also offer good possibilities for carrying out eye-to-eye lessons in the computer classroom. The ICT solutions can be used as a support for different classroom activities, e.g. the group-work and pair-work assignments in class, but also for follow-up independent work on classroom activities for students with a different learning style, or as preparatory work. The goal in all these instances is encouraging student-centred learning and the principles of individualisation (different interests/ levels/ needs). E-learning as a support for learning in the classroom enables us to make the study process more flexible and to better take into consideration the needs of different students. The students are active and " a part of the process".

3.2.1. Multimedia possibilities

For example, the Web-based environment can host different multimedia possibilities for developing speaking skills. It may be done in many different ways. One of the favourites of our students have been the jig-saw pair-work activities that involve:

watching different video-clips,

answering the different questions to both students that become in essence a short summary of the clip they have seen, and

finally, replaying the respective videos with one's partner with the voice on *mute*, the respective student in charge of a certain video providing a voice-over.

If you find an informative and interesting clip on a subject area you are currently working on with advanced students or an ESP group, such an activity can provide students with the latest information, buzz-words and key expressions on the subject area, at the same time offering them a fair amount of challenge.

3.2.2. Finding and sharing background information through the Web

Another popular activity is finding additional information on the texts, phenomena or people spoken about in our articles or student presentations. We often build this up as a group-work activity. And while in ordinary class-room settings the feedback information from the buzz groups remains preserved in our memory, or at paper boards, the ICT learning environment enables students to access their final feedback posted there also later during the course, wherever they are – at home or in Hawaii. Also, the current licences allow us to keep the courses open for participants for at least half a year after attending the course, thus offering perfect possibilities for a longitudinal learning process, and revisiting the materials beyond the official end of the learning cycle. This possibility, coupled with the attention of students from parallel groups and "future generations", is most stimulating, and even encourages them to have an unofficial friendly competition on whose report or power-point presentation looks the best.

4. The benefits of using e-learning as a support for classroom teaching

4.1 E-learning as a support for classroom teaching

ICT as a support for ordinary class-room teaching, and as a part of it, has the obvious benefits of:

easy access whenever and wherever you wish it

dematerialisation (less paper – more trees)

enabling us to use modern methodologies

individualisation (different interests/ levels/ needs)

Contacts beyond our university, state, continent ("broadening the horizons"; "real English", or whatever foreign language for that matter)

Students have

an overview of topical issues, their context and background

easy access for quickly (!) finding inspiration for (continuing) the conversation

developing the skills for finding the right information, analyse, present and discuss it

developing the skills for using the e-environment and new technologies

developing responsibility for the learning process

forming one's own opinion

learning to (dare to) express it

4.2 The ethical dimension: learning to have a say

A Chinese proverb says: "teachers open the door, but you must enter by yourself." Our task is to encourage students. But it is not only the new vocabulary a good language course should give them. It is essential to consider the fact that the immediacy of the information and news reaching our students (through this new language) gives them an opportunity to be informed of and shape their opinion on important topics relating to our society and the "here and now".

As many renowned sociologist and researchers (cf. e.g. Cronin 2002, Pym 2005) have stressed, it is not enough to *have* an opinion - an educated person must *express it to shape the society we live in*. Indeed, much of the knowledge and ideas in the modern 2.0/ 3.0 Web world are related to who has the information and who has it first. And who else should be encouraged to learn to use it to the best of their capacity and following all the ethical principles than students of foreign languages, who in many ways are and become the window to/ from the world of their own society and culture.

4.3 Building trust

Anatole France has said: "nine tenths of education is encouragement". There can be no encouragement without trust (cf. Kiggins and Cambourne 2007: 374 in 2.2. above). As teaching in general, so can also e-learning be organised in different ways. For some, it may be:

a ready-made environment created by the teacher

teacher controlled, students present filled-in exercises, get marks

self-tests

"the teacher's button" with which to control the computers of students when we work together in the computer classroom.

In contrast to this, we have chosen to build our courses on the principles of trust. We believe that students:

can manage

are (almost) grown-ups

can take responsibility

are (to a great extent) responsible

for their study process

Much depends on the teacher's authority type – whether the teacher is autonomy supporting or controlling. Dörnyei (2001a:37) points out:

Sharing responsibility with students, offering them options and choices, letting them have a say in establishing priorities, and involving them in the decision-making process enhance student self-determination and intrinsic motivation /../.

In our experience, supporting student autonomy shows that there is a trust for the teacher, and an increased responsibility for the learning process.

4.4 Creating the feeling of belonging together

In education, as elsewhere, increased cooperation and neglecting of the earlier rigid borderlines, is becoming more and more of a common practice. Such an approach also helps students to retain their motivation. Cocea and Weibelzahl (2006: 2-3) point to the connection between e-learning and the Social Cognitive Learning Theory SCT. In their view, personalization, adaptivity, affective tutoring and collaborative learning, as well as motivation – all aspects also we have emphasized above - all help to increase student satisfaction and learning quality:

Personalization aims to make learning more effective and satisfying by adapting to the learner's needs and preferences. Among the benefits of adapting to the learner's motivation are: enhanced motivation and involvement, empowered learners – making them more responsible and active, increased satisfaction, better quality of learning etc.

Motivation is related to affective computing /.../, because self-concepts are always charged with emotions. Thus, affective agents could be used for both assessing motivation and intervention.

SCT also fits with collaborative learning, given the social framework taken in consideration by this theory and the way learning is influenced by the social context.

Rather contrary to what is sometimes supposed of a web-based environment, the experience shows that it often joins the students in the group. Offering them the possibility to communicate in an environment "natural" for them, the web-based course, if built up in a way that enables the students to participate and open up. It also serves to join

the different terms (over X-mas, during the summer vacation)

different parallel groups (e.g. Group A and Group B learning the same subject)

different years of students learning the same subject

This can be supported through helping students create common databases. In our case, the different power-point presentations and on-line dictionaries created by students have been the most popular items, especially so when the data-base is built up over different study years and together with the parallel group(s). Needless to say, the profiles of friends from a parallel group, and their small roster presentations of themselves also deserve great interest by the fellow students. And while commonly created on-line dictionaries can prove motivating for learning (and creating!) terminology and ESP for advanced students, consider how useful even creating a small roster presentation, or reading those of others, can be for a beginner-level general language student in the first months of their learning practice/ studies.

Analysing our past and current courses we may see that the Web-based environment can help to develop the sense of belonging together. In addition to common learning activities mentioned above, this can also be done through documenting different joint activities. Different common study visits or museum visits, often especially when also documented, and shared, discussed and analysed through the Web, help to develop the sense of belonging together.

Creating a feeling of belonging enables students to open up, to share more information about themselves to group-mates. The supportive experience in "real life" encourages students to share more information digitally. And also vice versa - the information presented in the virtual world makes a good foundation for developing good relations in the classroom. Such processes of merging the virtual with real life, relying for technologies to find a feeling of belonging, and rejoicing over the friends' real life presence happens all the time in many modern lives today. Allowing our students to pursue this way we allow them to communicate and develop in modes and context familiar to and inspiring for them.

It is important to remember that ICT can also help to create special "bridges" between the study periods, different study-years and student groups, helping to shape the feeling of "us".

Conclusion

Gunnar Handahl (2004, 2007) has pointed out the importance of the following dimensions in education:

* Level 1 = Action: You go and teach.

* Level 2= Theory and practice: The reasons why you go and teach. Your background, knowledge of pedagogy, methodological skills, experience as a teacher. Experience transferred to knowledge.

* Level 3 = Values: The ethical and political justification. *Why* am I doing what I do? *Why* am I teaching at all? What does it benefit to the people I teach as

individuals? To the society at large?

As demonstrated in the article above, the level of values and ethics may guide teachers through choosing their medium, procedures and communication patterns with communicating with their students. Behind many of the seemingly practical choices there is a worldview based on active research and being familiar with the recent theoretical approaches. Many years of teaching practice and - as a teacher in different learning groups - participant observation also help to analyse and shape the processes. Hopefully, anchorage in deeper theories, principles and ethics can support students in making meaningful choices.

With the development of Web 2.0 and 3.0 there are still endless opportunities for novelties, development and change. Students are becoming more and more engaged, the communication and learning are less and less teacher-centred. In these developments the role of teachers, students, and learning itself are continuously changing to offer exiting possibilities for further development. Many of these developments are to be discovered in the work process together with the students and colleagues from all over the world.

Long before the e-learning era, Plato (428 BC- 348 BC) said:

"Someday, in the distant future, our grandchildren's grandchildren will develop a new equivalent of our classrooms. They will spend many hours in front of boxes with fires glowing within. May they have the wisdom to know the difference between light and knowledge".

Hopefully, a student-centred approach based on individualisation, increasing the student motivation, and responsibility, can be of support on this way.

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Advantages and Disadvantages of Student Loans Repayment Patterns

Hua Shen (Corresponding author) Faculty of Education, Hubei University 11 Xueyuan Street, Wuhan 430062, China E-mail: shenhua1997@163.com

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Abstract

It is a difficulty problem to choice repayment patterns of student loan. "Conventional mortgage-type loan" and "Income contingent loan" has been performed in many countries. These loan repayment manners have their own characteristics. In this paper, we discuss their advantages and disadvantages, and would provide policy choice for student loans programs in China. These suggestions maybe supply references to other developing countries.

Keywords: Student loans, Conventional mortgage-type loan (CML), Income contingent loan (ICL)

1. Introduction

There are many patterns of the student loans repayment, for example, the "Conventional Mortgage-type loan (CML)", "Income contingent loan (ICL)", graduates tax, employer tax, social pension, national forgiveness and so on. The CML and ICL are mostly performed right now. Many economists, policy makers and aid office staffs discussed the pros and cons of these two kinds of loan repayments. Different countries choose different repayment manner to improve their student loan efficiency.

In this paper, besides the first part, it includes the following parts: the second part discusses the CML repayment manner; the third analysis the ICL repayment pattern; the last part, according to the student loan situation in China, gives some suggestion for policy.

2. Conventional mortgage-type loan (CML) repayment pattern

The Conventional Mortgage-type student loan has been most commonly adopted by many countries. This repayment manner is one of the commercial loan which is called amortization. Its main feature is that during the loan periods the borrower pays off the loan all the principal and interest according to a certain interval. Each paying amount is fixed in every certain time point.

2.1 The CLM repayment condition

In many countries or regions, they have adopted the "traditional mortgage-type" student loan repayment program to specify the installment method. Amortization condition includes interest rate, repayment period, repayment frequency, each repayment amount and so on (See Table 1).

Interest rate is the ratio of the lending amount to the repayment amount, and it is often regulated by lending interest rates of commercial bank, inflation rates or consumer price index etc. In many countries, governments usually support interest subsidies for student loans programs. For example, during the study and the grace period, the interest is exempted, or only considering the inflation, the real interest rate is zero or a fixed rate.

Usually total repayment periods include a grace period, repayment period and extend period. The grace period is the interval from graduation to the first repayment beginning time. Its role is to postpone the first repayment, to provide students with job gaps, thus reduced the initial debt burden. Repayment period is the length of time which the borrowers pay off all principal and interest. The extended period is provided to the borrower who could not fully repay the loan on time and requests to the bank for extending the loan term.

The forms of conventional mortgage-type loans are also diversified. Some loans of repayment frequency are monthly, quarterly or annual installments equal payments. Such as the Government Subsidized Student Loan (GSSL) is the quarterly repayment in China. Some student loans are graduated repayment installments which the amount of each repayment increased from 1.5% in the first year and gradually added for the last 13.0% during 15 years such as in Thailand (Ziderman, 2003).

In general, repayment conditions are diversified in student loan program, and it also reflects the student loan characteristics in different countries.

2.2 The CML advantages

2.2.1 Borrower preknowing the certain paying point of time, interest and amount

The biggest advantage of amortization method is that borrowers could precisely calculate the repayment capital and interest according to their loan amount and interest rates, so that the graduates clearly know their loans debt burden. In order to avoid loans default, students could determine their own amount of loans. For example, the Direct Student Loan Program in the United States, assuming that student borrows \$5,000 U.S. dollars, according to the contract his repayment periods are 10 years, so he should repay monthly \$61 and the total principal and interest of \$7,395. At the same time, graduates are also clearly aware of their principal and interest repaid each time point, it can reduce the repayment default caused by their memory errors.

2.2.2 Lender preknowing the collect amount

The lenders as well as could calculate and preknow how much they collect, in order to determine invest the project funds in the next year. It makes the student loan program become the real "opened loan fund" not "unlimited capital investment". For example, the Student Loan Scholarship in Japan, the ratio of the amount of annual reimbursement loan to the lending increased from 15.6 percent in 1981 to 26.8 percent in 1985, and to 42.6 percent in 1994(Zhao,1996). In 2006, the recovery proportion of two categories student loan further enhanced. In the Student Loan Scholarship of the first category, the loan repayment amount is 1.718 billion yen, accounting for 63.1 percent in the lending amount. From the overall perspective, the rate of the repayment to the total investment is 29.42 percent (Shibata Masayuki, 2006). After several years of operation, student loan funds could in theory achieve self-sufficiency.

2.2.3 No need for private income track and collection

Graduate repayment amount is fixed, and is not relationship to graduates future income. There is no need exactly to track and calculate the private income, which can significantly reduce student loans management costs.

View of the above advantages, Professor Johnston and Professor Adrian Ziderman recommend to adopt the CML in developing countries. Professor Johnstone said "More important, a conventional loan with a lower present value of repayments is still fundamentally less expensive to repay, and therefore arguably "better" for the student borrower, than an income contingent loan with a high interest rate and a high present value of the total expected repayment stream, even if the income contingent loan may seem more 'manageable'." (Johnstone, 2000) Apart from the above advantages, there are also many disadvantages of the CML which could not be overcome by themselves.

2.3 The CML disadvantages

2.3.1 CML not general availability

The loan eligibility needs to be determined before loan disbursement. Means-test is the most useful method to investigate the economic situation of student family. Knowing the household income of loan applicants is an arduous and difficult work. The deviation of household income survey will result in poor student difficult to obtain loans. On the contrary, students from wealthy families enjoy the loan assistant.

2.3.2 Repayment amount not correspond to graduate income

The each repayment amount of amortization is fixed and unchanging, so the graduate debt burden is contrary with the expected revenues. This repayment method is not sensitive with the graduate future income. With the increasing of working years, the borrower income will be enhanced. However, at an early working stage student personal income is relatively low and his debt burden is high incurred loan Therefore, amortization incurred high risk loan arrears and defaults.

2.3.3. Defaulter credit record be hurt

In the case of financial credit system maturing, the graduate appears student loan default, and it will directly affect the borrower's credit rating and credit records, such as housing loans and other consumer goods may be blocked. In addition, since poor students fear of loan defaults, they may abandon the student loan application, then ultimately impact on higher education accessibility.

As the CLM have some shortcomings and disadvantages. In 1989, a complete new student loan pattern happened in Austria, and the Australian government performed the Higher Education Contribution Scheme (HECS). Now we introduce the income contingent student loan repayment pattern.

3. Income contingent loan (ICL) repayment pattern

3.1 The ICL repayment condition

Income contingent loan is "the collection of the debt depends on the borrowers' future levels of income" (Chapman, 2005). It includes ICL with Risk-Pooling, ICL with Risk-Sharing, Graduate Taxes and Human Capital Contract (Chapman, 2005). These repayment patterns supply brand-new approach for the student loan.

The ICL repayment condition generally includes the repayment ratio which is the rate of each repayment amount to the income in correspond period, the income repayment threshold and the longest repayment periods (See Table 2). The repayment ratio is the main factor in the ICL, so the different student loan programs have the different repayment ratio. Such as the HECS is from 3 to 6 percent, and the student loan in New Zealand is the 10 percent of the total income minus the 15,492 NZD. Some countries have the longest repayment periods which are about 20 years. After the longest repayment periods, the loan could be forgiveness.

3.2 The ICL advantages

At first, the ICL is universal acquirable. The income contingent loan needs not means-test, there is no applicant eligible. Student could apply this loan according to their study fee. So there is not the applicant identification qualified, many students could obtain the loan.

Secondly, no repayment delinquencies and default take place. The ICL repayment amount is the proportion of the graduates future expected income, and just only the earning is more than the minimum income criteria, they will start their loan repayment. This does not occur repayment defaults and arrears, nor hurt the borrower's credit reputation. So it avoids the loan reverse selection and moral hazard. It is the most predominance of the ICL

Thirdly, the ICL have the high collecting efficiency through effective loan management institution. The ICL repayment amount based on the graduate expected income, so high income person could quickly pay off in the short term. At the same time, the government authorized tax institutions, pension insurance institutions and other related departments directly to deduct loan from personal income. So it saves the management costs and increases the efficiency of the loan collection.

3.3 The ICL disadvantages

Like a coin, everything has its two sides. The ICL also have its shortcomings. Now we discuss the disadvantages of the ICL.

Firstly, it is very difficulty to track the personal precise income in long-term. To determine the individual income is a difficult task, in the absence of effective mechanisms for income reporting and tax conditions, especially in developing countries. At the same time, it is also tight to determine the borrower repayment ratio, whether the income is pre-tax or after-tax. In addition, the low-income graduate repayment periods will normally be 20 years or longer, so loans last their lifetime or even several decades.

Secondly, an efficient loan management and recovery institutions should be matched to the ICL. Implementation of this student loan manner, the loan recovery is usually done by specialized agencies. For example, the Higher Education Contribution Scheme (HECS) in Austria, the universities should provide students with the tax numbers and specific amount of the loan to the tax system of Internal Revenue Department. In Ghana, the social pension insurance fund collects loans. In contrast, in Ethiopia, since the lack of a comprehensive income tax collection agencies and awareness of loan repayment, loan collecting still dependents on the government, so student loans face abortion in Ethiopia (Johnstone & Aemero, 2001).

Thirdly, the repayment amount calculation is complex very much. Since personal income changing with the working experience and the environment factors, the repayment proportion will increase with income enhancing, and they will result in the difference of each repayment amount. The calculation of the repayment amount has become more complex than the amortization method which is fixed. Particularly in developing countries or economic transition states, the source of income is diversified and fluctuant, it makes difficult to accurately calculate and estimate the amount.

The last is that the recovery lost is difficult to be detected by financial institution. The low-income borrowers have the relative long repayment periods, especially their incomes below the repayment threshold, they need not pay off. So the financial institution could not find the loan loss in short-term.

4. Policy Suggestions on the Student Loans in China

4.1 Refine the CML repayment conditions

Since the repayment condition is diversified in different countries, the Government Subsidized Student Loan (GSSL) in China could refine the repayment conditions, such as reducing interest and extending repayment periods in order to alleviate debt burden. Financial institution and higher education institution should help students to improve the awareness of paying off the loan, to perform credit reputation education and to prevent loan default.

4.2 Innovate the ICL repayment pattern

There is only CLM manner in China, aiming at the disadvantages of the CLM, we should induct the ICL pattern. According to our survey, graduates have the doughty desire which is using ICL to repayment student loan. If we perform the ICL pattern for unemployed and low-income graduates, it could boost up their repayment trust and facilitate the student loan development.

4.3 Structure the high efficiency and specialization collecting institution

Tax department or social security bureau participate in collecting student loan in order to save the management cost. We could make some experiments in a few of industries, for example government institution, foreign capital enterprise and so on which have the intact income records. Let the graduate choose the repayment manner ICL or CLM. In addition, we could structure the specialization collecting companies for student loan, and invest the student loan to second financial market, then allure more institutions and enterprises to invest student loan.

There is no panacea in the world, each repayment pattern has its advantages and disadvantages. economist Woodhall said that "in choosing between the various options, the planner must take account of : the costs to government of alternative rates of interest subsidy, the burden of debt facing borrowers, and the likely rate of default if repayment terms are too harsh" (Woodhall, 1987). So the repayment manner choice should according to its state conditions, not blindly copy and follow other countries, or else it will result in the irreparable damage, and even lead to the failure of student loan scheme.

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Countries	Interest	Interest	Grace periods	Repayment periods
	during study	during repayment	(month)	(year)
	(%)	(%)		
Germany	0	0	60	20
Russia	22	22	12	10
China(Campus)	0	6.12	0-24	6
China(Local)	0	6.12	0-24	10
Hongkong (LSFS)	2.5	2.5	5	5
Hongkong (NLS)	4.625	4.625	10	10
Japan - category 1	0	0	0	20
Japan - category 2	0	3.0	0	20
Canada	0	6.75	6	10
USA – SDSL	0	3.37	6	10
USA –UDSL	3.37	3.37	6	10
Egypt	0	0	0	40
Namibia	13.8	13.8	0	3

Table 1. The CML repayment conditions international comparison

Sourse: Vossensteyn, 2004; Anashvili, 2006; Ziderman, 2004; Chung&Hung, 2003; Shibata Masayuki, 2006; Usher, 2005; Federal Student Aid, 2006

Table 2. The ICL repayment conditions international comparison

 Countries	Interest	Repayment periods	Repayment	Ratio
Countries	(%)	(year)	threshold	(%)
Australia	Inflate rate	-	36,185 AUD	4-8
New Zealand	0(after 2007)	-	17,160 NZD	10
Stanford loan in USA	8.25	25	\$25,000	6.48
Sweden	3.1	25	-	5
 Ghana	3	10	-	17.5
England & Wales	2.7	25	£15,000	9
Ethiopia	4	15	-	10
South Africa	8.2	-	26,300 SFD	3-8

Source: Information for Commonwealth supported students, 2006; Inland Revenue, 2006; Federal Student Aid, 2006; Usher, 2005; SSNNIT, 2006; World Bank, 2003; Pillay, 2006



What Are the Safety Considerations for Insulin Control for Athletes?

Larry W. McDaniel

Department of Physical Education & Exercise Science Dakota State University E-mail:larry.mcdaniel@dsu.edu

> Sara Olson Dakota State University E-mail:sm.olson@dsu.edu

Laura Gaudet Department of Psychology, Counseling, & Social Work Chadron State College E-mail:lgaudet@csc.edu

Allen Jackson Department of Health, Physical Education & Recreation Chadron State College

E-mail:ajackson@csc.edu

Abstract

Athletes diagnosed with diabetes may have difficulty with fluctuating blood sugar levels during intense exercise. Considerations for athletes with insulin concerns may range from exercise rehabilitation to the use of an automatic insulin pump. The automatic insulin pump is a small battery-operated device the size of a pager. The pump continuously delivers small doses of insulin to the body. It can be conveniently clipped to a belt, waistband, or carried in a pocket. Many athletes have used this machine to assist with insulin control. Medical people believe that those who use the insulin pump will experience improved insulin control. Insulin pumps should be padded during rough physical activity, such as football, because a needle is inserted in the side of their abdomen. The insulin pump regulates blood sugar before and after practice to ensure appropriate insulin levels. Checking insulin levels, while participating in physical activities, is a requirement to prevent further insulin related injuries.

Keywords: Athletes, Athletic trainers, Automatic insulin pump, Coaches, Diabetes, Sports

1. Automatic Insulin Pump

The automatic insulin pump has many features and positive aspects that may benefit diabetics (*Figure 1*). Some of the conditions where insulin pumps should be used:

Recurrent severe hypoglycemia. Suboptimal diabetes control (i.e., A1C exceeds target range for age). Micro-vascular complications and/or risk factors for macrovascular complications. Good metabolic control, but insulin regimen that compromises lifestyle. Who would benefit from insulin pump use? Young children and especially infants and neonates.

Adolescents with eating disorders.

Children and adolescents with a pronounced dawn phenomenon. A condition some people with insulin-dependent diabetes experience resulting in a significant rise in their early morning blood glucose values (around 5:00 am), possibly requiring additional insulin to control.

Children with needle phobia.

Pregnant adolescents, ideally before conception.

Ketosis-prone individuals.

Competitive athletes.

Szypowska conducted a study that analyzed the changes in basal insulin requirement in preschoolers treated with the insulin pump during the start of their Type 1 Diabetes. All participants were put on the pump within two months of Diabetes onset. All were treated for at least one year and continued to be analyzed during a post-screening. During this study, the data of 58 children were analyzed. "Data was collected every six months with total daily insulin dosage and basal insulin" (Szypowska, 2009). The data produced in this study was beneficial. Daily records were kept and numbers indicated increases or decreases in insulin dosage and basal insulin, as related to insulin needs. Statistics demonstrated the subjects' range of insulin fluctuations. For those with insulin problems, it is important to track daily physical activity along with insulin uptake. According to Szypowska, "exercise has been reported as key to lowering insulin needs" (Szypowska, 2009). The results of Szypowska's study found that basal insulin rose 10% in the third month and did not exceed 30% after twelve months. In the third month, 46% of the older children (3.7 ± 1.4 vs. 2.8 ± 1.4 years; p = 0.01) were without basal insulin. Szypowska's study provided critical information that was beneficial to students with diabetes. Using an insulin pump at an early age is a major advantage for the athlete or student. Becoming familiar with insulin dosages and exercising with the pump is crucial to students who participate in sports. By the time student athletes participate in junior high athletic teams, such as football, basketball, baseball, and softball, taking care of insulin levels will be easier to manage.

Currently, the diabetic insulin pump is not only used by non-athletes, but also by professional athletes in a variety of sports. In the New York Times article written by Bill Finley, Finley discussed how a belt pump helped a professional baseball pitcher with diabetes. "When Detroit Tigers pitcher Jason Johnson starts tonight against the Yankees, he will have to worry about a potent lineup and a game plan to beat the team with the best record in baseball. But Johnson, a tall and slender right-hander, will no doubt have less on his mind than in past appearances at Yankee Stadium. A diabetic, he will no longer have to prick his finger several times a game to check his blood sugar or worry that a lack of insulin is causing him to tire" (Finley, 2004). Dealing with the stress of the game, the last thing Johnson wanted to do was worry about his diabetes. While using the insulin pump, there is a monitor who controls glucose and insulin in one's body. "Many athletes today find benefits in the use of the insulin pump" (Finley, 2004).

According to the article Sports and Diabetes, "Whether you are starting a new sport or you are new to insulin injections or the pump, always discuss sports participation with your health care team first. The excitement of a big competitive event can stimulate the release of stress hormones, which in turn will raise your blood glucose levels" (Zielke, 2007, pages 37-38). Talking with an Athletic Trainer or health care professional before going on the pump is important because the pump may not be for everyone. Some frequently asked questions about the pump include:

Should I take it off for games?

Will I have more low blood sugars?

Do I have to adjust my basal rate?

When participating in contact sports, such as football, basketball, or hockey, it is vital to protect the pump with an extra pad or sport pack (*Figure, 2*). A direct blow to a pump that is not padded produces a high chance that the pump may break. By padding the pump, the pump and athlete may be at a lower risk of further injuries. "If the pump is damaged, most companies will ship another pump to you overnight if still under warranty" (Zielke, 2007, pages 37-38). When pumps are utilized in contact sports many recommend that the athlete has a backup pump. "If you choose to disconnect your pump just before your activity, remember the insulin that's still active in your system is rapid acting and won't last long. Some athletes reconnect between periods and give themselves a supplemental bonus. For example, an athlete keeping his or her pump off for 1 hour who uses 0.8 units of basal insulin an hour may need to replace 0.4 units or 50 percent after the activity. Why replace only half of the dose? Exercise can lower your blood glucose levels, so you might need only half as much" (Zielke, 2007, pages 37-38). Most athletes produce lower blood glucose when exercising, but there are some athletes who produce higher levels of blood glucose. The automatic pump is an excellent decision for those involved in athletics and daily exercise. "It helps manage your glucose levels during your entire workout and provides a sense of security which will enhance your workout" (Zielke, 2007).

2. Athletic Trainers Perspective

Before an athlete participates in a sport, a physical is required for overall health assessment and physician's approval. If the athlete has diabetes, the physician will review symptoms of low blood sugar and facts with the patient. The student's Athletic Trainer will be notified about the situation and will be ready for any emergency. According to Jimenez (2007), a member of the National Athletic Trainers Association, "Athletic Trainers deal with Type One Diabetes constantly" (Jimenez, 2007). "In managing diabetes, the most important goal is to keep blood glucose levels at or as close to normal levels as possible without causing hypoglycemia" (Jimenez, 2007). If insulin levels fluctuate it is important normalize insulin levels immediately. The athlete should check levels before and after meals. "This goal requires the maintenance of a delicate balance among hypoglycemia, euglycemia, and hyperglycemia, which is often more challenging in the athlete due to the demands of physical activity and competition" (Jimenez, 2007). Maintaining blood

sugar levels before and after physical activity would be beneficial. Athletes must constantly test and regulate their blood sugar levels on a daily basis. If insulin levels do not return to normal, a physician must be seen as soon as possible. Some of the items kept on hand during practices and games to treat low blood sugar levels are glucose tablets and PowerAde. Athletic Trainers need to be aware of the symptoms of insulin fluctuation, to prevent further damage to their body. For example: if an athlete passes out while running on a basketball court, they could injure themselves and miss participation for part of the season. Athletic Trainers will be present during games and practices in a college or professional setting and will be aware of diabetic symptoms and blood sugar fluctuations (Jimenez, 2007).

3. Coaches' Perspective

In a high school setting, Athletic Trainers may not always be at practices. When this happens coaches are responsible to be prepared and have a plan of action. Sometimes all the diabetic athlete needs is a rest. It is important for the coach and Athletic Trainer to know how much rest time the diabetic student athletes requires before reentering participation. Allowing student athletes with medical conditions to participate in game or practice too soon may cause further damage and make it difficult to bring insulin levels back to normal. Student athletes should assess levels of blood sugar during timeouts or breaks. This process will facilitate the regulation of glucose. Coaches are required to pass a Prevention & Care of Athletic Injuries course which provides-diabetic information. After participation in the above course the coach will be better prepared to assist the diabetic athlete (Mannie, 2007).

4. Summary

Athletes with diabetes are capable of competing in sports if given the proper medical assistance and supervision. The athlete who consistently manages their insulin levels will increase participation time and reduce needed rest time during games and practices. Personal management of one's insulin takes time. Investing in an automatic insulin pump would be recommended for most diabetics and athletes with diabetes. The insulin pump when used by athletes or non-athletes is a time saver. Student athletes who study and research diabetes will contribute to their knowledge of diabetes and may increase their quality of life.

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Figure 1. Insulin Pump



Figure 2. how the pump is worn/attached



Study on the Cultivation of the Innovational Ability of Practice Teaching in Colleges

Hongxin Li & Mengchun Ding School of Economics and Management Changchun University of Science and Technology Changchun 130022, China E-mail: 609677303@qq.com

Abstract

The practice teaching which can not be replaced by others is very important to cultivate students' innovational ability. As viewed from the cultivation of innovational ability, the practice teaching still has many problems. In various forms of the practice teaching, students' innovational thinking should be cultivated mainly, and the practice teaching system which is propitious to the cultivation of innovational ability should be established.

Keywords: Colleges, Practice teaching, Innovational ability

As an important part of higher education, the practice teaching is propitious to cultivate students' innovational spirit and ability and comprehensively push the quality education. For the problem how to cultivate students' innovational ability in the practice, many colleges lack in deep considerations and systematically scientific measures.

1. The practice is the unique approach to form the innovational ability

The innovational ability is the ability that people innovate in old things and create new things, and it has many characters such as the comprehensive specificity and the structure optimization. The genetic constitution is the physiological base and necessary material premise to from human innovational ability and it potentially decides the type, speed, and level of the future development of individual innovational ability. The environment is the important condition to enhance human innovational ability and it influences the development speed and level of individual innovational ability. The practice is the unique approach to form human innovational ability, and based on certain knowledge accumulation, the innovational ability can be trained and elicited. The practice is also the standard to test the level of innovational ability and the result of innovational activity.

2. Analysis of the phenomena and causes that make against the cultivation of students' innovational ability in the practice teaching of colleges

2.1 The phenomena that make against the cultivation of students' innovational ability in the practice teaching of colleges

2.1.1 Most practice teaching still continues traditional teaching mode

In practice, a complete practice teaching system which can cultivate students' innovational ability is deficient, or there is a system or standard, but the exertion is not complete, or the form of the practice system can not be applied.

2.1.2 Students implements practices passively

In some practical parts, most students passively participate in the practice, and the object, method, and programs of the practice are decided by teachers, and students can only complete the task of practice along the route constituted by teachers, and their creative thinking and imaginations can not be fully exerted.

2.1.3 The topic deviates from practice and students lack for interests

The topics of some practices combining with the practice are too complex to suit for students. Some practices don't connect with the reality, and good practical problems are deficient. And because of limited finance, some practices lack in corresponding practical locations, tools, and measures, and they are simulated, and difficult to combine with the reality, so students lack in interests and only simply deal with them.

2.1.4 Teachers lack in management to students

In some parts of the practice, only a few general directions are decided by teachers, and students have not seriously deal with them, and only find materials from internet. Though the practice reports scraped together by students appear good, but students' innovational ability has not been cultivated well, and time and energies are wasted in fact.

2.1.5 Problems in various practice parts

Taking the social survey as the example, many students copy a report to teachers. In the production practice, the proper enterprises are difficult to be found, so this part of practice becomes formally. In the graduate practice, most colleges let students to find their practice enterprises, and in practice, some students are busy in looking for jobs, and some students have not enough ability to participate in practice, and some students want for graduate education, so the graduate practice often becomes a mere formality.

2.2 Causes that make against the cultivation of students' innovational ability in the practice teaching of colleges

2.2.1 Teachers can not really understand the idea of innovational education, and have not established new modern education concepts

The modern education concept should mainly cultivate students' learning ability, application ability and innovation ability.

2.2.2 The practice teaching has not been an independent training system to cultivate students' comprehensive innovational ability

The teaching system of the practice teaching should include the system of teaching content, the system of teaching management, the system of teaching supervision, and the system of teaching evaluation, but there is still not a set of effective performance assessment index to evaluate the cultivation of the innovational ability.

2.2.3 The practice teaching has not been put on the same important position with the theoretical teaching

Though the practice teaching is emphasized orally, but in practice, it is often becomes a mere formality. One prominent problem is the sufficient capital investment. To obtain good effect of practice teaching, students should be divided into many groups, and several teachers should instruct them and seriously correct the practice reports, that needs teachers pay more labors, but at present, most colleges only offer fewer hours than the theoretical courses. In addition, the practice teaching often needs the locations outside the university, and it needs traffic, residents, and even practice fees, but the outlay of the practice teaching often has too many problems to deal with, that seriously blocks teachers' enthusiasm to instruct the practice.

2.2.4 College students advocate consciousness of practice more and participate in behaviors of practice less

On the one hand, students want to enhance their innovational ability, and they have innovational consciousness and active spirit status, but the limitation of the conditions about the creative practice in university and the situation that students often have not fully utilize the conditions of school restrain the future development of students' innovational ability. On the other hand, students' enthusiasms often can not be implemented, and their active functions have not been exerted enough. For example, though the innovational passion can generate the inspiration of innovation, but the target of innovation is not specific, and the durative drive is deficient, so the inspiration will disappear soon.

2.2.5 Many students copy reports seriously

Nowadays, convenient searching method of materials and quick communication mode make students to obtain materials quickly, and they often modified little and hand in the practice report, and even some students copy the practice reports from other universities and senior students' reports, and teachers usually can not find these situations.

3. Advices to cultivate students' cultivation ability in practice teaching for colleges

3.1 Cultivate innovational thinking in practice

3.1.1 Design good questions and mainly cultivate students' consciousness of question

Question is the start of thinking, and the start of innovation. In the practice teaching, the smart establishment of question situation is the key part. In the loose atmosphere intentionally created, students can ask questions freely. Teachers should publicly appraise students' curiosity and exploratory behaviors, and allow them look for answers according to their routes and approaches, and teachers should never restrain them by rules and regulations, and often encourage them to show their own individual opinions. At the same time, question is the approach of thinking, and the essential to settle question is the process to continually propose problems. When designing questions in practice teaching, the situation, adaptability, validity, topic, interest, and volatilization of questions should be emphasized.

3.1.2 Cultivation of innovational thinking

Innovational thinking develops based on general thinking, and it is the result of postnatal training and cultivation. According to general rule of the cultivation of innovational thinking, following aspects should be emphasized in practice teaching, i.e. spreading the wings of "imagining" and looking for practice topics and questions, looking for multiple answers and cultivating the divergent thinking and developing the intuition thinking. Young people often feel sensitively, and have active imagination, and many new ideas and opinions will appear suddenly, and they should capture innovational thinking timely.

3.2 Cultivate students' innovational ability in various practice teaching forms

Various parts of the practice should be developed according to the characters of various specialties and the requirements of the society for talents.

3.2.1 Organize students to implement social investigation and research

In the practice teaching, the persons who have innovational ability should be mainly cultivated, and the group discussion should be the necessary part of the organization form. By the instruction of teachers, students should go to counties, enterprises, and streets to survey for special topics. Concretely, 3 to 5 students can compose one group, and members in the group can cooperate and divide works, and analyze and research the materials based on relative theories and deep survey, and find out rules. The survey reports require systematic analysis of the materials, and practice researches combining knowledge, and after the survey, several classroom discussions can be carried out. In the classroom discussion that students voluntarily enter for, after teacher checks up the topics of the handed reports and the quality of the contents, students can show their own research results and opinions. After other students listen to the reports, they can ask questions according to the contents and the student on the platform should answer them. The classroom discussion may be favored by students, and they will actively participate in the discussion and show their own opinions.

3.2.2 Part of course practice

The part of course practice teaching is a teaching part to cultivate students' practice ability and innovation ability in various specialties, and by the course practice, students can grasp the theoretical knowledge and validate the theory, so their learning interests can be inspired, and their strict science style can be cultivated, which require teachers design good practice content and topic combining the teaching contents, and the colleges should establish good teaching center of course practice and good teaching software. The economic management experiment center of Shanghai University of Science and Technology is the good example, and it can enhance students' innovational practice ability, optimize the experiment teaching system, and emphasize the establishment of experiment teaching.

3.2.3 Part of skill training

College students' practice skill is the basic ability to survive successfully in the society, and it includes the ability of work and the technology of work. By the skill training, students can learn basic using method of tools, and grasp some basic operation criterion and skills, and exercise the innovational ability. At present, many colleges have adopted certain measures to make graduates grasp certain skills and acquire corresponding technical certificates, and establish good base for students' employments.

3.2.4 Research of the comprehensive innovational practice teaching development

The development research of the comprehensive innovational practice teaching is a systematic project, and it should be implemented according to the characters of the specialty and the practice of the college. For example, based on the existing practice teaching equipments, the specialty of the engineering can integrate original practice equipments, and introduce the computer technology and new intelligent technology to optimize the comprehensive innovational practice teaching system. In addition, according to the basic process of the development and design of electric and mechanic products, the mechanical and electrical major can design the teaching environment of engineering application, and students can complete the series mechanic engineering experiment and the comprehensive innovational experiment content in this teaching environment, and adopt the computer simulation to design and realize the project of innovational design, which can cultivate students' innovational ability well.

3.3 Establish the practice teaching system and cultivate the innovation ability

3.3.1 Reform the contents of practice teaching and strengthen the cultivation of innovational ability

At present, many stable bases of practice teaching are unworthy of their name, and many specialties can not be implemented. Students should be encouraged to establish their own simple businesses, for example, the students graduated from the marketing specialty can engage in sale promotion or sell vegetables, and the students graduated from the mechanism specialty can fix machines even engage in obligation services. By this way, students can easily find the practice enterprises which would want to accept students, and the effect of the practice will certainly good. By the measures such as "the cultivation of practice teaching innovation ability" and "the game of business plan", students' scientific and technical consciousness and innovational ability can be strengthened. Junior students can develop the innovational activities of science and technology based on relative laboratory, and senior students can participate in the research activities of science and technology group as soon as possible to cultivate their initial innovational consciousness and ability in various comprehensive design experiments.

3.3.2 Establish the effective standards that make for the supervision and evaluation of practice teaching to cultivate students' innovational ability

The existing teaching supervision and evaluation system of the practice teaching lacks in microcosmic and concrete evaluation standards, much more the evaluation standards from the angle of innovational ability. Therefore, the microcosmic effective standards of main practice forms in colleges should be established as soon as quickly, not only some macro standards such as the practice time, the amount of production-learning-research base, the complete practice documents, and practice reports.

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International Education Studies



Asian Megatrends and Management Education of Overseas Chinese

Jokull Johannesson (Corresponding author) University of Northampton Park Campus Boughton Green Road, Northampton, NN2 7AL UK Tel: 44-16-0473-2088 E-mail: jokull.johannesson@northampton.ac.uk

Iryna Palona

University of Liverpool Biosciences Building

Crown Street Liverpool L69 7ZB UK

Abstract

Asian megatrends are impacting the development of management education of ethnic groups like the overseas Chinese and universities need to change accordingly. This article identifies six Asian megatrends and their impact on the management education of overseas Chinese. The megatrends are: the emergence of women in politics and business; a shift in industrial strategy towards high technology; urbanization; the rise of consumerism; migration of overseas Chinese to China, and overseas Chinese investment in China. The implications of these trends on universities are discussed and recommendations are made.

Keywords: Megatrends, Overseas Chinese, Change, Management education

1. Introduction

Globalization is a fact of life for universities and they are compelled to adapt and response to this change regardless of their commitment or ability to become global institutions. Even if universities are dedicated to developing global competitiveness the institutions may be prevented from achieving this goal if they focus their competitive responses to the present business environment instead of the trends leading the development of the higher education market place because the long time it takes for universities to develop the necessary organizational capability to response to the trends that impact the world (Kumar, 2001; Meyer, 2002). Although there is a similarity in these megatrends there are some regional differences that make necessary the identification of specific regional trends and their impact on universities. A generally accepted axiom among strategy theorists is that to maintain their competitiveness in a globalizing world organizations must identify trends in the business environment, respond with appropriate strategy and, develop the appropriate organization capability (Ansoff, 1984). Frequently, the key emphasis is on the concept of a "fit" between the organization's strategy, capability and, the future business environment (Miles and Snow, 1978; Hamel and Prahalad, 1994). Consequently universities need to identify likely trends in their business environment in order to be able to access their impact and make the necessary strategy and capability adjustments (Grummer, 1998).

The past two decades have been a period of fundamental change in the global business and higher education (Allen and Fitfield, 1999). The old Soviet Union is gone, the European Union was created and is growing, People's Republic of China (PRC) opened up to foreign ideologies and investment, and South East Asia became an economic power block followed by the 1998 financial crisis in the region, and the world's 2008 economic crisis (Porter, 1998; Fidrmuc, and Korhonen, 2009), these fundamental changes had significant impact on the management education in universities and education administrators struggled to catch up with the changes (Hall & White, 1997).

Moreover the world's economic center has been shifting toward East Asia and lately towards PRC which has experienced colossal economic growth in the past two decades which was partially fueled by foreign- investment and expertise which in turn has been to a great extent provided by overseas Chinese nationals. Consequently universities need to identify the unique education needs of the overseas Chinese students and provide management training program optimizing their effectiveness in this new dynamic market place (Butterfield, 2003). As universities are struggling with identifying the salient trends shaping the higher education needs of overseas Chinese students seeking management education at universities outside People's Republic of China, this article discusses some of the salient trends in Asia and their impact on the management education of overseas Chinese. The article is organized as follows: First the overseas Chinese are established as an identifiable subgroup in society with special education needs. Second the article identifies major trends affecting the management education of overseas Chinese and discusses what management programs universities need of offer to prepare the overseas Chinese students. Finally, conclusions are drawn and recommendations are made. The next section defines the overseas Chinese as sub-group and provides reasons for their circumstances.

2. The overseas Chinese are an identifiable sub-group

The scope of this study is the impact salient Asian megatrends have on the management education of overseas Chinese. Consequently one has to define the overseas Chinese and if the characteristics of this group or market segment is so significantly different from the general population that they merit to be studied separately. Williams (1960) gives one of the earlier definitions of the concept of Overseas Chinese, and Pan (1999) presents an interesting framework and analysis of the definition of Overseas Chinese that has been adopted by the World Confederation of Institutes and Libraries for Overseas Chinese Studies (2004) which defines the overseas Chinese as people of Chinese decent that immigrated from the China around or after the Maoist take over in 1949. Blackwell, Miniard, and Engel (2001) define a market segment as: "a group of consumers with similar needs and behavior that differ from those of the entire mass market". The Overseas Chinese can be considered such an identifiable subgroup or market segment of the Chinese society because of their location, culture, language ability, and political experience (Hofstede, Jan-Benedict, and Stennkamp, 1999). In addition to being an identifiable market segment, John Naisbitt (1997) considers the overseas Chinese to be the economic engine of the development of the South-East Asian region, he considers the overseas Chinese are the largest investor group in People's Republic of China, Thailand, Vietnam, Malaysia, Singapore, and the Philippines.

2.1 Location

According to Overseas Chinese Confederation (2004) the population of overseas Chinese is 34,072,632 and they are distributed in 141 countries. The overseas Chinese are based in 34 Asian countries, 34 African countries, 33 American countries, 26 European countries, and 14 countries in the Oceania.

2.2 Culture

A culture is a collection of values, believes, attitudes towards change, propensity towards risk, time- and action perspectives, goals of behavior, and a shared model of the world (Ansoff, 1984; Duncan, 1989). A subculture develops when certain members of a society experience problems, challenges, opportunities, and threats that are different than that of the main population (Lawrence and Lorsch, 1969; Gardner, 1999). Although the overseas Chinese are culturally persistent they have adapted to different climates, cultures, political systems, race, and economic opportunities in the countries they settled in (Jones, 1983). Consequently, the overseas Chinese culture is likely to be a mixture of cultures, and the overseas Chinese are used to cultural diversity from living in multicultural societies and this is a contrast to the relatively mono-cultural society of Chinese living in the PRC. Molohon, Paton, and Lambert (1979) recognized the existence of the overseas Chinese as a subculture of the Chinese culture and as a group having distinct characteristics separating them from the mainstream Chinese population and the population of the originating country. Munk (2003) concurred in a paper on the sub-ethnicity of the overseas Chinese where he concluded that Vietnamese overseas Chinese immigrants were significantly different in their culture than other overseas Chinese in Canada.

2.3 Language ability

The distribution and number of overseas Chinese in the 141 different countries makes them a minority group. Therefore, the overseas Chinese must have learned the local languages to be able to conduct their affairs and make a living in these countries. The overseas Chinese are bi-lingual or in some cases multi-lingual and this language ability is a contrast to the main population of Chinese as demonstrated by Pan (1999) when he concluded that this multilingual ability was a strategic advantage to overseas Chinese business people immigrating from Vietnam to Canada as the multilingual ability allowed the overseas Chinese to communicate more effectively with suppliers, customers, and the existing Chinese community in Canada. A review of the Encyclopedia of the Chinese Overseas revels the multilingual ability of overseas Chinese students enrolling at universities the South East Asia is very extensive and includes most dialects of Chinese, major international languages, and most languages spoken in South East Asia (Pan, 1999). Kuo (2001) is a valuable a reference source of comprehensive studies of the multilingual ability of overseas Chinese.

2.4 Political Experience

While majority of Chinese have lived under a communist political system since 1949, the overseas Chinese have experienced a variety of political systems ranging from democracies to dictatorships, capitalism to socialism, and everything in between. The overseas Chinese involvement in politics in the countries they migrated to has been a function of their perception of their political rights and economic privileges they enjoyed in the adopted homes. Political experience and involvement was seen as necessary in order to protect the economic interests of the overseas Chinese this was particularly true when former colonies such as Malaysia, Singapore, Vietnam, and Indonesia gained independence in the 1950's and the 1960's. However in countries, such as the United States and Canada, where the perception of political threat to the economic interests of the overseas Chinese never existed the political involvement was minimal (Kim, 1999).

In this section we have defined the overseas Chinese as a separate identifiable sub-group and discussed their unique

situation rising from different location, culture, language ability and political experience. In the next section we will discuss Asian megatrends affecting the management education needs of the overseas Chinese.

3. Asian megatrends and the management education of overseas Chinese

Naisbitt (1997) identified eight megatrends that are likely to severely impact the development of the Asian continent. This article focuses the discussion on four of these megatrends and, the influences they have on the management education of overseas Chinese. The megatrends are: a social transformation from male dominance to the emergence of women in all sectors of government and industry; a shift from labor intensive manufacturing to high technology industries; a migration from farms to super-cities; and a shift in economic strategy from export-led growth to consumer driven economic prosperity. In addition to the Naisbitt megatrends, the article discusses the new trend of overseas Chinese returning to the People's Republic of China to invest and work. The following section examines these trends in more detail.

3.1 From male dominance to emergence of women

The decline in male dominance in all sectors of society has been a global trend for the last several decades. Asia has in no way escaped this trend as evident by the emergence of women in the political arena in many Asian and Pacific countries. Gloria Macapagal-Arroyo, was elected as the President of the Philippines, Megawati Sukarnoputri, as the President of Indonesia, Khaleda Zia, as the Prime Minister of Bangladesh, Helen Clark, as the Prime Minister of New Zealand, and Chandrika Kumaratunga as the President of Sri Lanka to name a few. Even the last bazillions of male dominance in Islamic countries are falling as women have achieved the right to vote in conservative Kuwait, Afghanistan, and Iraq (CAPWP, 2003).

The male dominance of the business world in Asia is challenged by the emergence of women into executive ranks in the region. According to William Mellor (2001: 54) women "...may be few in number, but women as shaking up the way business is done in Asia." The examples are abundant. Christine Tsung took on the leadership of China Airlines, and later became the Minister of Economics in R.O.C. In China, Han Ying, is the CFO of AsiaInfo. In South Korea Kim Sung Joo, is the successful entrepreneur of the import retailer Sung Joo International. In Hong Kong, Elsa Pau has been the head of Allen Perkins Group since 1996. Naomi Yasuda Fisher has risen to be one of Japan's leading financial executive in her role as the head of infrastructure finance at Fuji Bank.

The impact this trend has on the management education of overseas Chinese students needs to be investigated as well as the barriers constraining the responsiveness of universities to this trend. A plausible implication of this trend is a need for reforms of the higher educational systems in the relevant countries. Universities will be required to increase the opportunities for learning and education for women at all levels in society by offering specialized program in gender-related issues and women studies with special emphasis on role of women from overseas Chinese communities. Universities need to establish specialized training programs for female educators and the universities need to implement sensitization programs for male lecturers and staff.

3.2 From labor intensive to high technology

The transformation of the societies in East Asia from a focus on labor intensive agriculture and manufacturing industries to high tech is as dramatic as it was in Europe and United States in the mid and late 20th century. The *People's Daily* (2004: b) reports that Niu Wenyuan, the chief scientist of the Academy of Science study group believes that the economy of the People's Republic of China will quadruple in size by 2020 this tremendous GDP growth is to come from a shift in economic strategy from labor intensive dirty industries to environmentally friendly science and technology industries contributing 65% to the national economy. For an example Taiwan's industrial policy was shifted from heavy and labor intensive industries such as steel and textiles to a focus on the development of high technology electronics for many years and most electronic firms were contented with making 80% of the world's motherboards and 75% of the world's notebook computers often designed by other companies. Moreover recently Taiwan's electronic firms are shifting their focus from making electronics for other firms to designing their own products and marketing them under brand names. Asustek intends to use its award-winning designers to establish a world brand in notebook computers are designed and produced in Taiwan and sold in under the Acer brand name. Other companies in Taiwan are following this trend of designing and marketing branded electronics and the government is encouraging this as the competitive advantage of the country will depend on high value added innovation and design (Dean, 2004).

The transformation of industries in East Asia from labor intensive manufacturing to high technology is both a tremendous opportunity and a challenge for universities. Enormous market for management education has opened up with millions of students needing a new type of management education focusing on entrepreneurship, strategic management, and global consumer marketing. The challenges for the universities are that many of their management programs are obsolete as they have been focusing on the operation management and will required the universities to consciously align their education offerings to the demand for employees able to play new roles such as Internet CEOs,

chief technology officers, and vice presidents of e-commerce and education (Mobley, 2001).

3.3 From farms to super-cities

Most developed country has gone through a social transformation from rural based economy to an urban one. The East Asian countries are going through the same social transformation where workers migrate from the country side to the industrialized cities in look for work and improved life for themselves and their families. The overseas Chinese are impacted by this trend more than others as they tend to be located in cities in the region, are established in their own business, or work in business organizations. For an example the People's Republic of China is experiencing the largest migration in human history. Already, 114 million workers have left the drudgery of rural life and migrated to the industrial cities in the south of China and they were followed by millions of family members and this flood of people was only the beginning of a larger migration to the cities as the number of migrants is expected to rise to 300 million by 2020. Eventually the total migration may reach 800 million people by some estimates (Yardley, 2004). Consequently, the economic gravity of the People's Republic of China is expected to shift from farms to three super-city groups based in the Pearl River Delta, Yangtze River Delta, and the Bohai Bay area. In 2002/2003, the super-cities in these areas accounted for approximately 38 percent of the People's Republic of China's Gross Domestic Product and majority of the country's exports. According to Niu Wenyan, counselor to the State Council of the People's Republic of China, the future of China depends on the successful development of these three super-city groups. He predicts that in the year 2020, two thirds of the Gross Domestic Product of the People's Republic of China will come from the three super-cities (People's Daily, 2004a). As can be expected this migration has resulted in tremendous housing boom where builders have not been able to keep up with demand resulting in inflation of house prices to the tune of 30% in Shanghai and 80% in Beijing (ChinaView, 2009: 12/27a).

The migration to the super-cities has great impact on the management education needs of the overseas Chinese as a cadre of new professionals are needed to manage this urbanization which in turn results in an opportunity for universities to provide programs in a variety of management fields such as: construction management, urban planning, primary and secondary school administration, utilities management, transport system management, and logistics and distribution management.

3.4 From export-lead to consumer driven economic growth

Companies in the East Asian region are changing their business focus from exporting goods to consumers at home. The old economic model of manufacturing-to-export is becoming obsolete and replaced by domestic consumption based economic growth policy. Nowhere is this more apparent than in the PRC's response to the 2008 economic crisis. The Chinese government's economic stimulus package focused on increased domestic consumption and resulted in 8.9% GDP growth in 2009 (*ChinaView*, 2009:12/27).

The huge population of the region has growing disposable income and the Confucian frugality is giving way to materialistic consumption of anything from fashionable clothing to electronics, and vacations abroad. The China Brand Association's estimates there are 170 million consumers of top-tier brands in the PRC and the international fashion labels such as Gucci, Chanel, and Tiffany are in great demand. Jewelry, Rolex watches, the latest mobile phones, and electronic gadgets, and luxury cars are essential status statements (Jiaojiao, 2009). The strong Yuan encourages Chinese consumers to traveling abroad to satisfy their appetite for luxury goods where the Chinese travelers spending per person is twice the amount of money the previous record holders the Japanese.

The high GDP growth in the region for the last two decades has lead to a significant increase in purchasing power of the general population. The typical East Asian cuisine is now based on imported meat, fish, grains, vegetables, and fruits from the United States, Europe, Australia, South America, and others. The region is a net importer of most services. Insurance, education, entertainment, teachers, and consulting services are in demand. A clear sample is mainland China which recruited 480,000 foreign professional experts for its economy in 2008. The Chinese economic stimulus program of 2008 is similar to the response of many East Asian governments to the Asian financial crises in 1997 which prompted many governments in the region to simulate domestic consumption to lessen the economic dependence on exports. Consequently the region has suffered less from the financial crisis of 2008 and the economic efforts were successful in boosting consumer spending across the region (Barta,2004; *ChinaView*, 2009: 12/27).

The world's biggest companies have realized the huge market potential of this region. Disney has set up shop in Tokyo and Hong Kong, and Mickey Mouse will soon walk the streets of Shanghai (Bryan, 2002; Brooks, 2009). As early as 2004 the Reuters news agency reports that the world's carmakers had taken notice of the consumption boom in Asia. The Volkswagen Group experienced phenomenal growth in car sales on mainland China. According to Dr. Helhofer, the chairman of Volkswagen's Asia-Pacific region, two consecutive years of 40% growth had made the Chinese market "...Volkswagen's second largest individual market after Germany." Volkswagen sold 694,000 vehicles made in its two Chinese joint venture factories in 2003. Dr. Helhofer, believes that "Current market developments indicate that sales figure will double in the next five years, giving [Volkswagen] sales of one million vehicles in 2007." The company was

planning to introduce new models in the market to achieve this number of vehicle sales (Reuters, 2004). By 2007, Volkswagen was offering a full range of locally manufactured versions of its global brands of Volkswagens, Audi and Skoda vehicles and in 2009 China replaced the United States as the world's largest car market with 40% growth and 7.3 million vehicles sold in 2009 (*ChinaView*, 2009: 12/29).

The Chinese government's one child policy of the 1980's crated a generation of children able to call upon the financial support of six people to fuel their appetite for luxury goods. Moreover the financial security of inheritance from parents and two pairs of grandparents relieves the person of worries of saving for economic security. Hence, the new generation of Chinese urban professional (CUP) isn't only spending the fruits of striking economic growth over the last two decades but, also the accumulated wealth of half a dozen people. The Cuppy's (CUP) spending power is unparallel and supersedes the affluence of the Germans and Japanese children.

The Chinese consumers are not alone in drawing the attention of global businesses. In Korea retail spending is at all time high due to increased consumer credit, high level of savings, and untapped consumer credit lines. The consumer boom is fueling profits in department stores, discount retailers, television shopping channels, and cosmetic suppliers. Other countries in East Asia are not left behind in the consumer boom. In Thailand, education businesses including schools and book publishers are cashing in on the consumer boom. In Taiwan and Malaysia consumer are improving their homes and sending furniture and home improvement stores to the bank smiling (Holland, 2002).

The change in economic focus from export production to domestic consumption and the economic wealth created in the East Asian region creates many opportunities for universities educating Chinese students. The consequences for universities are a need to change the focus of management education from programs in export and international trade management to a focus on developing management skills with a special emphasize on consumer finance, domestic marketing, and consumer behavior. The growing luxury goods market creates opportunities to provide management education in areas such as: brand management, business models, product strategy, creative product design, and fashion culture and marketing.

3.5 From overseas to China

Since the opening up of the People's Republic of China's economy in the early 1980s, a salient trend of overseas Chinese returning to China to work or invest has been developing. The number of foreign experts working in China shows a continuous trend upward. In 2003, The *People's Daily* (2003) reported that the overseas Chinese are flocking back to China to work as human resource experts in China predict that China needs approximately 240,000 foreign experts every year and, that most prominent source of this expertise is provided by overseas Chinese returning to China and 190,000 of the foreign experts were overseas Chinese who came from Hong Kong, Macau, and Taiwan. By 2008 the number of foreign experts had risen to 480,000 (SAFEA, 2009). The expertise needed to assist China in its economic and technical development covers a variety of occupations including: management, international marketing, foreign language experts, and researchers and training personnel in these professions.

The Chinese government established The China Association for International Exchange of Personnel to facilitate the flow of professional managerial and technical talent from South Asian countries, the United Sates, Japan, Europe, and Canada. Furthermore the Chinese government sponsored forums attended by the by representatives of the Chinese government, United Nations, CEOs of multinational enterprises, and academic experts to discuss the salient trends in the human resource requirements of the People's Republic of China in the 21st century. The PRC government's willingness to accept foreign advisers was demonstrated in a February 2009 conference which sought the expertise of people from around the world to help China in dealing with the aftermath of the global financial crisis (Zhang, 2009).

The PRC's foreign expertise requirement and the fact that overseas Chinese are the foreign experts of choice in China create a demand for specialized education from universities educating overseas Chinese returning to PRC to work. The new education programs need to emphasize PRC culture, legal system, language, and politics as these may be significantly different in PRC from the overseas Chinese student's home country.

3.6 Overseas Chinese investment in China

According to ChinaFDI Statistics (2004) the overseas Chinese are also flocking back to China to invest in business enterprises. In 2002, the total number of overseas Chinese owned enterprises in China numbered 424,196 and these enterprises had invested a total of US\$828.06 billion. The overseas Chinese represented an overwhelming majority of this foreign direct investment in China having ownership of 65.73 percent of the enterprises and 61.04 percent of the total foreign direct investment. In 2008 this trend continues and of the \$92 billion invested \$47 billion come from overseas Chinese with Hong Kong alone investing \$41 billion dwarfing the United States FDI of \$1.9 billion (USCBC, 2009).

This trend implies that universities need to offer the overseas Chinese special programs on financial management, investing, management of wholly owned foreign enterprises, strategic alliances, and joint venture management in the People's Republic of China.

In this section we have identified the emergence of women in East Asia, shift in industry focus from labor intensive to high technology, migration from farms to super-cities, change in economic focus from export-lead to consumer driven economic growth, return of overseas Chinese to China, and investment of the overseas Chinese in China and, we have discussed the ramification of these trends on the management education needs of the overseas Chinese. In the next section we draw conclusions and make recommendation on the actions universities need to implement to meet the changing education needs of the overseas Chinese students.

4. Conclusion and recommendations

The overseas Chinese may be the embodiment of globalization as they are doing business in very diverse markets, they are highly mobile and not restricted by national boundaries, often migrating and moving investments back and forth from PRC and other countries as the opportunities presents themselves. The overseas Chinese are formidable economic force in Asia and certainly a separate group embedding the principles of globalization as they do business and work in diverse and challenging business environments. This creates the need for specialized management education and an opportunity for universities to modify their management programs to meet the needs of the overseas Chinese. In order to capitalized on this opportunity universities need to identify the special management education needs of the overseas Chinese and consider how culture and power creates a barrier to change in their organizations.

In universities there are many skeptics but globalization has made changes inevitable for all organizations. Sooner or later universities will have to respond to changing business environment and reconfigure or they are out of business. As globalization has made change continuous, universities need to embrace an organization culture and political power system that seeks out changes and facilitates them and universities need to adopt Jack Welch's philosophy and believe that they "... want to be a company that is constantly renewing itself, shedding the past, adapting to change." (Cited in Harris, Schiller, Mitchell, & Power, 1986). The most successful universities are going to be the organizations that create change by initiating new programs, pedagogical approaches, delivery strategies, and degrees as suggested by Carlsson & Fridh (2002).

Although the change leader's task is not an easy one as traditions and old habits are deeply rooted and various power centers are deeply entranced in most universities, the leadership of universities must take the universities on a road to modernization. The first step is to abandon obsolete and hopeless programs and activities (Drucker, 1993; Godin, 2002). For example, the Uganda Management Institute decided in 2002 to abandon the secretarial program at the Institute as the program was based on teaching shorthand and typing on obsolete manual typewriters. The program had been important when the Institute was established in the 1960s but totally inappropriate for a university in the 21st century. The second step is to seek continuous improvement in existing and viable programs and activities. The third step is to exploit successes and channel resources toward them. The explosive growth in the retail financial services and the information technology sectors of most economies in the last part of the 20th century motivated many universities to establish MBA programs and computer science departments. Likewise the 21st brings new opportunities for universities and they need to respond accordingly with programs that are tailored towards these new education needs. The fourth step is for universities need to establish a separate budget for innovation and change in management programs and this budget should be 10-20% of all expenditures (Drucker, 1999). The fifth step is to deal with and minimize the influence of the power centers resisting change (Boyett & Boyett, 1998). The sixth step is to institutionalize the new culture and political power structure (Drucker 1999, Ansoff, 1984).

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Market Forces in Higher Education---Chinese and British Experience between Mid-1980s and Mid-1990s

Xiaonan Zhao

Foreign Languages Department China University of Petroleum (Beijing) 18 Fuxue Road, Changping District, Beijing 102249, China E-mail: nancy zxn@hotmail.com

Abstract

This paper tries to examine how higher education in China and Britain has been affected by market forces between the mid-1980s and the mid-1990s, from three major issues. Comparing the experiences of both places, the paper argues that unlike the case of British counterpart, where marketisation of education has shifted to a corporate management approach, the Chinese experience can be argued as being the government's attempt to use market forces and new initiatives from the non-state sectors, rather then an ideological shift to managerialism and its practices.

Keywords: Higher education, Market forces, China, Britain

Strong market forces have significantly affected educational development in many countries. It has not only affected British education, but has also shaped educational policies in less developed countries, like China. The principle goal of this paper is to examine how higher education in Britain and China has been affected by strong market forces between the mid-1980s and the mid-1990s, with particular reference to the strategies which higher education institutions have employed to recover costs in education.

For China, it seems that the central government has adopted a policy of decentralisation in getting local governments to use multiple channels of resources and other methods to provide for their own educational services. Britain, however, has adopted quite a different approach by employing the principle of managerialism in order to enhance its competitiveness in providing quality education to meet the increasing market demands. Hence, the present study is to compare and contrast the educational reforms and coping strategies that have been adopted by the socialist China, on the one hand, and the capitalist Britain, on the other hand, in order to face this new challenge of marketisation.

1. Theoretical background

What do we mean by a "market"? In the most primitive sense it is a place, or a gathering, or an opportunity for buying and selling. In general, it is a social institution for the systematic exchange of commodities for currencies between vendors and customers (Ziman, 1991). Market forces are simply those factors which make markets work. According to Howarth (1991), a market – in higher education or elsewhere – has two essential characteristics: it allows individuals to register choices and wants – to transmit market signals – and it gives others an incentive to respond to such signals and to satisfy the wants expressed.

Levin (2001, p.241) illustrates the behaviours of market forces: institutions align themselves close to the private sector, and they compete with other institutions and organisations for revenues; they form associations with private business and industry; they solicit private donations of money, goods and services, which they acknowledge through publicity and tax benefits.

Recent decades have brought considerable questioning of the state's ability to manage a monopoly of public services. Realizing the importance of productivity, performance and control, governments have begun to engage themselves in transforming the way that services are managed (Flynn, 1993). The shift from the traditional public administration paradigm to the new public management marks a move towards a more transparent and accountable public sector. Central to the notion of "new public management" is managerialism and marketisation of the public service. The aim of managerialism, according to Pollitt (1990) is to introduce a more effective control of work practices. The marketisation of public services, that is, the development of market mechanisms and the adoption of market criteria within the public sector, is a major feature of the new public management (Hood, 1991).

The strong market forces have made higher education institutions re-orient themselves to be more sensitive to market needs. They have significantly affected educational development in many countries. As resources and funds of individual universities are determined by their research output and the employability of their students, higher education institutions have become more "cost-consciousness". In Britain, higher educational institutions have tried to give more choices and options to students, and as well, adopted market principles and introduced "competition" to the educational sphere. "Quality" has become a key word in the public debate about higher education. In order to assure "quality

control" in education, institutional auditing has emerged in Britain (Barnett, 1992). Even though the assessment of teaching and research is justified by the quest for quality, efficiency and effectiveness, its undertaking has undoubtedly brought about financial consequences.

Strong market forces have not only affected British education, but have also shaped educational policies in less developed countries. Evidence in the countries in East Asia and the Pacific region over the last decade or so, have been an educational reform agenda around such notions of "excellence", "enhanced international competitiveness", "quality", and the like (Zhou & Cheng, 1997). Being dramatically influenced by strong market forces and the ideas of "corporate managerialism", the running of education has focused on "results and efficiency and effectiveness, decentralized management environments, flexibility to explore alternatives to public provision of services, establishment of productivity targets and a competitive environment between public sector organizations, along with the strengthening of strategic capacities at the centre of organization" (Taylor et al. 1997, p.82). In short, the impact of managerialism implies a less state directed approach being adopted while market ideologies and practices are becoming more popular in the running of the public sector.

In such a wider policy context, let's examine whether and how higher education in China and Britain has been affected by market forces. The following discussion is confined to three major issues: user charges, cost recovery and the introduction of "competition" in higher education.

2. The Marketisation Experience in China

Policy and Reform between the mid-1980s and the mid-1990s

Chinese economic system used to be very highly centralized. To adapt to that, the former higher education system was also centralized, with education provided by the central and local government respectively and directly under their administration. Along with the transmit from highly centralized planning economy to a relatively decentralized, market-oriented economy, profound changes have also been taking place in higher education. The government has carried out a wide range of policies since 1985 which shows that China has been moving in the direction of "decentralisation" and "marketisation".

In 1985, Chinese Communist Party (CCP) issued a "Decision" on educational reform which acknowledged that over-centralisation and stringent rules had hindered the initiative and enthusiasm of local educational institutions and decided to devolve responsibilities and power to lower levels of administration. This decentralisation policy in educational realm is to allow local government, local communities, individuals and even other non-state actors to create more educational opportunities (Hayhoe, 1989). In 1993, the CCP emphasized its support for the decentralisation and diversification of educational services which stressed its policy change from direct control to managing schools through legislation, funding, planing, advice or policies and other necessary means. By 1995, the Education Law had further revitalised local community and informal sector support to education. Thus, decentralisation of management and financing was further stressed.

Coinciding with this is to empower all educational institutions to conduct their affairs in accordance with the ordinances and rules. In return, more autonomy is granted for them to decide matters about student enrolment, issue of academic credentials and recruitment of staff members (Mok, 1999). Concepts like "efficiency", "effectiveness" and "competition" have been introduced in the management and governance of the educational sector, while the demand and supply of the labour market have begun to play a more important role than the former manpower planning approach.

A second wave of reform started in the late1980s and was formalised in 1993. This was the abandon of job assignment system for graduates and the adoption of fee-paying schemes for university students (Cheng,1994; Pepper,1990). Both measures could undermine the very foundations of a planned economy. The job assignment system was the destined result of strict manpower planning, according to national needs. The abolition of this system mirrors the growing significance of the market force in matching employers with employees. The fee-paying scheme breaks away substantially from a system of heavy state subsidy and reflects a general shift from an ideology which favours the proletariat.

It is under such policy contexts that China's education has been undergoing the process of marketisation. The areas where marketisation has occurred are many and various, but three features are obvious: the adoption of a user-charge principle, the diversified educational financing and the introduction of internal competition.

2.1 The adoption of a user-charge principle

Prior to the 1980s, Chinese higher education was free of charge, for the state bore almost all the expenditures of running a higher education institution. But after the endorsement of a socialist market economy in the CCP's Fourteenth Congress, the State Education Commission officially approved institutions of higher education admitting up to 25% of students in the "commissioned training" or "fee-paying" categories in 1992. In 1993, 30 higher learning institutions were selected for a pilot study for a scheme known as "merging the rails", whereby students were admitted either

because of public examination scores or because they were willing and able to pay a fee though their scores were lower than what was required. In 1994, more institutions entered the scheme and the fee-charging principle was thus legitimatized.

The most important underlying factor behind the rising number of fee-paying students is perhaps the government's determination to substitute a more diversified funding structure for the old monolithic one which has shown an increasing inability to cope with the expansion of higher education. China has long faced the contradiction between, on the one hand, insufficient financial resources and, on the other hand, an enormous size of the applicant pool for higher education institutions and a severe shortage of well-educated manpower. The contradiction has become more acute since 1978, intensified by rapid economic growth which requires more scientific and technological personnel, and by the rising aspirations of Chinese youth which stem partly from the growing size of the school-age cohort and partly from an upgrading of the overall educational level (Yin & White, 1994).

From 1997 onwards, all students who want to enroll in higher education have to pay tuition fees. Scholarships and other types of financial support are allocated based on academic distinction and financial assistance funds are allocated to the students from poor family.

2.2 .The diversification of financing

A general trend of diversified educational financing suggests that China's education has become more "marketised". In the higher education sector, the state financial provision has gradually reduced, while grants and funds generated from other non-state sectors have become increasingly important (Min, 1994). As early as 1980, a circular issued jointly by the State Education Commission, the Ministry of Finance and the State Planning Commission declared and aimed to expand the potential capacity of Higher Education Institutions and create new sources of funding, to strengthen the relation and co-operation between institutions and the employers, and to construct channels whereby institutions supply specialized manpower to non-state and individual enterprises.

Under this policy guideline, incomes have generated through economic activities operated by the institutions. Like higher education institutions elsewhere, the most established institutions in China sell research products for additional income, so that close partnerships between industries and the educational sector have developed.

With favourable official policies and legal provision stipulated in the Law of Education encouraging universities to run business firms and enterprises, many school-operated factories and school-operated companies have emerged

In addition, other revenue generation strategies, such as offering commissioned courses, running adult education and evening courses, donations from enterprises and individuals at home and from organizations and individuals overseas are becoming very popular in the Chinese universities sector.

Apart from the activities and strategies adopted in the university sector, university students have to pay for their tuition fees. The emerging of fee-paying students in the 1990s implied the time by all the students enjoying the free charge of higher education finally came to the end.

Up to this point, it is clear that higher education institutions have searched for different methods to diversify their educational funds. Higher education institutions in China have tried to earn more income by venturing into the commercial and business fields. With more emphasis being put on resource allocation and performance, it can be argued that China's higher education is beginning to feel the impact of marketisation.

2.3. The Introduction of "competition" to enhance efficiency and effectiveness.

Drawing comparative insights from leading universities in other countries, the CCP has begun to realize the importance of bringing about substantial improvements in its university education. The central government has, since 1993, introduced the 211 engineering project to express intentions of the state to identify and give special financial support to 100 of the best universities by the twenty-first century.

Central to the scheme is a plan to introduce "competition" among universities, rewarding the top 100 higher educational institutions. All universities are assessed by quantifiable, objective criteria on staffing, buildings, libraries, laboratories, research and funding, etc (Chan & Mok, 2001). In order to improve their research and academic profile, many universities like Shanghai Universities, have merged with other local colleges and universities to form comprehensive universities. The 211 programme means that "internal competition" has been introduced among universities.

After the introduction of "competition" in the University sector, the resources and funds of individual university are determined by their research output and the proportion of graduates getting employment.

In 1998, the Higher Education Law was promulgated to allocate additional funds in support of the development of Beijing University and Qinghua University, which are considered the two top higher education institutions in China; individual provinces or cities can choose one university and allocate additional funds to help its development in their regions. Thus, in order to get financial support from central or local government, an "internal market" is evolving in the Chinese university sector.

Educational services are priced, the diversified financing, together with the internal competition are highly suggested that China's education has gone through a marketisation process.

3. The Marketisation Experience in Britain

Policy and Reform between the mid-1980s and the mid-1990s.

The marketisation of British higher education was not of course unique. It was part of a world-wide change in public sector management of which the most dramatic manifestation was the downfall of the centrally planned economies of Eastern Europe. In general, there has been a growing interest by many governments in the introduction of market types of organization and in the use of financial incentives to encourage a more efficient allocation of resources. This movement towards market approaches has taken several forms, depending on the educational level concerned. However, it is possible to discern a common trend towards increased use of funding formulae and greater financial autonomy for institutions, as well as increased competition in the provision of educational services (Williams, 1997).

Nearly all the British government reforms of the 1980s and 1990s have involved a movement towards market approaches. Essentially there have been two forms of marketisation, privatization and the creation of quasi-markets. In what are seen as welfare services, for which full privatization is not deemed to be appropriate, the concept of quasi-markets has been introduced. In essence this means a government agency performing the role of surrogate customer, and purchasing services on behalf of the ultimate consumers, from service suppliers such as hospitals, schools, and universities. While the transformation of British higher education dates back to the early 1980s, the last decade have seen incredibly rapid change. The salient changes that occurred then were striking both in their speed and magnitude: not only did the number of students almost double – as did the number of institutions empowered to award degrees; but also the proportion of young people entering higher education rose across the UK is a whole from less than 20 per cent to almost a third and to more than 40 per cent in Scotland. What is more, in 1992 the polytechnics – along with a couple of colleges of higher education – became universities. The UK's binary higher education system had become a single, unified system with integrated mechanisms for funding and the assurance of quality (Editorial, 1998).

3.1. Widening Access

As modern economies restructure and reposition themselves in a competitive, post-imperial and global market place, governments require that higher education provides democratic access to high-quality qualification for greater numbers of students, while at the same time demonstrating that they are contributing directly to national economic effectiveness through the production of relevant new knowledge and highly qualified output (Coffield & Williamson, 1997).

Historically, British higher education has had a low participation rate compared to the U.S. or continental Europe. The government had by now espoused a policy of encouraging enrolment expansion to bring U.K. enrolment levels up to the levels of most other OECD countries and it aimed to do this as inexpensively as possible through the use of market mechanisms. In 1989 a package of measures was agreed to with the Treasury whereby the fairly generous maintenance grants received by all British full-time undergraduate students were to be progressively replaced by repayable loans and the Treasury agreed to pay fees up to about 30 per cent of teaching costs of an unlimited number of students. Policies and funding formulas have rewarded expansion; consequently, institutions could not afford *not* to increase in size (Green, 1995). As a result many institutions increased their enrolments spectacularly from 1990 onwards by as much as 25 per cent per year for 2 or 3 years in some cases.

The Institutions soon realized that international students now brought with them significant cash value that was free of government constrains. To get cash value accruing from full-fee paying international students, they abandoned their previous passive attitude to foreign student recruitment and undertook vigorous recruitment drives (Bruch & Barty, 1998). Both these reactions, for foreign and U.K. students, were essentially market responses, determined by the mechanisms by which universities received their funding and the regulations which governed them.

3.2. The internal competition

3.2.1. A new ecology of higher education: The end of the binary system:

Until 1992, the polytechnics and the universities had separate funding mechanisms and quality review procedures. The University Grants Committee (UGC) was the principal mechanism for university funding. The University Funding Council (UFC), which replaced the UGC brought the government more closely into funding decisions; the polytechnics, whose missions and organization were historically different from those of the old universities, were largely funded by the Local Education Authorities and under the National Advisory Board for Local Authority Higher Education (NAB).

The current system reflects two additional important changes. In April 1989, the polytechnics became independent corporations, no longer under the control of local government; in 1992, they became universities and were merged with the old universities into a single system for funding purposes. Similarly, the separate funding bodies for the two sectors, the UFC and the PCFC were merged in 1993 to form a single Higher Education Funding Council of England (HEFCE) (There are separate Funding Councils for England, Scotland, and Wales; each has different policies and different procedures.)
Once funded separately, the old and the new universities now compete for resources under the control of the Higher Education Funding Councils. The competition for research funding has had a notable effect on institutional mission and behaviour. Under the current incentive system, each academic department's research programs and productivity are evaluated. The "grade" resulting from this "research selectivity exercise" is translated into a grant to the university; the higher the grade, the larger the allocation. It should be no surprise that the new universities are scrambling to develop the research capacity formerly reserved for the traditional universities.

Because the funding system also rewards increased student enrolments, the old and the new universities will undoubtedly find themselves increasingly competing for students. This competition will occur especially in fields of study where there is overlap of institutional offerings; it will be more of an issue for the less prestigious old universities, which will find themselves in competition with the new universities. As the population of adults and part-time students grows, so will the competition to attract these learners.

3.2.2. Proving Excellence: living with quality assurance

British universities are under the assessment microscope; quality must be proved. In the early 1990s, intending to improve educational services offered by the public sector, school authorities in Britain have tried to give more choices and options to students, and as well, adopted market principles and introduced "competition" into UK higher Education (Mok & Wat, 1998). The competitively-established resource input was determined by government using the results of the Research Assessment Exercise (RAE) and a Higher Education Funding Councils' Formula (HEFCE). Together they were used each year to purchase over £600 m of research for the nation.

The Research Assessment Exercise (RAE) requires departments seeking research funding to submit details of their research aims, activities and achievements. As Curran (2000) says that the complexity of the RAE has raised over time and by 1996 the assessment scale was under eight headings like: overall staff summary, publications or other public output, research students, and external research income. The information was evaluated by a panel for each subject area and a grade awarded on a rating a scale that in 1996 contained seven points of 1, 2, 3b, 3a, 4, 5, and 5*.

The second assessment mechanism, in effect since 1993/4 academic year, is the research selectivity exercise conducted by the Higher Education Funding Councils' Formula (HEFCE) (Curran, 2000). For purposes of these assessments, the university world is divided up into 72 fields. Departments are rated by a panel of peers from universities on a scale of 1 to 5. Each department completes a self-assessment and provides supporting documentation. Assessments are carried out approximately every four years and funding for that period is tied to the rating received. In 1997, the funding formula used by the Higher Education Funding Councils to allocate research funds was changed: most of the monies were allocated per department on the basis of a weighted RAE grade (the quality measure), and average cost for the subject and a volume measure according to the number of research active academic staff, research students and research assistants.

Reactions to the two types of government mandated assessments have been mixed. However, there has been the recognition that some good has emerged from the assessment. Competitive advantage lay within those institutions that could create an environment which fostered research-successful departments; in many cases for the better.

3.2.3. Funding resources:

Universities had to be both relevant and wealth producers. Their independence had to be undermined and they had to become more entrepreneurial, so that British Government cut the size of the higher education grants to universities and introduced efficiency gains in order to make them more responsive to the demands of the market where they could earn income from both teaching and research (Jarvis, 2000).

Following the public expenditure cuts of the early 1980s, there were various attempts by the government to encourage higher education institutions to move in directions wished for by government. In broad terms these took the form of encouraging them to concentrate their efforts, in both teaching and research, more explicitly on what the government perceived to be the needs of the economy. It was also in the mid 1980s, however, that the government began its strategy of continuing to reduce general funds while making money available on a competitive basis for specific initiatives that the government wished to encourage (Williams, 1997).

The existing Funding Councils were created to bring a market mentality to the funding process, whereby the government "purchases" services from the universities. Government funds for academic programs are allocated through several streams. First, institutions receive an allocation for instruction, based on a competitively determined formula for the cost of instruction per student in a given discipline; the methodology is designed to reward efficiency rather than quality. It can be argued, however, that this is really a "pseudo-market" approach, since the government controls the policies and the funds. A second income stream is a block grant for research; the amount is pegged to the results of the research evaluations. The majority of the research funding, however, is given for support of specific research projects, coming from the Research Councils or private industry. Allocations are also made for capital expenses.

In addition, universities are urged to raise money from non-government sources. For example, they have raised research money from trusts or from industry and by securing sponsorship for particular activities; they have appointed public relations officers, hunted benefactors, staffed fund-raising development units and squeezed their alumni to the limits of their generosity. These efforts have had some success: the proportion of their income got from non-government sources – with great variation among institutions – has increased year by year for the last decade.

4. Lessons Drawn from this Comparative study

The above presentation has indicated that the central government in P.R.C, has gradually forsaken its major role in the provision of educational services, adopting a fee-charging principle to recover a large proportion of costs through tuition fees and exploring other means to recover costs. Multiple channels of financing include educational surcharges, local government subsides, tuition fees, and funds raised from other activities. These developments show the state and non-state sectors' shared responsibility in providing educational services. Above all, according to Mok (1997b), the efforts to recover costs in education and the expansion of private and people-run education reflect the fact that China's education is going through a process of what could be described as privatisation and marketisation.

In view of the changes in China's educational provisions during the mid-1980s and the mid-1990s by-emphasising the importance of individual responsibilities and encouraging local communities and social organisations to create additional educational opportunities, it can be said that the Chinese government is continuously reducing its educational subsidy, provision and regulation, moving from a typical state control model towards a state supervising model in order to vitalize and better mobilize universities economic development (Min, 1994). The boom in private higher education and the introduction and adoption of user-charge principle suggest that a "quasi-market" is evolving. However, despite the fact that signs of privatisation and quasi-marketisation have occurred (Chan & Mok, 2001), the "internal market" in China's education has not yet fully developed, and the split of purchaser and provider is still in the process of evolving. The strategy of privatisation / marketisation as adopted by the Chinese government is highly instrumental, aimed only to improve administrative efficiency and effectiveness, rather than to make a fundamental shift in value orientation (Mok, 1997b). In fact, the private sector still plays a very limited and peripheral role, under the dominance of public institutions, in the provision of educational services.

On the other hand, working in a policy context in which the quest for quality, efficiency and effectiveness is emphasised, educational practitioners and academics in Britain are looking for an objective measurement of quality. Unlike the case of China, Britain government has committed herself, both ideologically and practically, to the practice of "managerialism". The education reforms during the mid- 1980s and mid-1990s in Britain have undoubtedly shown that the government has been influenced by the tidal wave of marketisation in enhancing the efficiency, effectiveness and economy of education.

Comparing the experiences of both places, we can argue that Britain's education has definitely been affected by the strong tide of managerialism. In this regard, the education reforms in Britain can be understood as a response to the concerns raised in the local community as to whether academic quality can be maintained, especially after turning from an elitist system to a mass education.

Though the reforms in the educational system in China seem to suggest that China's education has been going through a similar global experience of marketisation, a closer scrutiny clearly indicates that it is far more "instrumental" when adopting market mechanisms, which are intended as a measure to improve administrative effectiveness rather than to make a fundamental shift of value orientation towards notions of public choice. Unlike the case of British counterpart, where marketisation of education has shifted to a "corporate management" approach, the Chinese experience can be argued as being the government's attempt to use market forces and new initiatives from the non-state sectors in order to create more learning opportunities, rather than an ideological shift to managerialism and its practices.

5. Conclusion:

In comparing and contrasting the "marketisation" projects in both China and Britain, we must understand the differences between the Chinese experience of "marketisation" and the experience and practice of marketisation in Britain. Clearly commercial aspects, user-charge principles and a limited role for private provision in China do indicate that state has reduced its role in educational provision and financing, but this process does not mean that the state would withdraw its total control. The "marketisation project"in China must be understood and analysed in light of the wider context of the "demonopolisation" of the state's role in the public domain (Mok, 2000), with its own way of governance.

Even though we have been arguing that the educational developments in China and Britain have been experiencing a similar global trend in the reduction of the role of the state in education, the so-called global tide of "marketisation" should not be treated as a simplistic notion of a same universal global trend. In Britain, the state's diminishing role in the public services is giving more impetus to the market's growing efficiency and effectiveness.

Therefore, we must not analyse "marketisation practices" in education in these two countries simplistically in terms of a one-dimensional movement from the state to the market. Hence, as I suggest, the international phenomenon of marketisation in different places should be understood differently, in each place, in its own right.

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The Practices of Critical Thinking Component and Its Impact in Malaysian Nurses Health Education

Abdul Ghani Kanesan Abdullah School of Educational Studies Universit Sains Malaysia Penang 11800 Malaysia Tel: 60-4-653-4328 E-mail: agk@usm.my

Naser Jamil Alzaidiyeen School of Educational Studies Universit Sains Malaysia Penang 11800 Malaysia Tel: 60-12-498-9384 E-mail: naser_jamel@yahoo.com

Ng Mooi Yee School of Educational Studies Universit Sains Malaysia Penang 11800 Malaysia) Tel: 60-16-454-4506 E-mail: Mooi@yahoo.com

Abstract

The purpose of this research is to study the impact of the critical thinking component in the health education curriculum of nurses for patients with different health needs. Data for this research was gathered from mixed approaches, quantitative and qualitative approaches. For the quantitative approach 84 student nurses were selected randomly to represent the experiment and control groups in a private medical college in Northern part of Pennisular Malaysia. The 2 groups of students had been exposed to health education and clinical training in the wards as determined by the nursing curriculum. Following that, a treatment in the form of a critical thinking module which consisted of critical thinking related activities, was only given to the experiment group. Following the quantitative approach was used. In this session, 5 student nurses were selected randomly and they were interviewed for 2 times, the first session was after the treatment was given and the second session was after clinical training with the patients. Besides these interviews, the patients concerned were also interviewed Findings from t-test and ANCOVA showed significant difference in the achievement between the experiment and control groups. In other words, these findings showed that there was a significant impact of the critical thinking component in the health education curriculum of nurses. Qualitative data findings showed that the respondents demonstrated thinking skills during their clinical training. Their patients too voiced individual views and perceptions. The students also felt that their thinking had improved after their induction to the critical thinking module.

Keywords: Critical Thinking, Curriculum, Nurses, Health Education, Patients, Decision-making

1. Introduction

The Ministry of Health and the Nursing Board of Malaysia had realized the importance of health education and had integrated the teaching of health education into the basic nursing curriculum (Nurse Curriculum, 1996). However, the focus of health education in this basic nursing curriculum is only in the community health nursing discipline where 14 hours have been allocated for the imparting of knowledge on health education. Therefore, health education is only touched upon as part of general nursing interventions in the other nursing disciplines on a "touch and go" basis. The theory content of health education especially on patient survival skills such as injection techniques and diet education is given more focus. Thus, the impact of the health education delivered was compromised without due consideration for the patient in his reality setting.

2. Background of the Study

Today's patients are becoming better consumers of health care. With internet access patients are becoming responsible for their own health maintenance, modifying their behaviour and managing chronic diseases with complex therapeutic regimens (Rankin, Stallings & London, 2005). Patients demand to know more about their health conditions and

treatment through health education as they know it is their right to participate in decision-making regarding their own health care.

Generally nurses too seek to deliver holistic care for their patients. However, where the delivery of health education in nursing practice is concerned, much needs to be improved. The general notion nurses have is that if they have done their job of informing their patients and their families about the essentials of staying alive and away from hospital, they have carried out health education successfully (Rankin & Stallings, 1990). There is usually no follow-up on the effectiveness of the health education given. Its impact is only known when the patient is readmitted for the same complaint or when his or her disease condition has deteriorated and complications have set in.

This scenario is evident in a study carried out by Ruzlan, Hairne & Nurulaidah (2006) in Malaysia revealed that even though health education was given as a matter of routine, the emphasis on its importance did not seem to get communicated to the respondents. In a survey on home care carried out by Liang (2007) it was found that respondents and their families were not given adequate or clear information which they could understand pertaining to their after - care at home. It was also found that they generally preferred health education to be given to them by the nurses in their own home settings rather than in the hospital set-up.

Considering the above factors related to the current health education management, it indicated that much needs to be carried out to improve the quality of health education management. To begin with, before the nurse can carry out effective nursing functions including health education delivery, they have to be equipped and trained with the appropriate knowledge, behaviours and attitudes in order to promote health, help prevent diseases and care for the sick through nursing education (Document 3, Detailed Educational Programme, 2004). The students are not taught how to assess and think critically to deliver health talks tailor-made for patients with different needs. Besides this, there is also the critical lack of experienced and trained nurse educators (Chua, 2004). Once student nurses had completed their theory component, they were expected to know how to transfer theory into practice by delivering it effectively to their patients and their families as each situation arose. Bandura (1989) had proposed that individuals learn from observing and imitating a model's behaviour. Therefore, the student nurses would have learnt their clinical nursing skills through observing role models in their nurse teachers and trained staff nurses in the clinical settings.

Besides the teaching learning process, other vicarious aspects could be contributory to the ineffectiveness of health education outcomes. If the health education carried out is ineffective, one would have to reconsider the way it is being communicated to the patients. Barriers to effective communication could have occurred between sender and recipient taking into consideration the messages conveyed as well as the communication channels used (Kozier, Erb, Berman & Snyder, 2004). Other aspects include patient understanding of the health education content which could be due to differing perceptions since they are individuals from different socio-cultural backgrounds. Since nurses are usually hard pressed for time to give proper health education, they tend to concentrate only on survival skills such as injection techniques, dietary requirements and signs and symptoms of disease recurrences. The patient's reality problems, reinforcement and evaluation of learning goals are often overlooked.

3. Application of Critical Thinking in Nursing Practice

The traditional general thinking skills may be used to analyze, judge and argue on an issue. These skills may be adequate in dealing with standard situations and solutions. However, critical thinking and decision-making have been associated with improved clinical expertise as critical thinking is the centre of the process of clinical reasoning and clinical judgement (Jackson, 2004; Martin, 2000).

Using critical thinking to develop a plan of nursing care requires considering human factors that might influence the care plan as nurses interact with patients, families, and community as well as other health care providers in the process of providing appropriate, individualized nursing care. The culture, attitudes and thought processes of the patients, nurses and others affect the critical thinking process throughout the nurse-patient interactions (Wilkinson, 2001).

Nurses must use critical thinking skills in all practice settings. Regardless of the setting, each patient situation is viewed as unique and dynamic. The unique factors that patients and nurses bring to the health care situation are considered, studied, analyzed and interpreted. Interpretation of the information allows the nurse to focus on those factors that are most relevant and significant to the clinical situation. Decisions about what to do and how to do it are developed into a plan of action. These skills include systematic and comprehensive assessment, recognition of assumptions and inconsistencies, verification of reliability and accuracy, identification of missing information, distinguishing relevant from irrelevant information, support of the evidence with facts and conclusions, priority setting with timely decision-making determination of patient-specific outcomes and reassessment of responses and outcomes (Alfaro-LeFavre, 2003).

In the area of health education, in order to be effective, the student nurse has to apply his or her thinking processes in order to be able to manage each of his or her patients according to the individual patient setting and requirements. Critical thinking is a higher-order thinking process which uses basic thinking processes to analyze arguments and

generate insight into particular meanings and interpretations, develop cohesive, logical reasoning patterns, understand assumptions and biases underlying particular positions and attain a credible, concise, and convincing style of presentation to put forward an argument (Paul, 1993).

4. Critical Thinking Skills in Nursing

In nursing, LeMone and Burke (2008) categorized critical thinking skills into divergent thinking which is the ability to weigh the the importance of information gathered in order to explore alternatives and draw conclusions from the relevant data collected. Being able to reason is another thinking skill that is important in that the nurse is able to discriminate between facts and non - facts so that decisions are made in a systematic, logical manner to solve problems. The ability to clarify similarities and differences from irrelevant information will also help the nurse focus on the situation at hand. Reflection is when the nurse takes time to think and compare different situations with similar solutions. This reflective exercise in turn helps to give the nurse options and alternatives when caring for different patients. However, this reflection cannot take place in an emergency situation since the nurse needs to follow standard protocols in such situations.

Though the nurse may know "the what" of thinking but from the nursing process, they also has to know "the how" of thinking that is the thinking skills required for a specific situation (Kozier, Erb, Berman & Snyder, 2004). Critical thinking skills tools could be used for this purpose and de-Bono (1999) believes that thinking skills can be taught. This consideration has resulted in the development of thinking tools, among which is the CoRT 1 thinking method (de-Bono, 1972). This method focuses on different aspects of thinking from which thinking tools are developed and taught. These thinking tools are as follow:

4.1. P.M.I (Plus, Minus, Interesting)

This is a tool that permits a non-dialectic exploration of an idea by adding a third, value-free category to the usual 'pros and cons' approach to decision-making. It focuses one's full attention and energy equally and deliberately to all the positive, negative and interesting sides of an issue without any preconceived notions or prejudices, thus helping to avoid immediate acceptance or rejection of an idea or issue. A course of action can then be selected from a range of options provided from considering the P.M.I. aspects of the issue concerned.

4.2. C.A.F. (Consider All Factors)

This technique involves the thinking of all the factors involved in a particular situation. Care should be taken to avoid only considering those first factors that come to mind. By doing a C.A.F. one gathers as much information as is possible in exploring a situation from all angles, evaluates and then considers it before a decision is made.

4.3. O.P.V. (Other People's Views)_

This tool helps one to focus consciously and deliberately at other people's viewpoints to better assess the impact of a proposed decision. To be able to listen to other people's views also helps to increase one's sensitivity to the opinions of others so that their views are considered during the decision-making process of an issue.

4.4. F.I.P. (First Important Priorities)

This strategy is used when one has to focus and select priorities before a decision is made. Therefore, the most important ideas are considered first in the decision-making process. However, this method requires one to make judgement on a situation as what is important for one individual may not be so for another person.

4.5. A.G.O. (Aims, Goals, Objectives)

This tool aims to provide the general direction towards a final destination of a goal while objectives are recognizable points of achievements along the way towards that goal. This strategy helps one to focus directly and deliberately on one's own intention and the intention of others behind an action.

4.6. A.P.C.(Alternatives, Possibilities, Choices)

This strategy helps to generate different aspects that will help a person do things differently. It is an attempt to explore new alternatives, possibilities and choices that can change a situation rather than limiting oneself to obvious or more traditional options.

4.7. C & S (Consequences and Sequel)_

This is a tool for looking ahead to see the short, medium and long term consequences of a potential decision. This tool will help an individual in decision-making as one has to consider all implications on client outcomes.

5. Aim of the Study

The aim of this study was to establish:

i) was there an impact of the critical thinking module on the achievement of the posttest scores between the experiment and the control groups?

ii) how was critical thinking practiced in the delivery of health talks after having attended the critical thinking module?

6. Research Methodology

This is a combined quantitative and qualitative study in which a quasi-experiment group design was used to establish the presence of critical thinking of 2 groups of nursing students via a pre-post test (Sowell, 2001; Punch, 2000). To compare the test results between the 2 groups of students, the static-group comparison design was used whereby both groups of student nurses were pretested after which the treatment was instituted to the experiment group.

6.1 Sampling

The sample of quantitative approach for this study comprised of 2 groups of students, one being the control group while the other was the experiment group. Each group was made up of 42, year-2 nursing students. These students had already been given the theory of health education and exposed to the clinical experience of carrying out health education in year 2. Their ages ranged between 19 and 26 years. They comprised of 86% of Malays, 1% Chinese, 7% Indians and 6% other indigenous groups.

While qualitative methods as suggested by Patton (1990) were used to extend a more in-depth understanding of an experience. To achieve that, interviews and health talks was used in this study. Semi-structured questions related to the training module were prepared as a guide to ensure that the interview was more focused. Two sessions of interviews each with semi-structured questions were carried out with 5 students in a conducive environment using a standard interview protocol. The first interview was to gather information and obtain feedback related to the critical thinking module. The second interview was to get their opinions and feedback as to the effectiveness of the module in practice after they had each conducted a health talk to their patients.

6.2 Instrument

The research instrument of this study consisted of five vignettes using nursing scenarios related to the main chronic illnesses in Malaysia (Materia Medica Malaysiana, 2005) which were selected for the pre-test and post-test. The selected scenarios for health education management was focused on the areas of heart, pulmonary, endocrine and neoplastic diseases as these conditions are among the eight leading chronic illnesses in Malaysia (Materia Medica Malaysiana, 2005). Each vignette consisted of 9 multiple choice questions formulated in relation to Paul's eight elements of thoughts (1993) for each scenario. Each question was used to assess the underlying thought processes involved since the assessment was not on the answer alone (Nitko, 1996). These vignettes were developed to evaluate the student nurses' abilities to analyze simulated data, identify additional data needed, decide on all possible problems in the scenario, identify nursing interventions and provide a rationale for their responses, hence providing the opportunity to assess the decisions made and the thought processes that were used to arrive at those decisions. Each question consisted of 2 parts. The first part of the question required the student to identify the thought in relation to the given scenario while the second part required the rationale for giving rise to that thought. As this study aimed to establish the presence and the rational of thoughts parallel to Paul's eight elements of thoughts (1993), the student had to select the best answer appropriate to the scenario given.

While for the qualitative part, the semi-structured questions for the interviews were adopted and adapted from the interview format by Teik (2003). Although the questions were arranged and were fixed, the manner and sequencing of asking the questions were rearranged and modified to obtain more information.

6.3. The Instructional Strategy

The critical thinking module was delivered in the form of 3 instructional strategies. The first instructional strategy was context-free and was designed to introduce students to critical thinking focusing. The second instructional intervention used a mixed method which taught the students the various thinking tools and at the same time context-free situations or problems forwarded by the student were discussed in relation to the thinking tools learned thus giving feedback to the students to their application. The third strategy engaged the students in a challenging cognitive situation by involving them in applying critical thinking in the teaching and learning process. Reflection was used when students were requested to construct and apply their own critical thinking to the cognitive situations identified.

7. Findings

7.1. Impact of the critical thinking module on the achievement between the experiment group and the control group.

Table 1 shows the descriptive statistics for the dependent variable (pre-test) by the groups. The score mean of the pre-test of the control group was 62.309 (S.D=7.023), which was almost similar with the score mean of the experiment group, which was 63.357 (S.D=7.560). Before the hypotheses was tested, the difference and standard errors of the post-test scores were calculated between these two groups. The results shows that the mean score of post-test for the

experimental group is 64.906 (S.D = 7.140), which is greater than the mean of the control group (*Mean* = 62.309; S.D = 8.869). This shows that there is a difference in the score means which is in favour of the experiment group of 2.517. Thus, a t-test was run to determine whether these two groups were statistically significant (see Table.1).

The results from Table 1 shows that the two groups were non statistically significant (F=0.049; p = 0.825) with t value -0.257 (p=0.789). This result indicated that the post-test score means between the two groups were similar and could be used for further analysis in this research.

In order to examine the impact of the critical thinking between the experiment and control groups on the post-test, the analysis of covariance (ANCOVA) was conducted and the result are shown in table 2. The mean score of the post-test was used as the dependent variable, while the covariance was the pre-test score mean. The results shows that there is a significant difference between the experiment and control groups on the post-test scores (F $_{(1',83)} = 10.499$, p <.05). However, there was no significant interaction effect of treatment and control, on participants' achievement (F $_{(10,83)} = 1.418$, p >.05).

The results indicate that the treatment gained by the experiment group has an impact on critical thinking achievement significantly compared to the control group. In other words, these results show that there is a significant impact of the critical thinking module on the achievement between the experiment group and the control group (see Table.2). The F tests the effect of group. This test is based on the linearly independent pair-wise comparisons among the estimated marginal means. The results in Table 3 revealed a significant effect of treatments on participants' achievement. The null hypothesis of no significant effects of treatments on participants' achievement was therefore rejected (see Table.3).

7.2. How is critical thinking practiced in the delivery of health talks after having attended the critical thinking module?

The students had to prepare the contents and framework of their health talks prior to delivery. As a health talk is an interaction between two or more people, it is often not possible to deliver a health talk according to pre-prepared scripts. Therefore, the students had to be flexible in the manner and sequence of asking questions which may even have had to be simplified in order to obtain, as well as to deliver, important and relevant information. Besides that, questions that were not scheduled for the interview were also included as they were dependent upon responses from the students themselves. Critical thinking, therefore, was carried out by the students when in the process of delivering their health talks to their patients even though they had pre-prepared scripts. This was evidenced through the questions and statements that they made which were guided by the seven thinking tools in the CoRT method.

7.2.1. Plus, Minus, Interesting (P.M.I)

The results revealed that the students use PMI to understand patients' knowledge on how they manage their health. It also helps that the respondent showed interest in their history of illness especially their duration of illness as it gave an indication of how their patients managed their disease at home so that remedial advice could be given to them if they were found lacking. An example of the students' concerns is presented below by Student 1 with her patient:

Student: How long did uncle have diabetes?

Patient: Five six years already but very mild...control only...control...a little control.

Student: I have read uncle's notes just now. Doctor wrote that uncle has taken medicine before?

Patient: Herbal medicine

Student: Like what uncle has told me...you had a small wound before?

Patient: Put lotion and take pills, injection...It was OK

Student: After that uncle did not go and see the doctor?

Patient: Correct...not yet ...felt painful, painful for a few days...admitted direct to hospital...it was a little while only.

Student: This shows that uncle does not understand...your wound and all...because with a wound like this, uncle, we don't put any medicine on it...

Patients with chronic diseases such as diabetes and asthma had yet to come to terms with their disease conditions. The students discovered that only 2 of the 5 patients were still working while the other 3 were unemployed due to their diseases. The students perceived that being unemployed tends to aggravate their patients' feelings of uselessness as expressed by the patient of Student 1 when he said:

"Ar....not working, staying at home only..."

The patients were perceived to be negative and pessimistic towards the course and prognosis of their disease. Discovering that, the students had attempted to motivate them through positive advice and even family duty and obligations as presented below:

"Uncle is really lucky...to have a wife who is helpful...uncle has to return her kindness, have to look after your wound because if not, the wound becomes like this...difficult for auntie". (Source: Student 1)

"Have to strengthen your will power...don't eat food that has sugar" (Source: Student 4)

By asking patients to share positive, negative and interesting aspects of their disease management, the students were able to motivate their patients to encourage them to accept their disease in a more positive light. Any new information discovered from the interviews could also be used as a basis for further medical interventions for the patients.

7.2.2. Consider All Factors (C.A.F)

Considering all factors involved in a patient's situation and avoiding those that first come to mind is important in order to gather as much information as is possible before a decision is made regarding patient management. Among the factors discussed during their health talks that could bear an influence on the course of their disease included their lifestyles, the impact of social practice such as fasting during the fasting month, food taboos and their gradual sensory loss as presented below:

"Uncle's lifestyle with food is important because it influences uncle's sugar levels in the blood. During the fasting month, uncle does not eat?" (Source: Student 1)

"If we live in the village...there are many things...so easy to get foot injuries...for diabetic patients, auntie, they lost their sense of touch..." (Source: Student 2)

"...our lungs are a little weak...so when we drink...have to be careful a little...when we eat and drink...like don't take so much ice..." (Source: Student 3)

The student nurses had been able to consider the various individual patient factors which exerted a direct influence on their health care management at home.

7.2.3. Other People's Views (O.P.V)

It is necessary for the nurse to obtain other people's viewpoints regarding their patients' diseases, especially the significant others in the patients' families as it would indicate their involvement in the patients' care at home as presented by the patient of Student 1:

Student: Who prepares your food at home, uncle?

Patient: The person in my home

Student: She did not cook separately for uncle because she has to sweeten the food?

Patient: She makes the same...she follows my way. If the blood is diluted, she dilutes...did not make separately. That's all.

Student: Family members also drink diluted?

Patient: If the thing cannot be eaten, (for me) she will eat it.

Student: Means uncle's wife controls uncle's food

Patient: Yes...she's like that, I admit, not to hide (from you)...she will inform the doctor if she can...

The disruption of household routine can be severe and involves the family doing things for the patient that are observable as well as give rise to negative feelings. The patients' accounts of their families' involvement in their care gave one an idea of their disease management in the home setting. Therefore, if the family perceives the patient's illness in a negative light, the nurses would have to discuss and counsel family members in this respect. This is especially so since the usual health education talks are delivered according to the nurses' perceptions rather than their patients' and their families' needs.

7.2.4 First Important Priority (F.I.P)

The nurse has to assess and select priorities when delivering health talks. One cannot assume that all patients have the same needs and therefore have the same priorities. The most important ideas have to be considered first for each individual patient. These may include advising the patient not to self-treat or even emergency measures as presented below:

"Even if it is a small wound, we go and see the doctor. After this, do not put any medicine first. Yes...uncle?" (Source: Student 1)

"OK...sometimes so much work until not eating. Put some sweets ready in your pocket" (Source: Student 2)

"...If feel want to blackout...uncle make some sweet drink..." (Source: Student 4)

Each patient condition requires different interventions and therefore nurse priorities for individual patients should be set according to the individual patient context.

7.2.5Aims, Goals, Objectives (A.G.O)

Once the priorities have been set for the individual patient, the nurse would have to determine the specific aims, goals and objectives to deliver the necessary interventions to achieve those priorities. Some priorities are in the form of teaching preventive measures and giving information. Some examples are presented as follow;

"...Before uncle sleeps...look all over uncle's feet...if difficult to look all over...ask your wife or children to look all over, in between the toes...see if there's any injuries...also if you can...wash your feet with warm water (Source: Student 1)

"Sister knows the cause of asthma? Has the doctor ever tell you why asthma?" (Source: Student 3)

"OK...what is your aim for your health? Like your aim...now your asthmatic problem is getting worse right? So how to control control...you take any medicine to control it" (Source: Student 5)

The patients' priorities will determine the specific goals of nursing interventions in meeting the patients' health education needs by providing the relevant information and advice regarding their care at home.

7.2.6 Alternatives, Possibilities, Choices (A.P.C)

Knowledge about the consequences of a behaviour is important in making decisions and choices about health behaviour. Different aspects are generated to explore new alternatives, possibilities and choices that could be used to manage a disease. If this aspect is not explored, then health education talks are not complete as these alternatives are already being practiced by most patients in our multi-cultural society even though they may not be officially sanctioned by the doctor. Therefore the patient is open to many options including the option of going for traditional treatment, self-prescribing and self-treating and even the option of not seeking medical help like some of the questions probed by the student nurses below;

"After that uncle did not go and see the doctor?"

(Source: Student 1)

(Source: Student 2)

Student 4 also discovered that her patient had a peculiar way of seeking traditional treatment which could be dangerous as his method of treatment was haphazard and gave the patient a false sense of security in not seeking hospital treatment. This is presented below;

Student 4:...Ah...uncle takes any other medicine besides hospital medicine for diabetes?

"...did you take traditional medicine? Like medicine from the village?"

Patient: Traditional medicine...

Student 4: Traditional medicine?

Patient: Herbs

Student 4: What's that...a drink?

Patient : Drink

Student 4: Medicinal drink...like herbs...

Patient : Yes

Student 4 : How long uncle has been taking it?

Patient : Not often...see if there is any exhibition...

The nurse should not assume that the patients have no other options except to come to hospital for treatment. Since Malaysia is a pluralistic country, it is rich in tradition and social practices. The patients from the various cultural backgrounds often practice a two-prong approach in the management of their disease. Besides following the western type of treatment in hospital, more often than not the patients also fall back on their own traditional health practices for the treatment of their disease. An exploration of this aspect is important to avoid any conflict in the implementation of both approaches to care.

7.2.7. Consequences and Sequel (C & S)

The nurse uses this tool to help patients look out for the short, medium and long term consequences of their disease. This would help in prevention efforts as well as to avoid any complications in their disease management at home. Some examples from Student 1 are presented below;

"Like what uncle told me ... you have a small wound before?"

"But uncle told me the wound was small...maybe wear shoes?"

"... Uncle put medicine, close up the wound...wear shoes ... "

"This shows uncle doesn't understand la...all wounds...because if the wound is like this uncle cannot put in any medicine..."

"For normal people a small wound can heal but difficult if diabetes... because that place blood supply cannot reach...then later it becomes worst..".

"But because uncle has wound at this foot maybe shows didn't look after feet ... "

The other students also warned of the consequences of diabetes if care was not taken:

"...But if a lot of sugar, auntie's sugar level goes up and down also dangerous...If goes down, auntie will feel want to blackout...blackout ...all sweating, sweating..." (Source: Student 2)

"Usually if there's some water in between the toes it will grow microorganisms...that will cause infection" (Source: Student 5)

The outcomes of a disease were discussed during the health talks to make the patients aware of the consequences if care was not taken when managing the disease at home. This would help in reducing the number of complications arising from mismanagement of a disease and indirectly reduce the number of readmissions to hospital. However, on the other hand, even if patients do have an understanding of the disease, it does not gurantee that they will follow proper health behaviours. When delivering health talks, the students had considered and had applied the seven critical thinking skills of the CoRT method where appropriate resulting in the students delivering a more comprehensive health talk tailor-made to the individual patient need.

8. Discussion

The results indicated that the critical thinking module, to a certain extent, had a positive impact on the experiment group in helping them to organize their thoughts more comprehensively. This could be due to the fact that those in the experiment group had more exposure and experience in giving health talks to patients as compared to those in the control group although both groups of students had been given the theory on health education while they were in semester 3 (Document 3, Detailed Educational Programme, 2004). Thus, thinking skills need to be nurtured as the skills to think about issues and problems do not suddenly appear in the students (Tama, 1989). Hence, it is assumed across the board that the experiment group of this study was more critical in their thinking capability. Maturity is another factor to be considered as 10% of the students in the experiment group were older then the control group. Maturity in age constituted a disposition to think critically (Facione & Facione, 1992) and Alfaro-LeFevre (2004) too agreed that those in the older age group were better thinkers as they had better moral development and more opportunities to practice reasoning in different situations.

Through the health talks that were delivered to their patients, the 5 students had shown that, to a certain extent, they had applied thinking skills from the CoRT method which they had learned when they were given the critical thinking module. By asking their patients on the positive and negative aspects of their disease conditions, the students had an idea of how their patients managed themselves at home. This would help the students determine their patients' priorities as well as their own priorities in helping to fulfill their patient's immediate health needs such as remedial advice which could be given to them if they were found lacking in this aspect. Alder, Porter, Abraham and Teijlingen (2004) had considered this type of situation as a doctor-centred client care as opposed to a patient-centred approach. This is because by asking patients to share positive, negative and interesting aspects of their disease management, the students were able to understand and motivate their patients in order to encourage them to accept their disease in a more positive light. Any new information discovered from the interviews could also be used as a basis for further medical interventions for them.

9. Implication of the Research

One of the nurse's functions is to help patients learn and incorporate positive health-related behaviours into everyday life. Helping patients develop new behaviours regarding their health and lifestyle requires considerable expertise from the nurse which is lacking as most nurses have been inadequately prepared resulting in health education activities being carried out in a haphazard manner. Health education is limited to just mere rote-learning in that they repeat to their patients whatever standard health information specific to their disease is required.

The traditional approach to health education emphasizes mainly on physical aspects of ill-health which is reflected in the information base used which represents a highly limited medical perspective. The information is provided in the expectation of an orderly sequence from knowledge through attitudes to "correct" behaviour since human beings are rational beings. However, other social factors such as a person's freedom to choose their health related behaviour are not considered (Downie, Tannahill & Tannahill, 1998).

Therefore, this could have resulted in health education being perceived by the nurses as an activity separate from routine care which is of little significance. The lack of skills needed for teaching also contributes to haphazard efforts in delivering effective health education. Pre-prepared standardized teaching plans on the various disease conditions which may be outdated, are being delivered to patients on an ad hoc basis prior to discharge from hospital and do not cater to individual patient needs. Nurses do not have to empathize from their patients' perspectives since they have these

standardized scripts to read from. Once these "health talks" had been delivered, the nurse would consider herself to have carried out her health education nursing function successfully and the various factors such as family involvement, the patients' socio-cultural background and health beliefs, which are crucial in promoting patient compliance, would not be considered or were overlooked. If the nurse does not discuss the treatment regimen in the context of the patient's lifestyle, then according to Patterson, Thorne and Dewis (1998), the teaching is virtually useless.

The nurse teachers should realize and accept the fact that they have among others, the expert power, resource power and position power, to exert influence upon their students who are going to be future trained nurses of the country. Therefore, they play a very important role in the area of teaching health education to student nurses. However, these nurse trainers should be themselves knowledgeable and practioners of critical thinking. Understanding the theory of critical thinking would allow the nurse teacher to have a better perception of an argument as well as provide the nurse teacher with a foundation for explicit guidance and feedback on her students. The better the understanding, the more effectively the teacher will be able to think critically. If carried out often enough, arguments can be handled automatically and pervasively reinforcing his or her beliefs in critical thinking, as the key to mastering the skill of critical thinking is constant deliberate practice.

10. Conclusion

The use of critical thinking skills is essential when delivering health education to patients. The thinking skills that general nursing students have are inadequate to deliver effective health education for patients. Findings from this study indicated that though nursing students have their own thinking skills, it is not enough for them to give effective health talks. The critical thinking skills imparted to nursing students through a critical thinking module were practiced and applied when delivering health education. While consensus is agreed by all that there is a need for critical thinking among nursing students. The need for continued efforts and research in this area is evident.

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Table 1.T-test Results of Two Groups' Pretest Score Means

	Levene's Test for Equality of Variances		t value	df	sig.
	F value	Sig			
Equal Variances Assumed	.049	.825	257	82	.798
Equal Variances Not Assumed			257	82.000	.798

Table 2. Summary of Analysis of Covariance Results

Source	Type III Sum of Squares	df	Mean Square	F value	p value
Corrected Model	346.260(a)	23	15.055	2.758	.001
Intercept	195534.942	1	195534.942	35823.601	.000
Pretest	114.728	12	9.561	1.752	.078
Group	57.304	1	57.304	10.499	.002*
Group x pretest	77.420	10	7.742	1.418	.194
Error	327.496	60	5.458		
Total	339806.222	84			
Corrected Total	673.757	83			
a R Squ	a R Squared = $.514$ (Adjusted R Squared = $.328$);			g. at p<0.05	

Table 3. Univariate Analysis of covariance of the effects of experiment and control on participants' achievement

	Sum of Squares	Df	Mean Square	F	Sig.
Contrast	57.304	1	57.304	10.499	.002
Error	327.496	60	5.458		



The Study of University Students' Self-Concept

Xiaofeng Zhang

School of Sports Science, Qufu Normal University 57 jing xian Street, Qufu, Shandong 273165, China E-mail: zhangxiaofeng57@163.com Chengzong Li (Corresponding author) School of Education Science, Qufu Normal University 57 jing xian Street, Qufu, Shandong 273165, China E-mail:lichengzongaa@126.com

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Abstract

Objective: Discussed the development of self-concept of university students. Methods: Used "Tennessee Self Concept Scale (TSCS)", measured 426 university student's self-concept status. Results: In the dimension of physical self-ethics, self-criticism, self-satisfaction, there were gender differences in university students' self-concept. Males' physical-self, self-criticism and self-satisfied were higher than females', while females' ethics were higher than males'. When referred to social self-concept, there were special differences. Students majored liberal arts had a higher score than the students of science. There were also differences in self-criticism, for example, the home location, whether only child or not, and the grades. College students also had differences in grade. Conclusion: College students' self-concept developed to a relatively stable level in the university. Except for a noticeable difference in gender, only a certain dimensions were noticeable in other demographic variables, while self-criticism had remarkable differences in most of them.

Keywords: University student, Self-concept

Introduction

Self-concept is a belief systems, it is the multi-faceted, multi-level cognitive and evaluation of oneself and their relationship with his surroundings. It's a core part of personality. *W James* considered that anything belong to oneself or related to oneself are all contents of oneself. China's study on self-concept started in the 1980s. There were quite a lot of descriptive and theoretical studies, however, the survey researches were not enough, and the scope was still not on a wide range. This study used cross-sectional comparison to survey the development of university students' self-concept.

1. The Object and the Method

1.1 The Object

The study investigated 441 university students, they were all from the same city and were divided into subpopulations and random samples were taken of each stratum, with 426 valid questionnaires were taken back. Among all the students, there were 221 males and 215 females: 168 liberal arts students and 258 science students; 183 freshmen, 113 sophomores, 89 juniors and 41 seniors.

1.2 The Method

"Tennessee Self Concept Scale" compiled by the U.S. psychologist *H. Fitts*, Tennessee in 1965, and *Bangjie Lin*, came from Taiwan, and revised the third edition in 1978, which had 70 topics and ten factors, including two dimensions of self-concept and the integrated status. The initiating structure included: self identity (ID), self-satisfaction (SA) and self-behavior (B); the content latitude including: physical self (PH), moral ethic self (ME), personal self (PRE), family self (FA) and social ego (SO); and the integrated status including: total positive(TOT) and self-criticism (SC). The first nine factors scored higher, the more positive self-concept was; while the higher the score the self-criticism had, the more negative self-concept was. The split-half reliability of the scale was among 0.925 to 0.945.

The test made a class as a unit. The questionnaires were completed in the classroom within 20 minutes, and were recycled then and there. Removed the invalid questionnaires, 426 valid questionnaires were left. The recovery rate was 96.6%, and the statistical software SPSS11.5 was used to process and analysis the data.

2. Result analysis

2.1 The K-S test for self-concept

In order to test whether university students'self-concept obeyed normal distribution or not, K-S test was used as

non-parametric verify. The results was that university students' self-concept followed normal distribution (Z=0.692, p = 0.724). Further test shown that male (Z=0.488, p=0.971) and females (Z=0.781, p=0.575), which also followed the normal distribution.

2.2 Gender differences test in university students' self-concept

Test results of gender differences as table 1 showed: physical self (p <0.01), Moral-ethic self (p <0.05), self-criticism (p <0.01) and self-satisfaction (p<0.001). Males' physical self, self-criticism and Self-satisfaction was higher than females', while the Moral-ethic self was lower.

2.3 Profession differences in university students' self-concept

Test results of profession differences as table 2 shown: there were differences in social-self (p<0.05), and liberal arts students scored were higher than the science students', other dimensions without any differences. As a whole, the urban students scored higher than rural students.

2.4 Home location differences in university students' self-concept

Test results of home location differences as table 3 shown: there were differences in the self-criticism (p < 0.01). And urban students' scored higher than rural students', the other dimensions hadn't any differences.

2.5 Only child or not in university students' self-concept

Test results of only or not differences as table 4 shown: there were differences in self-criticism (p < 0.05), and the only-begotten students' scored higher than non-only-children, the other dimensions without any differences.

2.6 Grade difference in college students' self-concept

Test result of grade differences as the table 5 shown: there were differences between self-criticism (p < 0.05) and self-satisfaction (p < 0.05). Multiple-test results showed that in self-criticism, there were differences between the freshmen and sophomores (p < 0.01), while to the other grades, there had no differences. The junior grades different from others in self-satisfaction, they were in the highest level.

3. Discussions

K-S test results showed that the sample followed the normal distribution. It represented the current status of college students' self-concept. The results of this study showed that college students' self-concept is in the middle and upper levels compared with the results of other studies that were published, indicating that college students' self-concept was positive on the whole. An adult's personality was fairly stable(*McCrae & Costa*, 1994). And this stability signed that university students' pacifications of themselves was stable. In this period, self-concept had been basically stabilized, and they could easily accept the phenomenon that different situations could trigger different behavior and feelings. But important changes also taken place during this period. Specifically, there were higher scores in Moral-ethic self, family self and self-identity, which indicated that the moral ethic education for college students was quite successful. Most students had good moral standards, and majorities were quite satisfied with the background of their family. Their also had a strong sense of identification and self-esteem. Relatively speaking, college students had a lower evaluation on their physical self and personal self. They were not very satisfied with their performance and the self-regulated capability was weak. Thus, it was an important task of education to teach student to understand them, able to accept themselves, able to deal with their own strengths and weaknesses correctly and develop their self-control ability.

Self-concept differences of male and female students are mainly as the following aspects:

1) The males' physical self was higher than females'. First, may be males developed better motor skills. Second, it explained the physiological advantages that males had in this period. The social roles requested men to be powerful and career-driven; also, the females had a high expectation for male too.

2) When speak to Moral-ethic self, females' was better than males'. This was because the Chinese society had higher moral standards and request with women than men. Confucian moral ethic profoundly influenced on modern people's behavior. Society usually made more restrained demands for women on ethics and behavior. Compared to men, women suffer more restrict in ethics. Women didn't only have more self-discipline than men, they also had a better skill in introspection. Social and family lowered the expectations on women, which also declined women's society frivolousness and Psychological pressure. As a result, they could spend more time in communication. so male had lower self-evaluation in ethics than female, while at the same time, their ability to withstand setbacks was stronger, and they dare to face up to some weaknesses of their own.

3) Male university students scored higher than females' in self-criticism factors, and the difference was easily noticeable. It showed that male college students had lower appraisal on their own shortcomings and bad personality. On the one hand, they had the courage to criticize themselves; on the other hand, they had some problems of their own, and had a passive opinion of themselves, while females seemed to have higher demands on themselves.

4) Male had higher self-satisfaction than female, which explained that male were more better at accept themselves, this maybe due to their physical superiority and the more conducive situation to male as the sociality developed.

5) There were no significant gender difference in behavior, personal self, social self, family self and identification. It shown that there were no gender differences in college students' self-acceptance at the present, the psychological-assess of themselves, the sense of the value and the acceptance when contact with others.

There was only professional difference in the Social-self. The professional difference in the self-concept was weak and reached a stable level in the university time.

There only was urban-rural difference in the Self-criticism. Urban students' self-criticism was higher than the rural students'. Perhaps because those rural students studied more diligently than the urban's. They had a feeling of not letting their parents and themselves down. Other dimensionalities had no significant differences, may be because education developed as the national economic development, and rural students had similar resources in education as the urban students. Also, market economic conditions emphasis competition of personal capacity, which laid the foundation for students' self-affirmation, So the rural students' appreciation for Status of self, their evaluation with the ability and value were all roughly the same as the urban students.

There were only-children differences in the self-criticism. Only-child had higher self-criticism. Perhaps because they didn't treasure the favorable conditions which they already had, when they made reflection with themselves and they felt sorry for the hard work and expectations of parents, so did high self-criticism arise.

self-satisfied of junior was higher than other grades, which indicated that after two years studied in the university, students had been able to understand what they need and fully understand themselves and satisfy with their behavior. But when it came to senior grade, probably due to the pressure of employment, their self-satisfied were lower than other grades and appeared lowest of self-concept.

4. Conclusion

4.1 Self-concept of university students developed relatively stable level during the college period.

4.2 There were noticeable gender differences in self-concept, while only a few differences in other demographic variables.

4.3 There were self-criticism differences in the majority of demographic variables, indicated that it is important for the university students' self-concept, which should be guided and controlled.

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	male female		t
physical self	42.78±5.02	41.2±4.41	0.001**
Moral-ethic self	44.31±4.95	45.26±4.32	0.036*
personal self	41.32±4.73	40.7±4.15	0.154
Family self	46.51±6.38	46.68±5.49	0.766
Social self	42.24±6.13	41.58±5.49	0.239
Self-criticism	34.64±5.02	33.31±4.17	0.003**
Self-identity	91.56±8.80	91.73±7.54	0.83
Self-satisfaction	81.45±8.29	78.32±5.75	0***
self-behavior	78.7±9.07	78.67±7.83	0.896
total positive	251.79±22.50	248.73±17.78	0.12

Table 1. Gender differences test for Self-concept ($M \pm SD$)

Table 2. Profession differences of self-concept ($M \pm SD$)

	liberal arts students	science students	t
physical self	41.95±4.56	42.0±4.93	0.904
Moral-ethic self	45.26±4.59	44.48 ± 4.70	0.09
personal self	41.28±4.49	40.83±4.42	0.308
Family self	46.66±6.15	46.55±5.81	0.852
Social self	42.77±5.67	41.34±5.85	0.013*
Self-criticism	33.79±4.52	34.09±4.75	0.512
Self-identity	92.25±8.03	91.25±8.27	0.219
Self-satisfaction	80.07±7.17	79.74±7.37	0.647
self-behavior	79.39±8.19	78.3±8.61	0.195
total positive	251.71±19.81	249.29±20.57	0.23

Table 3. Home location differences in self-concept ($M \pm SD$)

	urban students rural stude		t
physical self	42.08±4.62	41.94±4.85	0.784
Moral-ethic self	44.75±4.56	44.8±4.71	0.918
personal self	41.05±4.26	40.99±4.53	0.902
Family self	46.88±6.12	46.48±5.87	0.526
Social self	42.74±5.86	41.56±5.78	0.058
Self-criticism	34.94±4.31	33.57±4.74	0.006**
Self-identity	92.66±8.15	91.23±8.17	0.101
Self-satisfaction	80.78±7.06	79.5±7.36	0.098
self-behavior	78.99±8.01	78.62±8.64	0.68
total positive	252.44±19.90	249.34±20.41	0.153

Table 4. Differences of only child or not in self-concept ($M \pm SD$)

	Only child	Non-only child	t
physical self	41.46±4.30	42.09±4.87	0.31
Moral-ethic self	44.25±4.71	44.9±4.65	0.285
personal self	40.53±4.22	41.1±4.49	0.317
Family self	46.57±6.54	46.6±5.82	0.97
Social self	42.49±6.27	41.79±5.73	0.355
Self-criticism	35.24±4.23	33.71±4.70	0.011*
Self-identity	92.04±8.89	91.56±8.04	0.653
Self-satisfaction	80.44±7.53	79.75±7.24	0.465
self-behavior	78.04±8.09	78.87±8.53	0.451
total positive	250.53±21.51	250.19±20.06	0.897

Table 5. Grade difference in self-concept ($M \pm SD$)

	Freshmen	sophomores	Juniors	seniors	t	Noticeable
						differences project
physical self	41.85	41.53	42.75	42.12	0.324	
Moral-ethic self	44.85	44.57	44.76	45.15	0.912	
personal self	40.95	40.63	41.46	41.32	0.581	
Family self	46.14	46.72	47.56	46.17	0.3	
Social self	41.75	41.8	42.47	41.68	0.785	
Self-criticism	33.36	34.88	34.26	33.56	0.044*	1<2**
Self-identity	91.58	91.21	91.96	92.44	0.841	
Self-satisfaction	79.16	79.2	81.94	79	0.022*	1<3**;2<3*;3>4*
self-behavior	78.16	79.2	79.37	78.56	0.635	
total positive	248.91	250.12	253.27	250	0.427	



Influences of Teacher Preparation Program on Preservice Science Teachers' Beliefs

Prasart Nuangchalerm & Veena Prachagool Department of Curriculum and Instruction, Faculty of Education Mahasarakham University, Mahasarakham 44000 THAILAND E-mail: prasart.n@msu.ac.th

Abstract

Teacher preparation program is routinely make decisions regarding the best pedagogical methods from field experience studies, it can alter students' understandings about academic content and some characteristics through professional practices. This study tries to investigate the extent to which individuals learning to be teachers feel what preservice teachers are capable of performing the pedagogical practices. Sixty seven preservice science teachers were described the influences of teacher preparation. Results indicated that preservice teachers enrolled in professional experiences courses perceived themselves as less capable of performing persuasive pedagogical practices than more generally accepted practices. In addition, preservice teachers perceived they were more capable of altering students' knowledge about content than at modifying their beliefs about content. Implications for research and practice are forwarded.

Keywords: Professional experiences, Preservice teacher, Teacher preparation, Professional practice, Teaching practicum, Student teacher

1. Introduction

Teacher preparation and development acts as a major role in the way of growing up quality of education. The teaching professional experiences, arguably the most powerful influence in teacher education (Bullough *et.al.*, 2002). Teacher preparation has been continually searching for the best possible ways of preparing teachers in the future. It is increasingly urged to focus on way of developing education quality through teacher preparation program. The concept of teaching professional experiences recognizes preservice teachers as key elements in their own professional growth, role of model, knowledge constructors and distributors, and agents of change in students learning behaviors (Cochran-Smith and Lytle, 1999; Darling-Hammond, 1994).

Classrooms are complex systems where many factors influence student learning (Lampert, 2002). Science teacher is an essential person in structuring and guiding students' understanding of living in the changing world. They play a role as facilitator and helper students to bridge between nature of science and inquiry practices. They also need to learn new ways of pedagogical sciences to promote scientific literacy based on inquiry-oriented classroom. In the correlation of scientific literacy, teacher preparation program need to address what they should believe about science. As responsibility of science do, preservice science teachers can help their students to meet real science by leading evidence-based and explanation-based ideas (Driver *et. al.*, 2000; Duschl and Osborne, 2002).

The importance role of teacher preparation program is at least prepared teacher for most needy children in the most difficult circumstances (Darling-Hammond and Baratz-Snowden, 2007).

• As a society, we do not invest seriously in the lives of children, most especially poor children and children of color, who receive the least-prepared teachers.

• The conventional view of teaching is simplistic: teaching is viewed merely as proceeding through a set curriculum in a manner that transmits information from the teacher to the child.

• Many people do not understand what successful teaching requires, and do not see teaching as a difficult job that requires rigorous training.

• Others believe that there is not much more to teaching than knowing the subject matter that children should learn.

• Many state licensing systems reflect these attitudes and have entry requirements that lack demanding standards, especially for teachers who teach poor and minority students.

• Researchers and teacher educators have only recently come to consensus about what is necessary, basic knowledge for entering the classroom and how and when such knowledge and skill should be acquired.

Increasingly, the questions of teaching quality are posed regarding to the content of teacher education program, knowledge and necessary skills required, and expected tomorrow teachers (Pultorak, 1996). The framework for preservice teacher reflection based on cognitive apprenticeship, interpersonal skills, collaborative problem-solving,

coaching and supervision, which served as a beginning for professional experiences (Campbell-Evans and Maloney, 1997; Mitchell, 1996). Real school situations where empowering preservice teachers have proven successful and provide a basis for further guidance. Teaching is perhaps only activity where preservice teachers bring with them a history of observed practice. They must be given the skills and knowledge to develop a pedagogical content knowledge, to critique practice and challenge traditional pedagogy.

As a major role of education development, the faculty of education, Mahasarakham University has been responsible for serving learning community, engage student of learning society in regional services, produce teachers and person relevant to educational services. The partially goals of us, teacher preparation program needs to have fulfillment in content, responsibility, moral, ethics, and skills. Such a conceptualization is in direct contrast with more traditional views of learning to teach (Britzman, 2003). The study aims to explore the reflection on professional experiences of preservice science teachers and what they belief about science instruction. The result of study can help educators prepare the professional experience environments, allows them learn how to be a good teacher, reflect needs of learning support in school science, and some criteria for teacher preparation.

2. Methodology

The 67 preservice science teacher participants in this study were enrolled in a five-year teacher education program faculty of education, Mahasarakham University. Program course work included a year-long methods course in which participants were exposed to instructional strategies, inquiry-based teaching, including models of teaching. The participants were undergraduate students in their fifth year of study enrolled course 0506509 Instructional Practice in School 1. They spent 4 months for learning what science teacher do in school. None of the participants had prior formal teaching experiences. Each preservice science teacher was required to develop and implement at least twelve-hour unit of instruction in school science. The unit of instruction consisted of a series of interconnected lessons focusing on a general topic selected by the preservice teacher and cooperating teacher. The input of the cooperating teacher and university supervisor was assessed.

In order to investigate the relationship between preservice teachers' beliefs of professional experiences program, researchers engage preservice teachers write documents and interviews. The instrument was designed to assess the preservice teacher beliefs with regard to *professional experiences preparation program, school context, cooperating teacher, instructional innovation, classroom research, and supervision*. When this course time out, preservice teacher come to university to clarify what are problem and need during professional experiences. The phenomenological case study design was preferred. Researchers emphasizes on inductive of data as well as subjects' belief and express ideas what preservice science teachers constructed of their own professional experiences. Also, scientific inquiry practices and belief on science were generalized. Data were collected by using qualitative questionnaires and deep listening. They discussed and sharing beliefs about what science teaching should be.

3. Results

Preservice science teachers reflect their own beliefs and perspectives on teacher preparation program. Most of them provided beliefs about science teaching in a various kind of school contexts. They had learned how to prepare learning scientific inquiry based on variety of methods. Also, they know and understand the entire concept that can help them to consider. However, several preservice teachers acknowledge difficulty in giving an opinion about professional experience issues due to lack of information, and some actually experiences for the school science.

3.1 Teacher preparation program

The concept of teacher preparation program was addressed in terms of cooperating school and university professional experiences unit. Preservice science teacher need to have clarification on their role in school, evaluation can be understandable, easy to access information on teaching practicum, and teaching fund during professional experiences.

The beliefs of preservice science teachers on teacher preparation program, they generated ideal practicum is in highly expectation. Sixteen weeks of practicum is running, they exposed many school experiences. They can be respond preparation program in terms of instructional management in such different beliefs. The findings can be explained as follows.

"I think this program should be prepared suitable instructional materials and also school and university should provide clearly criterions for coping student experiences"

"It is not surprised when I made a calling to university professional experiences unit for asking some problem that we faced in school, but staff is always busy and no less time to response"

"I believed that teaching profession is good for me, but when professional experience conducted, I am not sure it is suitable for me in the occupational future. I need more information on professional experiences and perceive clearly concept of teacher preparation program"

It can be considered that professional experiences changes their attitude towards teaching profession, they undertake different sense in different school context. Some cooperating teachers ignore his/her role to this program, and also some of them don't care about deep listening on preservice teachers' reflection. The finding also indicate that lesson plans are very important for them to learn more and more, they love to meet cooperating teacher in way of teaching management.

Some of those preservice science teachers reflect on working behavior of cooperating teacher. They believed that mentoring can help them learn how to manipulate classroom. But, they are not quite sure that cooperating teacher believes in their own ideas and competency. However, they are ready to have suggestion on instructional strategies and accept some characteristics to be role model.

The criteria for selecting cooperating school are one thing that university should be concerned. If school had no quality and not ready to accept preservice science teachers gaining experiences in school science, university should have way to solve i.e., school should close to community, school can support money during they do professional experiences. Faculty of education and cooperating school should be informed about professional experiences plan and school details in updatable. Also, university instructor should have schedule for proposing lesson plan, it will allows time to prepare and consider the effective scientific thinking as be shown in lesson plan.

3.2 School contexts

The faculty of education provides preservice science teachers to have learning opportunity on teaching profession. It can be generalized that theoretical and practical pedagogy should be concurrence. Preservice teacher spent time duration at school, it can be influenced their beliefs on educational views and change their attitude towards profession. The school context is a major role that changes their view on school science. They found that some schools are facing social problem, student behaviors, instructional media and support, working place and task, and nature of school.

They raise some problem in school context, it change their belief on teaching profession in terms of theory and practice. They found that university classroom put them many learning theory and pedagogical strategies. Most theory is emerged from field study and classroom observation. Now, they are taking responsibility to do science in school, it seems to them that real classroom is very different from those university lectures.

The real school context is not frequently relevant to expectation. They expressed beliefs in terms of school change that adapt through social change. Some preservice science teachers addressed their experiences in school practicum as follows;

"School is very old and ruin, instructional materials and learning media are not sufficient and unsuitable for science classroom"

"School personnel took working task overload, and then make school atmosphere no need cooperative doing in science education"

However, preservice science teacher can be understandable that school context cannot be changed; it is large movement to do so, they think, they have to change themselves and adapt their working behavior to serve school culture. Preservice science teachers need to gain more knowledge and understanding in terms of school culture.

3.3 Learning innovation in school science

Preservice science teachers described their own professional experiences that professional experiences as a first chance transferred pedagogical theory into practice. Most of preservice science teacher had misconception on learning innovation; they think that material, media, and classroom facilities are innovation. They didn't think instructional model, pedagogical strategies, instructional media, and so on are innovated for school science. When we raised what learning innovation is.

Preservice science teacher raised the issue on learning activities. The 5e instructional model can be generalized in science classroom. They had too much misconception on innovated classroom. Also, demonstration method is more effective in case of poor school. School culture taught science based on IPST manual guide. The 5e instructional model is always promoted in every science hours.

"School no need change on inquiry-based teaching, teachers preferred 5e instructional model and decided to engage their students by traditional method even though education change"

Scientific knowledge is produced every day, but school didn't change method to engage their students acknowledge science. Cooperating teacher didn't learn new ways to improve science teaching, when preservice science teacher had a chance to teach science, preservice science teacher believe in their own ideas and competency. So, this finding indicated that professional development is needed.

3.4 Education research and professional experiences

In case of conducting educational research, preservice science teachers were assigned to do research based on science classroom in different school context. They had coopering teacher a research mentor, generate ideas to do research, and

advise to do research are concerned. The professional practice study indicated that most cooperating teacher ignores research and also good research cannot be done.

"Cooperating teacher had no experiences of educational research, when I meet and ask for suggestion, he/she cannot be initiated research on science education or science teaching"

Most of cooperating teacher aware mostly in teaching environment than those educational researches based on their teaching class. This reason can be explained that preservice science teacher also cannot allow doing a good research in science education. It can be influenced to preservice science teachers that they don't like to do a research or think research is hard and far to reach. Not only cooperating teacher, but also attitude towards research conduction is not engaged. They indicated that educational research was exposed when they studied in the fourth year.

"I think educational research is very complex, the teacher preparation program should not assign because just only teaching and working task in classroom is overload. I need no to do a research during professional experiences"

The finding is also revealed that assignment preservice science teacher to do research is far way from their thinking. Most of them belief that no relationship between research and teaching. In this case can be decided that preservice science teacher had misconception to do educational research. Some preservice science teachers ignore and stand opposite of educational research. The faculty of education should provide them all about pedagogical technique and how to do educational research as relevant to filed of their studies. Preservice science teachers need to gain more knowledge and understanding in terms of educational research. In addition, school science might want to have doing research atmosphere to fulfillment in doing research.

Supervision is necessary for professional experiences, they need supervisor and cooperating teacher provide them how to do a good research. They need more time to discuss on teaching classroom and conducting educational research that school network and university should know and concern. However, university studying time should be incorporated research at least one research project a year. It can help student to imagine what educational research is and it cannot be separated teaching class.

4. Discussion

My desire is to create opportunities for students to have meaningful professional experiences with real school context after they had learned too much theory from university. The classroom culture with all its limitations remains a location of possibility for students as well as for research and teaching of preservice science teachers (Larson, 2008). Teacher preparation program need to be explained based on the differences between possibilities. Preservice teacher might want to have learned how to teach science in the age changing world. Chong and Cheah (2009) reported that preservice teachers acquire their proficiency and competence in teaching. They have inherently generic structures and the expectations of teacher performance they establish are for all classrooms in all educational contexts. But the reality of teaching can be very different. It is impossible for teacher education programs to prepare teachers for all situations. Therefore, it is important that beginning teachers are willing to learn from their experiences in changing circumstances.

The professional experiences needs to be developmental in approach, achieve on the learned skills, knowledge and attitudes towards science. The faculty of education should be aiming to develop student's responsibility for their own professional development (Nuangchalerm, 2009). The extension of the goals into professional experiences will be of benefit in the future. The studies led to initial observations that preservice science teacher have to practicum in one year school science. The coaching and supervision are important things that provide positive encouragement to the idea of reflective practice during teaching practice. The professional experiences reflect practice through mentor and supervision, school discussion based on problem-solving in different contexts can promote interpersonal quotient (Pence and Macgillivray, 2008).

Helping preservice teachers' understand the rationale behind why a particular inquiry-based practice is important in science may result in students being better able to complete a performance. Crawford and others (2000) argues that one of the key characteristics of a teacher establishing an inquiry-based learning environment. It can help students learn new things through inquiring mind and seems to scientists do. This will help students understand that the ways of talking and thinking in science is different from those in students' everyday experiences.

In case of conducting educational research through teacher preparation program, the findings pointed that most of preservice science teachers need to fulfill concept and practical guide about educational research. It seems to preservice teachers that they need to provide explicit instruction and research. Also, they need to learn the differences between students' everyday discourses and scientific discourses based-on research methodology (Lee, 2004). The faculty of education should structure teacher development by promoting research-based teaching into education course based on possibility and reflect their ideas in science teaching and of science education research.

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Professional Piano Education in Chinese Piano Music Culture

Changkui Wang Art Department, Normal College of Shenzhen University Shenzhen 518060, China Tel: 86-755-2653-6309 E-mail: wangchangkui@163.com

Abstract

The development of Chinese piano music culture including professional piano education is based on the traditional culture of "neutralization", and in the researches about the professional piano education in the 21st century, the research of the piano teaching in normal colleges is the most active one, and it is mainly centralized in the piano teaching reform, the teaching mode, the vamping, the teaching materials and teaching methods. In this article, above aspects are classified and analyzed, and the future development direction of the piano teaching research in higher normal colleges in the 21st century is discussed, and it should be studied more seriously.

Keywords: Chinese piano, Professional education, Music culture, Teaching research

1. Literature review of the researches about Chinese piano music culture

Chinese piano music is studied in the view of the culture in this article, and the research contents include Chinese piano music art (including creating and acting), Chinese professional piano education (including music art colleges and higher normal colleges), theoretical research of Chinese piano music, idea of Chinese music culture, Chinese piano manufacture. Since 1980s, the comprehensive theoretical researches about Chinese piano music culture mainly include most literatures of Chinese modern times music history about Chinese piano music and most papers and literatures of the special research about Chinese piano music culture. Wei Tingge's paper in 1983, "The Development of Chinese Music Creation", was the first paper to study the development of Chinese Piano Art", was the early paper about the theoretical research of Chinese piano music in China. In 1996, Bian Meng's book, "The Formation and Development of Chinese Piano Culture", was the first work to systematically study Chinese piano music culture in China. Feng Xiaogang's paper in 2007, "Chinese Piano Music in the Half of the 20th Century", was the most comprehensive research result to study Chinese piano music culture at present. In 2009, Wang Changkui's work, "Chinese Piano Music Culture", is the last work to generally summarize Chinese piano music culture based on numerous domestic scholars' research results.

In this article, Chinese piano music and its professional education are studied as viewed from the culture, which produces special results, i.e. the development course of Chinese piano music culture is supported by Chinese traditional culture and dynamic western and eastern cultures in certain period, and Chinese piano music culture has obvious characters of cultural orientation such as "neutralization", "femininity" and "verve", and it is the result that western and eastern cultures reflect each other. This cultural orientation will certainly influence the development of Chinese piano music culture including Chinese professional piano education, and deeply inspire the cultural orientation of the piano music in the 21st century.

2. The orientation of Chinese piano music culture: neutralization

The original meaning of "He (Chinese, neutralization)" includes two aspects, and the first one is "seasoning", and the second one is "mixing voice". In the book of "Zhong Yong (Chinese, moderation)", "Provided that is properly positioned under heaven, all things will grow and flourish". Zhu Xi explained that "Zhong is the meaning of 'even-handed', and Yong is the meaning of 'usual". The philosophies including Confucian, Taoism and Buddhism which represent the most essential and deep Chinese cultures are connected with the music culture, and this association point is the core theory in Chinese traditional cultures, neutralization (Wang, 2009, *Social Sciences Review*, No.7). As viewed from the philosophical meaning and music aesthetics of "neutralization", the neutralization of Confucian, the "Wu (Chinese, nothing)" of Taoism and the "Kong (Chinese, empty)" of Buddhism all accept the cultural concept of "neutralization", and the cultural ideal of "neutralization" always exists in the development course of Chinese piano music culture, and it is the core cultural orientation of Chinese piano music.

3. Development track of Chinese piano music culture

Chinese piano music culture has experienced following six development stages (Wang, 2009, Chinese Piano Music Culture).

Before 1919, when the "Peace March" created by Zhao Yuanren was published in the Science Magazine of 1914,

Chinese piano music culture begun to bud. To imitate and spread European music culture was the main cultural orientation in this stage.

From 1919 to 1937, when Mr. Xiao Youmei established the music department of Beijing Higher Normal School, the Music Practice Situation of Beijing University, the music department of Beijing Art Professional School and Shanghai State Music College, the music colleges which gave priority to European music system had been founded. He Lvting's "Cowboy's Piccolo" and other six works won prices and explored the "neutralization" style combining Chinese style with European music theories and piano playing techniques, which was the mainstream of Chinese piano music culture in this stage.

From 1937 to 1949, the piano music branded the sign of the war.

From 1949 to 1966, nine music colleges and about hundred normal colleges established their piano departments in China, and the Shanghai Music College and the Central Music College centralized the most excellent first generation piano professors, and there were 18 persons to win a prize in international piano competitions. The government highly emphasized the construction of the music department in higher normal colleges, and the piano became the main lesson for normal schools. The flourish of the piano music culture was the cultural mapping that Chinese traditional culture "connected with the politics".

From 1966 to 1976, the culture of "unification" was the only cultural orientation of the piano music. The professional education of piano in the whole country was in the status of stagnancy and regression, and the most special phenomenon appeared in the history. However, the spread of "The Red Lantern" accompanied by the piano made billions of Chinese people to know the "noble musical instrument" which they never saw, and because of that, the piano concerto "Huang He River" became famous in the whole world. The piano music recomposed by national instrumental music by Chinese composers artistically presented the cultural orientation of Chinese music aesthetics idea such as "harmony between man and nature" and "neutralization, esteeming human being and nature".

From 1977 to now, multiple cultural concepts made Chinese piano music culture to present historical pomp. The creations of piano music flourished unprecedentedly, and the professional piano education, the social piano education, the piano manufacturing, and the piano performance were in the best development stage in the history. Chinese piano music culture presented multiple and international situation that the government functioned well and the people lived in harmony, and the time endows the new cultural meaning to "neutralization".

In the tracks of the development of Chinese piano music culture, the cultural orientation of piano music has obvious commonness and continuity. The commonness was that Chinese piano music culture always harmonized, incorporated, but differed with western piano music culture by the form of "neutralization", and when Chinese piano music culture integrated with western music culture, Chinese piano composers and educationists kept the cultural consciousness of Chinese traditional culture.

4. Actuality and thinking of the theoretical researches about Chinese professional piano education

From 1920s, Xiao Youmei founded the initial music institutions of China, which adopted European professional piano teaching piano teaching plans, teaching materials, modes, and methods. In 1950s, based on European piano music teaching system, these music institutions adopted the style of Russian piano school, but the piano culture communication had not been opened in non-socialism countries. After 1980s, the professional piano education presented the status of opening, and on the one hand, the professional piano education accepted foreign piano music cultures by wide "neutralization" spirit, and on the other hand, combining with Chinese teaching practice of the piano education of "unity without uniformity".

4.1 Theoretical research results of Chinese piano music teaching

Liao Naixiong's paper, "Several Basic Stages in the Piano Teaching (1979)", was the first work to study Chinese piano teaching, and Ying Shizhen's "Piano Teaching Methods (1990)" was the first theoretical work about the piano teaching, after that, many works such as Situ Bichun's "Teaching Method of Piano (1999)", Zhan Jianguo's "Guidence of Piano Base Teaching (2004)", Dai Baisheng's "Piano Teaching Methods in Normal Colleges", Fan Hexin's "Theory of Piano Teaching (2006)", Jinying's "Teaching and Performance of the Music of 'Basic Tutorial of Piano", Liu Qinggang's "Yangjun Piano Teaching Art Theory (2007)", Huang Dagang's "Zhou Guangren Teaching Art (2007)" occurred one after another. Fan Hexin's "Theory of Piano Teaching (2006)" of China College of Music was the most profound and applied work to study the teaching rules of piano from the angles of the education and the psychology. In Feb of 1996, the magazine of Piano Artistry started publication, which indicated that the theoretical research of Chinese piano music entered into a new historical stage, and the good research environment of Chinese piano music had been established basically.

4.2 Review and thinking of the theoretical research about Chinese piano music teaching in normal colleges since the 21st century (Wang, 2008)

In the professional piano education researches in the 21st century, the piano teaching study of higher normal colleges flourishes most. From 2000 to 2008, the research results of the piano teaching in normal colleges are classified and analyzed as follows.

4.2.1 Academic backgrounds

In 2000, the "Symposium of the Reform of Piano Teaching in Normal Universities" was convened in Beijing, and in 2004, the "Proseminar of National Forum on Piano Teaching in the Tertiary Educational Institutions" was held in the Capital Normal University (before the piano academic committee was founded, the piano teaching academy of Chinese Music Association had actively developed many academic activities), and in 2006, the "Academic Proseminar of National Higher Music Educational Lessen Development and Teaching Study" was held in Northeast China Normal University which also held the "2nd Proseminar of National Forum on Piano Teaching in the Tertiary Educational Institutions" (Xiao, 2006). The proseminar of 2006 was the vane of the research depth and width of piano teaching in higher normal colleges in China.

4.2.2 Research of the piano teaching reform

In the Symposium of the Reform of Piano Teaching in Normal Universities of 2000, Zhou Guangren said that the piano teaching target in normal colleges should be "expert in one thing and good at many", but Wei Tingge thought that "the cultivation target of the music education in normal colleges should be 'expert in many things and good at many', and "good at many but not one is professional" should not be the final 'qualified product' in normal colleges". Ma Xiaohong said that the comprehensive lesson system of piano art in normal colleges taking the song accompaniment as the core, and the piano history lesson as the theoretical guidance. Situ Bichun thought that the masters of piano in normal colleges should emphasize the theoretical learning and study about the "History of Piano Art", the "Teaching Method of Piano", and the "Vamping Art of Piano", aim at the target of "teaching style", and grasp the applied talents combining with lesson setup, thesis writing, and educational practice. Du Sichun thought that the piano teaching should emphasize to study the piano music culture which was the topic that few scholars studied in the piano teaching of normal colleges.

4.2.3 Researches of the piano teaching mode and the collective lessons

In 2000, Hulv's article, "Piano Teaching Mode in Normal Colleges (Explorations in Music, No. 2 of 2000)", was the early attempt for the teaching mode in the new century. Helv thought that the causes of the reform of piano teaching mode in normal colleges included the special situation that the teaching resource was seriously deficient because of the admission expansion and the requirements of the cultivation in normal colleges, which were objective. He pointed out that the piano theory course, the piano collective course and the piano appreciation course should be established. By Gardner's multi-intelligence theory, Wang Yihong tried to teach the piano collective course from new angle through the application of multi-intelligence theory in the piano collective course of normal colleges, which brought new research view and revelations. Yang Jing thought that the digital piano teaching system was the product of the piano with modern high science and technology, and it was a new teaching concept and school-teaching mode, and it combined organically with the knowledge of other subjects, and strengthen the transverse association and cross integration among different subjects.

4.2.4 Research of the piano vamping

In the Symposium of the Reform of Piano Teaching in Normal Universities of 2000, scholars generally thought that the eligible vamping teachers should be first cultivated first, and then the accompaniment teaching materials should be perfected. Wei Tingge proposed opposite opinion, i.e. "the vamping can not be taught actually, and only the piano technique and melody composing can be taught", and the symposium disputed about this opinion. Zhang Hui emphasized to introduce "non-teaching factors" in the teaching course, and break the traditional teaching mode give priority to instruction in classroom, and adopt the introductory and heuristic teaching method was the effective mode in the accompaniment lessons. In the article of "Piano Vamping Learning Strategy in Normal Colleges (People's Music, No. 1 of 2007)", Jiang Ying thought that "the vamping ability which can exactly and quickly present the music in the music lesson of middle school is the most important ability of music teachers, and it is the first factor in teaching and examination, so the training of vamping lesson in normal colleges should surrounding these three emphases". This opinion really reflected the key of the vamping lesson, and the colleges should cultivate music teachers' vamping ability.

4.2.5 Researches of the piano teaching materials and methods

The lesson of "Piano Teaching Methods" in normal colleges is new lesson since the 21st century, and the relative researches are still in the initial stage at present. In Academic Proseminar of National Higher Music Educational Lessen Development and Teaching Study of 2006, Wang Changkui proposed that the pyramid teaching mode design theory of

the lesson of "Piano Literatures and Teaching Methods" in normal colleges (Xu, 2007), and Ma Tanghua thought that the lesson of "Piano Teaching Methods" gave priority to the teaching of theoretical knowledge sometime in the past, which was hard to stimulate and adjust students' emotions and enthusiasms, and the students in normal colleges should study in practice. Since the 21st century, the researches about the piano teaching materials in normal colleges are deficient, and they often occurred by the form of introductory article.

5. Conclusions

For the research contents, above research results relatively follows the step of education reform with certain influencing power, but they can not deeply influence the research width and depth of teaching materials, teaching methods, teaching of Chinese works, and basic teaching. For the research methods, above results mainly adopt the method of experience summarization which is feasible and applied, but the empirical method was rarely applied, and some researches lack in believable data, and the proofs are not sufficient. For the research view, the comparative researches between Chinese and foreign piano teachings in normal colleges are deficient. And the new views are deficient, and few researches are based on the views of aesthetics, philosophy and cultures, and the academic depth should be further strengthened.

To future piano teaching research of normal colleges, the piano teaching materials and methods, and the teaching of Chinese piano works should be strengthened, and the multi-culture music opinion should be established, and the contents and range of relative researches should be developed, and the view of multi-music culture should be adopted to obtain new valuable orientation on deeper layer of the piano teaching research of China by the cross research of multiple subjects such as the modern education, psychology, sociology and cultures.

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The Effectiveness of Conflict Maps and the V-Shape Teaching Method in Science Conceptual Change among Eighth-Grade Students in Jordan

Ali Khalid Ali Bawaneh (Corresponding author) School of Educational Studies, Universiti Sains Malaysia Minden 11800, Penang, Malaysia E-mail: ali_bawaneh@yahoo.com Ahmad Nurulazam Md Zain School of Educational Studies, Universiti Sains Malaysia Minden 11800, Penang, Malaysia Tel: 60-4-653-2971 Fax: 60-4-657-2907 E-mail: anmz@usm.my Munirah Ghazali School of Educational Studies, Universiti Sains Malaysia Minden 11800, Penang, Malaysia

Tel: 60-4-653-2576 Fax: 60-4- 657-2907 E-mail: munirah@usm.my

Abstract

The purpose of the present study is to investigate the effectiveness of Conflict Maps and the V-Shape method as teaching methods in bringing about conceptual change in science among primary eighth-grade students in Jordan. A randomly selected sample (N=63) from the Bani Kenana region North of Jordan was randomly assigned to the two teaching methods (Conflict Maps, N=31; V-Shape, N=32). A conceptual multiple-choice test was developed to measure misconceptions regarding electric energy commonly held by eighth-grade students. The data gathered were statistically processed using SPSS software. The results indicated that both methods, Conflict Maps and the V-Shape method, were successful in bringing about conceptual changes in the students. At the same time, the results did not prove either method to be superior in facilitating conceptual shifts regarding electric energy in eighth-grade students. In light of earlier results, this study recommends that curriculum developers take into account teaching methods designed according to conceptual change models and organize training workshops for teachers to learn how to integrate Conflict Maps and the V-Shape method into their teaching. Furthermore, this study recommends that similar studies be conducted with various subjects.

Keywords: Conflict maps, V-Shape, Scientific teaching method, Scientific conceptual change, Science teaching.

1. Introduction

Scientific advancements in recent years have made integratinging knowledge in detail difficult. In response, science curriculum developers have focused their attention on the very basic principles of science (Abdussalam, 2001), where concepts play a significant role in organizing experiences, recalling knowledge, tracking concepts, linking concepts with their sources, and facilitating concept retrieval (Tayim, Shamout, and Zaitoun, 1984). Al-Aani (1996) argued that learning scientific concepts makes understanding science easier and clearer. Rutherford (1990) emphasized the importance of concepts in scientific understanding and communication, to the degree that concept learning has become a major educational objective at all education levels (Nussbaum, 1989).

The National Science Teachers Association (NSTA, 1982) has identified a scientifically educated person by their ability to use scientific concepts. Similarly, the American Association for the Advancement of Science (AAAS, 1998) recommends focusing on understanding scientific principles and concepts. Along these lines, many educators (Wandersee, Mintez, and Novak, 1994) have become very interested in scientific concept-building processes, which form the core of the science teaching-learning process.

Despite the perceived importance of learning scientific concepts, the related literature typically reports a serious problem faced by students who arrive at school with many concepts that are inconsistent with established scientific knowledge; these are typically referred to as misconceptions or alternative concepts (Lewis & Linn, 2003; Blosser, 1987; Jaber, 2004). Results from an AAAS study revealed many difficulties in learning scientific concepts, and many high school graduates are unfamiliar with basic scientific concepts (The American Association for the Advancement of Science AAAS, 1989). Similarly, results from the third international study in mathematics and science reported

indications that students lack a well-established understanding of scientific concepts (National Research Council, NRC, 1996).

Publications by the Jordanian Ministry of Education have revealed that misconceptions are widely held by Jordanian students (Al-Massad, Alabdallah, & Mdanat, 2002). This result is supported by many studies (Al-Khalil; 1998; Al-Shorman, 2000; Jaber, 2004, Bawaneh, 2004; Baz & Bawaneh, 2008). Results from the third international study, conducted in 1994–1995 with an international sample of primary eighth-grade students, revealed the prevalence of misconceptions in science and mathematics, where physics was the field in which the majority of the scientific misconceptions were held (Al-Massad et al., 2002).

As misconceptions commonly held by students at various school levels impede their learning of new scientific concepts, it is necessary to change these misconceptions, and thus, many strategies and models have been suggested for this purpose. For example, Al-Khalili, Haidar, & Younis (1996), Zaitoun (2002), and Tsai (2003) summarized the mechanism by which cognition is built and how cognitive balance is created in one's mind; they drew out this mechanism depending on the cognitive learning theory that emphasizes mental processes taking place in the learner's mind through:

Assimilation: the learner makes changes to the cognitive environment to fit his or her cognitive construct, and

Accommodation: the learner changes his or her cognitive construct to fit the environment

Among conceptual change models, Posner's model was the most significant (Posner, Strike, Hewson, Gertzog, 1982) and included four conditions:

Dissatisfaction: refers to a student being dissatisfied with his or her conceptual constructs or with "alternative concepts" that fail to explain the phenomenon encountered

Intelligibility: refers to the clarity of a new concept so that it is principally understandable and believable

Plausibility: refers to the plausibility of a new concept to be linked with previous knowledge networks and employed in resolving problems in which previous concepts fail, and

Fruitfulness: refers to the meaningfulness of a new concept and how effective it is in leading to new fields of inquiry

Clearly, the four conditions proposed by Posner and colleagues are sufficiently elastic to facilitate conceptual change because they did not identify strict roles to be assumed by learners or teachers, nor did they advise any specific teaching method. This, of course, encouraged researchers to use Posner's model in building teaching methods based on the constructivist approach for restructuring concepts, bringing about conceptual change, and assigning specific roles to teachers and learners. For instance, the conceptual conflict approach presumes conflict between two conceptions: one already established in a learner's cognitive structure and a new concept based on mainstream scientific principles. This conflict is resolved when the student realizes that s/he holds a misconception (Shihab, 2004). Another teaching method is the V-Shape method, which outlines the interaction between the conceptual constructs of a discipline and its procedural constructs (Novak & Gowin, 1995); the events and objects exist in a V-shape intersection where cognitive constructs emerge.

2. Conflict Maps

Tsai (2000) proposed a conceptual change strategy, called "Conflict Maps," that is based on Posner's conditions and is represented by a series of critical or conflicting events that relate to an accurate scientific concept. Conflict maps help students search for the balance between the conceptual schemes already held and perceivable facts in the environment. The teacher's role is to create conceptual conflict around the alternative concepts held by students by presenting them with a situation in the environment that contradicts these concepts. Without being given an accurate answer, students are then required to work in small groups on conflict-resolving activities, recording experimental results and constructing possible explanations. The teacher will then present students with new ideas derived from the conflicting event. At this stage, an accurate scientific concept is presented instead that the new concept is offered to students to replace their misconceptions Students will therefore work in small groups to reach accurate explanations of the given scientific concept. The teacher reinforces the accuracy of scientific explanations for students by presenting major concepts related to the specific scientific concept and supporting it with other scientific principles that are more practical and that are associated with the environment.

Figure (1) shows that the use of conflict maps should resolve two conflicts during the process of conceptual change, as supposed by Hashweh (1986); the first is the conflict between the new concept and the older one held by the student as an alternative concept; the second conflict is between the student's alternative concept and the accurate scientific concept (Tsai, 2000; Tsai, 2003).

2.1 Using conflict maps in conceptual change

Science teachers and educators can build their own conceptual map, as proposed by Tsai (2000) (see Figure (2)). As shown in Figure (2), Posner's first condition for conceptual change occurs with the Discrepant Event (D.E.) or

Discrepant Concept (D.C.) in the conflict map. The second condition occurs with the Targeted Science Concept (T.S.C.), whereas the third condition occurs with the scientific concept related to the Critical Event (C.E.). Other ideas related to the scientific concept would correspond to the fourth condition, so that the conflict map will become compatible with the final conceptual constructs at which this process aims (Tsai, 2000). The use of conflict maps clearly enhances conceptual change among students because of the strong coherence between such maps and the conceptual change model proposed by Posner and colleagues (Tsai, 2003).

3. V-Shape

Gowin & Novak (1984) argued that the major motive behind the V-Shape strategy is a willingness to improve and develop experiments and activities that enhance scientific concepts. Furthermore, Gowin & Novak (1995) demonstrated that the V-Shape method is an instructional tool that outlines the interaction between the conceptual structure in a discipline and its procedural structure, where events and objects intersect in a V-Shape at the center point initiated by the cognitive structure. Gurley, cited in Qilada (2004), considered the V-Shape method as an instrument that identifies the ways in which knowledge is formed as a result of persistent inquiry.

Figure (3), represents the V-Shape method. Novak & Gowin (1995) explained that the figure consists of two aspects:

- Left side: representing the conceptual side, including concepts, principles, rules, and theories.

- *Right side:* representing the *methodological side*, including recordings, transformations, and cognitive and value demands.

Events and objects intersect at the center in a V-Shape, linking both sides.

The overarching main question is placed at the top of the V-Shape, where, through that question, interaction occurs between both sides.

3.1 V-shape building steps

The basic units in the V-Shape building process are perceived events and objects. The purpose is to ask the main question and then look for recordings. When the V-Shape is built, a learner should ask him- or herself the following questions:

What objects and events are noticed in light of the main question?

What recordings are produced? What concepts are used to confirm the recordings collected?

What concepts are used in the transformations?

What are the guiding principles, rules, and theories?

How are cognitive demands associated with the preceding principles, rules, recordings, and transformations?

3.2 V-Shape Strategy Use

The V-Shape strategy can be used in various fields, including curriculum planning and developing, assessment, the critical review of research studies in different fields, and as an analytical tool for teacher's responses (Esiobu & Soyibo, 1995; Novak, 2002; Novak & Gowin, 1984; Zaitoun, 2002; Abdussalam, 2001; Al-Khalili & Younis, 1996; Khataibeh, 2005). In the present study, the V-Shape strategy will be used as an instructional instrument representing the most recent application of Ausbel's meaningful learning approach. In this context, meaningful learning takes place by linking practical, experimental, theoretical, and cognitive aspects together, in addition to dealing with events and phenomena. The practical aspect will become meaningful when associated with a learner's prior cognitive constructs, thus allowing the instructional content to be treated in a way that renders it educationally useful (Al-Khalili, Haidar, & Younis, 1996).

Novak & Gowin (1984) argued that the V-Shape strategy achieves substantial advancement in the teaching-learning process, as the cognitive theory stresses integration between the concepts, principles, and theories used to observe events and the demands of cognitive structures. The cognitive theory provides the learner with a conceptual framework for what has already been learned and works as a cognitive bridge for new knowledge, thus helping the learner to understand the nature and development of knowledge.

Khataibeh (2005) and Zaitoun (2002) indicated that a student's use of the V-Shape in his or her learning makes him or her conscious of what s/he does by linking the theoretically based content of concepts, principles, and theorems with practical activities that support more abstract concepts. This, of course, creates an effective interaction between the intellectual (left) and the practical (right) aspects of the V-Shape.

4. Prior Studies

A literature review of journals, Arabic and international studies, and the World Wide Web (Internet), as well as various databases, revealed the Arabic and international studies that were focused on conceptual change, particularly in the field of practical education, which uses different teaching strategies, including Conflict Maps and the V-Shape method, in

comparison with traditional or other methods. To the knowledge of the authors, there has been no study that compares and contrasts Conflict Maps and the V-Shape method as teaching methods for conceptual change, achievement, or any other dependent variable. The following is a brief description of some of the prior studies reviewed.

Barham (1993) used Whitley's conceptual change method in his study, which aimed at identifying the effect of using the constructivist method on bringing conceptual change concerning acids and alkalines among first secondary school students who were following the scientific track in a public school in the Mafraq Governorate, Jordan. The results supported the effectiveness of Whitley's method over traditional methods in bringing about conceptual change.

Cosgrove (1995) sought to identify the significance of using simulation in modifying misconceptions regarding constant electric current. The study found that students who use simulators more often achieved a better scientific understanding of constant electric current, indicating the importance of using simulation to modify misconceptions.

Jaber (2004) aimed at identifying the effect of computer-based instruction in comparison with traditional teaching methods, where both methods were designed based on the conceptual change model. Results indicated no statistically significant difference between these methods in mean conceptual change regarding light among eighth-grade students.

Among studies addressing Conflict Mapping in conceptual change, Tsai (2000) surveyed teachers' views on the use of Conflict Mapping in teaching science. Results revealed that teachers tend to use Conflict Maps, stressing its effectiveness in teaching concepts.

Tsai (2003) explored the effect of using Conflict Maps on changing concepts regarding simple electric circuits. Results from the study supported the effectiveness of Conflict Maps as compared with traditional methods in achieving conceptual change among students.

Baz and Bawaneh (2008) studied the effect of using Conflict Maps on the changing concepts related to electric energy and mechanical waves and other related applications. Results demonstrated that Conflict Maps, when compared with traditional methods, were successful in bringing about conceptual change among students.

The following is a review of some studies that address the V-Shape strategy and its effects on such variables as achievement and conceptual change.

Al-Khraisat (2005) investigated the effect on physics concept acquisition of physics lessons designed in accordance with the fifth learning circle and the V-Shape method in a sample from Amman schools in Jordan. Results indicated no statistically significant difference in physics concept acquisition attributed to either teaching method.

Al-Zoubi (2004) investigated the effect of using the V-Shape method in comparison with traditional method on the acquisition of physics concepts by first-year students in the Faculty of Science at the University of Jordan. Results indicated statistically significant differences among mean scores of the experimental group subjects who were taught using the V-Shape method when compared with the control group, who were taught using traditional lab methods. The results thus favored the experimental group.

Omar (2001) conducted a study that used a proposed strategy for data processing based on a hybrid combination of teaching methods (the V-Shape method, Concept Maps, scientific anecdotes, discussion and dialogue, and instructional activities) intended to develop innovative thinking and higher-order thinking skills among upper primary school-level students. Results revealed a positive effect of using the proposed teaching strategies, including the V-Shape method, on achievement and development of higher-order thinking skills related to scientific concepts.

Passmore (1998) sought to inquire into the effects of using the V-Shape and Concept Mapping methods on learning radiology in a medical lab in the United States. The findings showed that the V-Shape and Concept Mapping methods produced effective learner-lecturer communication styles produced effective communication styles by means of an alternative conceptual adjustment process.

Roth & Roychon (1993) sought to explore the effect of using the V-Shape and Concept Mapping methods on the conceptual understanding of and attitudes toward science learning among physics students (N=27) attending a Canadian university. Results demonstrated that the use of concept maps enhanced understanding, lessened difficulties, and produced positive attitudes toward science learning more than did the V-Shape method.

5. Statement of the Problem

Educators (Rutherford, 1990; Nussbaum, 1989; Abdussalam, 2001; Zaitoun, 2002; Wandersee, Mintez & Novack, 1994) generally agree on the importance of scientific concepts in teaching science. However, many studies (Afra, Osta & Zoubeir, 2007; Demirci, Cirkinoglu, 2004; Baser, 2006; Cepni & Keles, 2006; Almassad et al., 2002; Jaber, 2004; Bawaneh, 2004) have reported a very serious problem when entry-level students arrive at school with many concepts that are inconsistent with acceptable scientific knowledge; such concepts are called alternative concepts or misconceptions. This problem has also been reported by the American Association for the Advancement of Science (AAAS, 1989) and the National Research Council, which found that students have a shallow understanding of science

and scientific concepts. Publications from the Jordanian Ministry of Education have clearly shown that misconceptions are widely held by Jordanian students (Almassad, Abdallah, & Mdanat, 2002); the same result has been reported by many studies (Barham, 1993, Al-Shorman, 2000, Jaber, 2004, Baz & Bawaneh, 2008). Results from the third international study on mathematics and science, which was replicated many times (1994/1995; 1998/1999; 2002/2003), revealed commonly held misconceptions in science, especially physical concepts among eighth-grade students in many countries, including Jordan.

The problem addressed by the current study, therefore, is to survey the prevalence of scientific misconceptions, or alternative concepts, regarding electrical energy.

6. Significance of the study

The major purpose of the present study is to investigate the effectiveness of Conflict Maps and the V-Shape method as teaching methods in realizing scientific conceptual shifts among primary eighth-grade students. This study is important because it:

- Focuses on bringing about conceptual shifts and helping students acquire accurate scientific concepts, which is a basic objective in teaching science (Nussbaum, 1989; Rutherford, 1990, Lewis Linn, 2003).

- Compares and contrasts two teaching methods that are based on the constructivist theory and the conceptual change model.

This study seeks primarily to answer the following study question.

7. Main study question

Is there a statistically significant difference in the mean occurrence of scientific conceptual change (regarding electrical energy) among primary eighth-grade students that are attributable to teaching methods?

Two sub-questions derive from the main question:

7.1 *Question one:* Does the Conflict Map teaching method have an effect among primary eighth-grade students on the mean scientific conceptual change regarding *electrical* energy?

7.2 *Question two:* Does the V-Shape teaching method have an effect among primary eighth-grade students on the mean science conceptual change regarding electrical energy?

Although misconceptions are widely reported in various scientific fields, this study focused on concepts related to electrical energy because it forms a significant discipline of science-basically physics—and due to its practical value in daily life. Furthermore, the topic of electrical energy is studied at the primary and secondary school levels.

8. Operational Definitions

8.1 *Misconception:* A personal concept, developed through one's own experiences and self-perceptions that is inconsistent with acceptable knowledge and is characterized by constancy and change-resistance. Concepts in this study, although selected from various sources, are included in the student textbook.

8.2 *Conceptual Change:* A dynamic process by which alternative concepts interrelated in one's cognitive constructs are modified to fit scientifically acceptable perceptions. In this study, conceptual change is measured by student responses to the Conceptual Change Test items specifically designed for this purpose.

8.3 Conflicted Event: An instructional activity that uses devices and material from a learner's environment to introduce a concept that is contrary to what the learner believes is right and that stimulates in the learner a desire to look for underlying reasons supporting the new concept. The conflicted event disturbs the student's cognitive structures and paves the way for the targeted scientific concept to be introduced.

8.4 New Concept: A concept that is new for students, derived from the environment and in conflict with their alternative concept, which disturbs the cognitive stability of their scientifically inaccurate alternative concept by involving the conflicted event, so that students become open to receiving the accurate scientific concept.

8.5 Conflict Map: An instructional diagram designed by the teacher as an instructional tool for replacing alternative concepts (misconceptions) with scientifically acceptable concepts (Tsai, 2003). The conflict map makes salient the alternative concepts held by students regarding a given topic and then introduces a conflicted event or concept for students to work on practically or cooperatively. This concept or event creates an imbalanced state in students' cognitive constructs surrounding the alternative concept and opens the door for receiving the targeted scientific concept; thus, the first conflict between the student's alternative concept and the new concept is resolved and then the targeted scientific concept is presented. To ensure accuracy, the critical event will be presented cooperatively and practically in order to resolve the second conflict between a student's alternative concept and the targeted scientific concept.

8.6 V-Shape: A meta-cognitive instructional tool used by a student or teacher in the classroom or the lab. The V-Shape method centers on the major role of concepts in learning, retention, and making learning meaningful and identifies the

interactivity between conceptual structures in a discipline and the methodological (operational) structures, where events and objects are found at the center of a V-Shape, where the cognitive structure starts.

9. Methods & Procedures

9.1 Population Sample: The population in this study consisted of students from all male schools, in the primary eighth grade, from the Bani Kenana Provincial Directorate of Education in the Irbid Governorate in Northern Jordan. The study was conducted during the second semester of the 2008/2009 school year. Participants were chosen from a randomly selected school sample. Table (1) shows the sample schools and participant numbers.

Teaching methods, the Conflict Map and the V-Shape methods were randomly assigned to the sample. Classroom teachers with equivalent educational levels and instructional experience for the eighth grade were selected.

10. Instruments

10.1 Conceptual Test

The Conceptual Test was designed to explore conceptual change in students. Conceptual test items covered alternative concepts commonly held by students, gathered from various resources. In its final version, the test included twelve multiple-choice items, each with four choices, where only one represented the accurate response. The following is a brief description of the Conceptual Test development phases:

10.1.1

Alternative concepts were collected by reviewing related literature (Broges & Gilbert, 1999; Tsai, 2003; Baser, 2006; Cepni & Keles, 2006; Baz & Bawaneh, 2008). The alternative concepts selected were only those introduced by the Primary Eighth-Grade Science Textbook in Jordan during the 2008/2009 academic year.

10.1.1.1

Conceptual Test Validity: To test for validity, the Conceptual Test was presented to a panel of seven experts consisting of teachers, educational supervisors, and faculty members from Jordanian universities. Items ensured by the agreement of at least two raters were selected; thus, three items were removed as inconsistent with what the test was designed to measure, and three other items were modified.

10.1.1.2

Conceptual Test Reliability: To test for reliability, the Conceptual Test was administered to a pilot sample (N=29) of ninth-grade students who, in the previous year, studied the electrical energy unit. Students were selected from the study population. Students were informed about the test and its fields one week prior to administration. Cronbach's alpha (0.87) was found to be suitable for the purposes of this study (Audeh, 1993).

10.1.1.3

Difficulty and Discrimination Coefficients: Difficulty values ranged from 0.27–0.68, and discrimination coefficients ranged from 0.27–0.86; both were found to be acceptable for the purposes of this study (Audeh, 1993).

Student responses were adjusted for the Conceptual Test by giving two scores to each item. The scores were then screened, tabulated, and input into the computer statistical process, using the Statistical Package for Social Sciences (SPSS).

11. Instructional Content

The first chapter, related to electricity, of the Tenth Unit from the Primary Eighth-Grade Science Textbook for the 2008/2009 academic year was studied in this study. The researchers prepared instructional booklets including lessons based on the Conflict Map and V-Shape teaching methods. Concept maps were also designed for each concept in accordance with both methods. The instructional booklets contained nine examples for each method whereas there were six Conflict Maps and six V-Shapes for each of the misconceptions.

The teachers (n=2) received training on the Conflict Mapping and V-Shape methods directly from the first researcher. The training occurred over two 1-hr sessions in which the objectives of both methods were identified and instructions on how to build them, as well as on how to use them in teaching science, were given; conceptual change in students was also addressed. The teachers delivered the instructional content to the groups for three weeks in four classes weekly, totaling twelve classes. This process was monitored by frequent field visits to the groups in their schools and over the phone.

12. Study Design

This study included two groups; the first was taught using the Conflict Map method and the other with the V-Shape method. The Conceptual Test was administered to both groups as a pretest and re-administered 31 days later as a

posttest. This study design ensures internal validity and controls for the dispersion factor, as all subjects whose results were under analysis were pre-and post-tested.

13. Variables

This study included the following variables:

13.1 Independent Variable: consisted of the teaching method and had two levels:

a. Conflict Map b. V-Shape

13.2 Dependent Variable: consisted of the conceptual change that took place in the primary eighth-grade students on the topic of electrical energy.

14. Statistical Treatment

Means and standard deviations were computed, and to test for mean differences, a T-test was applied with a significance level of α =0.05.

15. Results & Discussion

15.1 First: Testing the two groups' equivalence on the conceptual pretest: Table (2) shows the means and standard deviations for the student performances on the conceptual pretest in the groups under study. The comparison between the mean estimates of subject performances reveals a computational difference (0.57) in favor of the Conflict Map group. To ascertain whether this difference was substantial, a T-test was conducted, as shown in Table (2).

Table (2) demonstrates that the mean difference between the study groups was insignificant, implying that both groups were equivalent. The results show a low performance of both groups on the pretest. The mean performance of the Conflict Map group was 10.44 out of 24 (43.5%), and the mean performance of the V-Shape group was 9.87 out of 24 (41%).

15.2 Second: To answer the main study question.

15.2.1 First: Means and standard deviations in conceptual change among the Conflict Map group on the pretest and posttest revealed a mean difference in conceptual change of 4.21, in favor of conceptual change on the posttest. This mean conceptual change increased to 14.65, representing 61%. To determine whether this difference was substantial, a T-test was conducted on the data for the pretest and posttest. Table (3) shows the means and standard deviations for conceptual change among the Conflict Map group participants on the pretest and posttest, as well as the T-test results.

Results from the T-test show a statistically significant difference at α =0.05, in favor of a mean conceptual change on the posttest, indicating that the Conflict Map method was a successful teaching method in bringing about conceptual change among this group.

15.2.2 Second: Means and standard deviations for conceptual change among the V-Shape group members on the pretest and posttest. The results revealed a difference (4.13) between mean conceptual change on the pretest and posttest, in favor of the posttest. Notably, the mean conceptual change increased to 14.00, representing 58.5%. To determine whether this difference was substantial, a T-test was conducted to compare the mean conceptual change on the pretest and posttest. Table (4) shows the means and standard deviations for conceptual change among the V-Shape group on the pretest and posttest, along with the T-test results.

Table (4) shows a statistically significant difference at α =0.05, indicating that the V-Shape method as a teaching method was perceivably successful in bringing about scientific conceptual change, regarding electricity, among primary eighth-grade students.

15.2.3 Third: To answer the main study question: "Is there a statistically significant difference in the mean occurrence of scientific conceptual change among primary eighth-grade students attributable to teaching method?" Means and standard deviations were computed for the mean conceptual change of both study groups (V-Shape and Conflict Maps). A T-test was also conducted with independent data to compare the means in light of group equivalence on the pretest. Table (5) shows results from the T-test analysis of the independent data, in order to compare the mean conceptual change for the study groups, and shows the means and standard deviations of mean conceptual change.

Table (5) reveals a difference (0.06) in mean conceptual change between the study groups in favor of the Conflict Map group; this difference was insignificant at α =0.05. This result indicates no superiority between the two teaching methods in bringing about conceptual change and no statistically significant effect (α =0.05) on the mean scientific conceptual change among primary eighth-grade students attributable to teaching method.

16. Results & Discussion

Results from Table (3) regarding the Conflict Map method indicate statistically significant differences in the mean conceptual change on the pretest as compared with the posttest, in favor of the posttest, attributable to the teaching method. This result demonstrates that the Conflict Map was successful in achieving conceptual change among students

and complies with Tsai (2000), in which participating teachers confirmed the suitability of using the Conflict Map method in scientific conceptual change. Furthermore, Tsai (2003) experimentally demonstrated the superiority of the Conflict Map method in achieving change in concepts regarding simple electrical circuits; thus, it helped students to build solid and integrated mental cognitive networks. in comparison with the traditional method. Results from the present study are also consistent with the report of Baz & Bawaneh (2008), who confirmed the positive effect of using the Conflict Map method in changing concepts regarding electricity. In comparison with the traditional method.

Results from the present study are supported by many studies aimed at verifying the effectiveness of teaching methods that rely on the conditions of conceptual change theory in making required shifts (Cosgrove, 2000; Jaber, 2004). The positive effect as represented in conceptual shifts in students exposed to the Conflict Map method can be accounted for by the following:

Conflict maps depend on invoking conflicted events that create a state of imbalance in students' cognitive structures, which in turn stimulate their search for accurate scientific concepts. In addition, they invoke critical events that confirm the accuracy of the targeted scientific concept.

Conflict maps present major concepts related to the targeted scientific concept along with the scaffolding of applied concepts that are related to the surrounding environment and practical life, thus allowing students to accurately associate scientific concepts and discover their interrelationships.

When applying conflict maps, student groups practice activities and experiments as suggested by the critical and conflicted events, which enhances their ability to learn, as individuals learn more and better when communicating with more learned and skilled peers. Vygotsky (1978) argued that a student with more knowledge and skill, a student who understands a concept earlier than a less skilled student, would be able to explain to his classmate how to understand the necessary concept.

The Conflict Map that is built principally based on Posner's conditions of conceptual change displays scientific concepts in a logical sequence.

As for the V-Shape teaching method, the results in Table (4) indicate statistically significant differences in the mean conceptual change on the pretest as compared with the posttest, in favor of the posttest. This is attributed to the teaching method. The results indicate that the V-Shape method was successful in motivating conceptual change in the students. This result is consistent with earlier studies (Al-Khraisat, 2005; Al-Zoubi, 2004; Omar, 2001; Passmore, 1998; Roth & Roychon, 1993) that have indicated the superiority of the V-Shape method in bringing about conceptual change and meaningful learning in comparison with many teaching methods as mentioned in the previous studies.

The positive effect of the V-Shape method can be accounted for by a number of factors; teaching procedures in the V-Shape method are characterized by organization, clarity, and coherence and include an action plan for experimentation while emphasizing the role of concepts in choosing objects or events to be observed, recordings to be identified, and transformations to be performed. They also enable students to discover interrelations among concepts that are derived from observed objects and events and to explore suitable relations linking them together, as well as possible answers to the main question the group is asking.

The V-Shape method also encourages the active role of the student in the learning process, where the student can express his mind freely, so that he is able to use higher-order thinking skills, which in turn motivates students to find and refine more alternative concepts. Considered as one of the meta-cognitive strategies, the V-Shape method is thus helpful for students in understanding and apprehending concepts during learning situations.

The results shown in Table (5) indicate that neither method is superior in achieving conceptual change. Rather, both methods showed similar levels of success. This result can be accounted for by the fact that both methods spring from the same constructivist origin and that both incorporate teaching that is based on the conceptual change model, adhering to specific steps that allow the learner to modify his cognitive structure as necessary. This motivates higher-order thinking skills, thereby allowing him to realize greater integration.

It is worth noting that, to the researchers' knowledge, there exists a dearth of studies that compare and contrast two or more teaching methods based on the conceptual change model. For example, Jaber (2004) studied the effect of computer-based instruction in spurring scientific conceptual change among primary eighth-grade students. Two teaching methods were designed based on the conceptual change model, using computer software to be used with the experimental rather than the control group. Both teaching methods, based on the conceptual change model, were successful in bringing about conceptual change, whereas neither method was proven to be superior to the other.

17. Recommendations

In light of the results of the present study, the following recommendations are suggested:

Curriculum developers and textbook authors are advised to take into account, in their efforts to develop textbooks and instructional design, teaching strategies that are designed according to the conceptual change model, particularly

Conflict Maps and the V-Shape method. At the same time, they should pay strict attention to practical scientific concepts.

Further studies are advised to compare the effects of conceptual change strategies on conceptual change, achievement, and retention in other subjects, such as chemistry and biology.

It is advised that training courses and workshops be held for teachers to practice using teaching strategies that are based on the conceptual change model, mainly Conflict Maps and the V-Shape method.

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Table 1. Sample schools & student numbers

School Building	Student Number
Harima Comprehensive Boys' Secondary School	31
Kharja Comprehensive Boys' Secondary School	32

Table 2. Means, standard deviations, and T-test results of independent data comparing the mean estimates of the study groups on the conceptual pretest

Group	Number	М	SD	t-value	Р
Conflict Map	31	10.44	4.67	0.456	0.645
V-Shape	32	9.87	4.37	-	

Table 3. Means and standard deviations of conceptual change among Conflict Group participants on the pretest and posttest, including T-test results

Mean Conceptual Change	Number	М	SD	t-Value	
					Р
Pretest	31	10.44	4.67	6.01	0.00
Posttest	31	14.65	5.89	-	

Table 4. Means and standard deviations of conceptual change among the V-Shape group on the pretest and posttest, along with T-test results

Mean Conceptual Change	Number	М	SD	t-Value	р
Pretest	32	9.87	4.37	5.31	0.00
Posttest	32	14.00	6.05	-	

Table 5. Results from the analysis of independent data, comparing the mean conceptual change in the study groups as well as the means and standard deviations of mean conceptual change

Group	Number	М	SD	t-Value	р
Conflict Map	31	4.20	3.55	0.069	0.931
V- Shape	32	4.14	3.76		



Figure 1. Hashweh model describing two conflicts in the conceptual change process (Tsai, 2000)



Figure 2. Conflict Map as proposed by Tsai (2000)



Events and / or Objects

Figure 3. V-Shape components, Ozsoy (2004).



*There is an exception in the teaching sequence that the target scientific encept should be presented earlier than the entired event. Figure 4. A conflict map about electric circuit (modified from Tsai, 2000, p. 290)

V - Shape

Lesson: Ohm's Law



 Events: Use conductor wires to connect resistance to one battery, the ammeter (A), and voltmeter (V). Then follow the steps one by one.

Figure 5. V- Shape, lesson: Ohm's Law



Study and Practice of the Cultivation of Mathematics Teaching Design Ability for Normal College Students

Zhenhui Xu

Applied Technology College, Southwest University of Science and Technology, Mianyang 621010, China E-mail: xuzhenhui@swust.edu.cn

Hanlin Chen

School of Science, Southwest University of Science and Technology, Mianyang 621010, China

E-mail:chenhanlin@swust.edu.cn

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Abstract

With the development of the course reform of elementary education, the requirements that the classroom teaching should fully embody the new concept of education and inspire students to actively participate in classroom teaching are higher and higher, so high school teachers should have stronger teaching design ability. To make normal college students to be competent for the mathematics teachers of high school after they graduate, the cultivation of their classroom teaching design ability should be strengthened. The concrete strategies include following aspects, i.e. strengthening normal college students' learning of the learning theory and the teaching theory and establishing correct teaching concept, confirming the guiding ideas of mathematics classroom teaching design under new course environment, confirming the contents of the mathematics classroom teaching design, apperceiving the mathematics classroom teaching design by various channels and modes, and instructing normal college students to study and discuss materials intensively, attempt design and practice, and summarize experiences.

Keywords: Normal college students, Mathematics classroom, Teaching design, Practice, Effects

1. Backgrounds and meanings

Under new course environment, teacher' role has changed from past knowledge initiator, supervisor and luminary into promoter, guide and cooperator for students' learning (Zhong, 2001). The teaching process is the interactive process of the communication and mutual development between teachers and students, and teaching becomes into the creation process of teachers and students full of personality, and both teachers' teaching methods and students' learning methods will change. So teachers should create various teaching situations to inspire students' learning passion and motive, lead them to actively participate in the learning, and continually propose questions and explore strategies for solving problems, and make students obtain active and deep experiences accruing to the teaching contents. The teaching mode should be multiform, and the teaching should be implemented creatively, which can design proper learning activities for students and make the classroom full of passion. These series of changes require teachers must seriously design the teaching of mathematics classroom. Therefore, to be competent for the teaching of mathematics in high schools and be eligible mathematic teachers after graduating, normal college students must enhance their teaching design ability of mathematics classroom.

The so-called mathematics classroom teaching design is to use systematic method to organize various teaching materials organically under the guidance of teaching theory and learning theory in the lesson preparation, and plan various associated parts, and confirm the analysis and research methods, and propose the approaches to solve problems, and analyze the anticipated result (Zhou, 2002). That is to say, to achieve the teaching target of mathematics classroom, plan how to teach, what to teach, and what effect that the teaching should achieve. For teachers, the mathematics room teaching design is a creative work.

2. Strategies and methods to cultivate college students' ability of mathematics classroom design

2.1 Cultivating students to confirm the contents of mathematics classroom teaching design

How the mathematics teaching activity is implemented is to design the activity of teaching and learning, and it is the core part of teaching design, and it includes following aspects.

(1) The mathematics teaching content should present the design of the process. The contents include the design of teaching target, the design of new lesson lead, the design of explaining emphases and difficulties, the design of

experiment, demonstration and modern teaching media assistant cooperation, and the design of blackboard writing.

(2) The design to instruct learning activity. And the contents include the design of instructing reading materials, the design of illuminating thinking and inspiring asking, the design of organizing students to exercise, and the design of instructing summarization and induction, and the design of instructing transfer and utilization.

(3) The design of anticipating the feedback information and adopting teaching countermeasures in time

These designs are integrated in concrete teaching activities, and they are arranged according to the time of course, and the integrated optimization in the teaching and learning is embodied in the ordered arrangement of many factors such as teachers, students, teaching materials and medias, that is the difficult point in the classroom teaching design.

2.2 Strengthening college students' learning of the teaching theory and the learning theory and establishing correct teaching conception

In the teaching, the teaching principles of high school mathematics should be explained combining with practical examples to lead normal college students to deeply know and discuss the teaching method, teaching measure and teaching strategy of mathematics, seriously analyze the characters, advantages and deficiencies of various teaching methods, study and grasp the high school mathematics concepts, mathematics methods and extensive application. At the same time, normal college students should be leaded to discuss the formation, development and perfection process, general rule of high school mathematics cogitation structure, and the structure and character of mathematics lesson, and analyze the main factors in the teaching process of mathematics, and make normal college students to confirm the essential, characters and type of mathematics learning, and grasp the basic methods and strategies of mathematics teaching method and mode with present teaching method and mode advocated in new lesson. Normal college students should fully know the effective behaviors of teachers' high school mathematics teaching and the effective behaviors of students' learning, and establish correct teaching concept, i.e. taking teachers as the dominant part, taking students as the main body, taking the development as the major idea, and mainly cultivating students' innovational spirit and practice ability.

2.3 Confirming the guidance ideas of classroom teaching design under new course environment

(1) Fully embodying the basic "students' development-oriented" concept in new mathematics course (Xu, 2003).

The course reform of elementary education should takes "students' development" as the basic course concept, and "students' development" means the development of all students, i.e. the comprehensive and harmonious development, the durative development for life, the lively development, and the development of personality and specialty. Therefore, the classroom teaching design should fully embody the function of main body of students, and create proper teaching situation and conditions for the development of each student, inspire students' strong learning needs and interest, and lead them to participate and explore actively, i.e. the exploring and discussion activities in the question situation design and teaching process should orientate to each student with difference, and pay attention to each student, and let all students participate and experience them as possibly, and make students to understand, grasp and utilize the knowledge in independent activities, and at the same time, the classroom teaching design should not only emphasize the teaching of elemental knowledge and the training of basic skills, and develop students' wisdoms and abilities, but promote the formation of their active emotions and attitude, and correct value concept, fully respect students' personality, and build a democratic, equal and harmonious teaching atmosphere to make students develop comprehensively.

(2) Effectively integrating three factors including teacher, student and teaching material, reasonably grasping the classroom structure and embodying the most optimized idea.

The design of mathematics classroom teaching should treat the mathematics activities by systematic eye and dynamic concept, balance the position of teaching and learning, and translate the teaching principle into the plan of teaching activity. The famous psychologies of US, Robert Mills Gagne, proposed a catchword of "designing teaching for learning". He thought that the teaching was that people created environment elaborately, inspired, supported and drove the happening of interior process of learning, and achieved the learning result by the function of exterior conditions. When designing the mathematics classroom teaching, teachers should take students' activity as the principle part of behaviors, start from students' needs, seriously analyze the development level, cognition mode and existing living experience, and knowledge experience of learning, and deeply dig the ideas and contents of teaching materials, and reasonably organize the teaching contents. Teachers should confirm and embody the target of classroom teaching, try to create the teaching situation for students' thinking, offer proper learning guidance and condition support, organize students to experience the course of mathematic exploring to the most extent, offer wide thinking space for students, and realize the learning mode that students actively participate and explore, suppose, and communicate, and orderly develop the thinking activities including finding problems, discussing problems, communicating and solving problems to achieve the most optimized effect of teaching. Concretely speaking, the mathematics classroom teaching design should arrange the teaching process systematically and elaborately from five aspects. First, the time of one lesson should include a group of "module" such as introduction, discussion, conclusion, exercise, confirmation, or transfer. Second, the organization order of the teaching content should give priority to students' psychological development order, and give attention to the logic orders of knowledge. Third, when selecting teaching method, teaching media and confirming teaching strategy, the rationality and the optimized combination should be embodied. Fourth, the teaching organization form should mainly consider the proper interaction among teachers and students, strengthen the communication power in classroom, and properly convert the interactive mode according to the practice of classroom. Fifth, the development of classroom teaching activity should follow the cognitive rule of learning course including inspiring motive and interest, apprising target, memorizing relative old knowledge, presenting new tasks, instructing the understanding, and offering the opportunity for each student to attempt exercise and experience results, elaborately arrange the homework to further confirm and transfer. And it should make the mathematics classroom full of vital forces and energies, and make students to realize the essence of mathematic thinking, exercise the mathematical thinking, grasp the thinking method of mathematics, know the essence of mathematics, and comprehensively and harmonious develop the mathematics teaching in the mathematical teaching process.

(3) Opening out the thinking process, and cultivating students' innovational spirit and practice ability.

The classroom teaching should intentionally design the long-term target of innovational education, for example, the setting of "question situation" should be beneficial to inspire students to actively consider, suppose boldly, actively explore and dig new questions, promote deeper thinking, fully dig students' interior potentials, and develop students' thinking innovation. In the exploring process of question, students should have deficient space and opportunities of independent consideration to independently analyze, study, and solve problems, and students should be cultivated to have the ability to obtain new knowledge, and really "seek experiences by participation and develop by innovation".

2.4 Apperceiving the mathematics classroom teaching design by various channels and modes

(1) Teachers of the teaching method should demonstrate the classroom teaching of mathematics in high schools.

(2) Organize normal college students to practice of classroom teaching in local high schools, and invite famous teachers of high school to explain demonstration lessons.

(3) Organize normal college students to look on good teaching videos, and read teaching cases.

Normal college students should really perceive the mathematics classroom teaching of high school, understand the classroom teaching design, and analyze, discuss, and evaluate these various classroom teachings. For example, the setting of question situation should be close to life and practice, and induce the students to put forward questions, and with the development of teaching process, a continual question process can be formed, i.e. a question chain which can inspire students to think will be formed, and it can create a process full of observation, association, abstraction, generalization and mathematization. The actively mode design of students exploring and discussion and communication should be proper, and the teachers should instruct students' consideration, and limit students' thinking range properly. Aiming at the requirements and targets of various parts in the mathematics classroom teaching, normal college students should express their own opinions and discuss them together to promote them to translate the "academic formation" of mathematic knowledge into the "educational formation" (Zhang, 2005), and really know and experience the essential meaning of the classroom teaching design.

2.5 Instructing normal college students to study and discuss materials intensively, attempt design and practice, and summarize experiences

(1) Normal college students should analyze the teaching materials (the angle of editor, the angle of students, and the angle of teachers) from different angles, and they should be instructed to analyze the status, function,, knowledge structure, and character of teaching materials according to different contents.

(2) Instruct normal college students to confirm the teaching requirements, emphases and key points, elaborately select teaching contents with characters such as foundation, exemplification, structure and representative character.

(3) Instruct normal college students to organize materials, reasonably confirm the teaching strategies, and correctly select the teaching method according to the "order" of the teaching materials and the "order" cognized by students.

(4) After seriously analyzing and deeply studying the teaching materials, normal college students should be organized to attempt to design various parts, and then communicate and discuss, and fully declare themselves, and improve comparing with the rules.

(5) Organize students to teach in the small classroom, and then discuss and evaluate, and improve for measure.

For example, in the lesson of "the monotonicity of the function", multiple modes can be designed in the lead part through discussion and study.

(1) The mode of direct lead. At the beginning of the lesson, bring forth the teaching targets. (a) Understand the monotonicity of the function and the meaning of the monotony interval, and understand the proving method of the function monotonicity. (b) Judge the monotonicity of the function according to the image and definition, and prove the

monotonicity of the function in the interval. (c) Utilize the monotonicity of the function to solve the value domain of the function. This method can point out the learning contents and keys, and strengthen the intention of learning, and enhance the attention of learning.

(2) The mode of review lead. First, show the image of the quadratic function $y = x^2$ which has been already learned, and combining with the image, lead students to review the characters of the function, i.e. the image of the function is ascending in the right side of the axis of y, and the image of the function. This method uses the review of old knowledge to naturally lead the new lesson, which can make for the association between new knowledge and old knowledge, and improve the understanding of new knowledge.

(3) The mode of question lead. Teacher gives following question first and let students to discuss at the beginning of new lesson.

For the function of $y = \frac{1}{2}x^2$, (a) if $a, b \in [0, 2]$, and a < b, can f(a) and f(b) be compared? (b) if $a, b \in [-3, 0]$,

and a < b, $\operatorname{can} f(a)$ and f(b) be compared? (c) if $a, b \in [-3, 2]$, and a < b, $\operatorname{can} f(a)$ and f(b) be compared?

This method can catch the inconstancy of the question to lead students, which can arouse the cognitive conflict, expose the thinking obstacle, and successfully create the situation of question.

(4) The mode of observation lead. First, students should observe the functions in the corresponding intervals, and point out their main differences in character (the images of these two groups of function are offered by the overhead projector).

The first group of function:

$$y = f_1(x)$$

$$y = g_1(x)$$

$$y = g_1(x)$$

$$y = x^3$$

$$y = x^3$$

The second group of function:

$$y = f_2(x)$$

$$y = g_2(x)$$

$$y = g_2(x)$$

$$y = g_2(x)$$

$$y = -x^3$$

After various parts are designed, the teaching project of one lesson can form, and then organize normal college students to teach in small classroom, and discuss and improve the concrete problems in the practice teaching. Though repetitive discussion, research, improvement, and practice teaching, normal college students can more deeply know and understand the teaching and learning in the high school mathematics, so their ability of the classroom teaching design of high school mathematics can be effectively enhanced.

2.6 Teachers of the teaching method should further strengthen the guidance of classroom teaching design in the practice stage

In the practice of normal college students, teachers of the teaching method should participate in the lessons in the practice school, and organize all personnel (instruction teachers and practice students) to evaluate the lesson, and all personnel should elaborately analyze the whole teaching structure and the advantages and disadvantages of the lesson, and put forward improvement opinions for better designing the teaching of next lesson. In such process, each normal college students can be improved, and largely enhance their classroom teaching design ability and teaching skills.

3. Main innovation points

(1) The study and practice of the cultivation of the normal college student mathematics classroom teaching design ability accords with the standard requirement of new lesson of the Education Ministry, and it is the concrete application of modern education theory and modern learning theory, and the training mode has the character of innovation and strong operation character.

(2) Realize the combination of theory and practice, the combination of the in-class and out-class, and the combination

of college and high school.

(3) Explain and demonstrate various parts of mathematics classroom teaching design, and organize normal college students to attempt to design various parts.

(4) Emphasize the demonstration function of the teaching method teacher, and pay attention to the discussion of students, and the communication and mutual evaluation among teachers and students.

(5) Implement students' practical training in the practice teaching and small classroom.

4. Practice and effects

(1) Normal college students of three consecutive terms (2005, 2006, and 2007) of the mathematics department in the Mianyang Normal University respectively participated in the experiment, and they had high passions and universal welcomes, and they highly evaluated the teaching reform experiment. And the practice result shows that the method and strategy in the experiment is effective and feasible.

(2) Whether in the practice report game in the practice schools, or in the classroom teaching game of excellent students in the Mianyang Normal University, the students in the department all obtained significant achievements. From 2005 to 2007, the education practice of the mathematics department all obtained the first prize of the university, and in the game of practice report lesson of 2006 and 2007 participated by students of five colleges in the Mianyang Nanshan High School (National Focus High School), the students of the mathematics department all obtained the first winner and the second winner at the same time (various specialties of various colleges only selected two players to participate in the game), and obtained the first winner and the second winner of the group of the science department in the classroom teaching game of excellent students in the school (various specialties only selected two players to participate in the game).

(4) There were five articles about relative research to respectively publish in the Theory and Practice of Education, Journal of Teaching and Management, Teacher Education Research and Journal of Mianyang Normal University.

(5) In the questionnaire investigation of 213 students in the experiment, 91.5% students though that it was very necessary to specially explain and train the mathematics classroom teaching design in the lesson of "subject teaching method", and it was propitious to normal college students to competent for the teaching works of the high school mathematics. 88.7% students thought that the cultivation of the classroom teaching design ability was very important to drive the classroom of high school mathematics. 94.8% students thought that in the teaching process of the lesson of "subject teaching method", it was very effective to emphasize the combination of theory and practice, and highly emphasize the cultivation of the teaching design ability. 96.7% students thought that it was very helpful to add the requirement of new lesson standards, new teaching concept, and new teaching mode in the classroom teaching design, which can help them to be welcomed by students of high school in the practice process.

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Historical Development of Secondary Education in Bangladesh: Colonial Period to 21st Century

Md. Mustafizur Rahman (Corresponding Author) Faculty of Education, Universiti Kebangsaan Malaysia (UKM) 43600, Bangi, Selangor, Malaysia Tel: 60-16-639-3102 E-mail: mustafiz236@yahoo.com

Dr. Mohd Izham Mohd Hamzah Faculty of Education, Universiti Kebangsaan Malaysia (UKM) Tel: 60-3-8921-6362; 60-12-731-4529; Fax: 60-3-8925-4372 E-mail: izham@ukm.my

Professor Datuk Dr. T. Subahan Mohd Meerah Faculty of Education, Universiti Kebangsaan Malaysia (UKM) Tel: 60-3-892-16284; 60-13-397-6739; Fax: 60-3-8925-4372 E-mail: subhan@ukm.my

Mizan Rahman

Faculty of Business & Law, University of Lincoln, Brayford, UK Tel: 44 -15-2288-6345 E-mail: mrahman@lincoln.ac.uk

Abstract

In a world of global market competition, the secondary level education has become a part of basic education. Secondary schools are vested with the responsibility of imparting knowledge, skills and attitudes essential for individuals to fit into society and be able to contribute fruitfully to its development. This article analyses the development of secondary education in Bangladesh in different period of time, socio-political context. Therefore, a general overview of secondary education is provided which is followed by historical evolution of secondary education in the British and Pakistani rule over Bangladesh. In conjunction with primary and mass education, secondary education was revised with great emphasis on the development of an all-round individual, female education, the acquisition of quality education, and the inculcation of technical and science education. A good number of commissions and committee were formed in different time to make changes in educational arena. Following the recommendations, the system of educational administration has been decentralised to promote school-based management and teacher empowerment. Furthermore, the non-government schools have been always encouraged to play an active role in providing secondary level education. A new education policy for Bangladesh has been tabled in September, 2009 after restoration of democratic process. At secondary education level a broad-based change in educational objectives, structure and system, curriculum have been proposed which is under public scrutiny.

Keywords: Secondary education, colonial education, Wood's Educational Despatch, Qudrat-e-Khuda education Commission 1974, Moniruzzaman Miah Education Commission 2003, New education policy 2009

1. Introduction

Formal education is a fulcrum of sustainable development. Education allows individuals to develop within their community and country, and allows nations to compete and survive in the global economy. Education plays a critical role in fostering basic intellectual abilities, expanding further educational opportunities that are vital to success in a world where power is closely linked with knowledge. Quantitative and qualitative access to knowledge is key to skills formation and paramount to improving productivity. Therefore, education, which stimulates and empowers people to participate in their own development, has proved to be the most important instrument for poverty reduction in Bangladesh. Education is also heralded to reduce population growth, reduce maternal mortality, increase agricultural productivity, higher labor force participation and lead to democratization (Case, 2006; McGrath, 1999). Investment in education results in a citizenry that is more committed to good governance, fiscal accountability and transparency.

Bangladesh is one of the least developed countries of the world today. It is plagued with multifarious problems encompassing its social, political, and economical structures. The three and half decades since the country gained

independence have been traumatic. Recurring political upheavals, natural disasters, dramatic social changes and economic convulsions contributed to the gloomy nature of the life of the common man. The bulk of the people live in abject poverty either in the run-down rural areas or in destitute urban slums. Only fortunate few in the cities and towns have access to whatever goods and services are provided by the government. Therefore, in Bangladesh, poverty eradication is currently at the top of government agendas. The Constitution of the People's Republic of Bangladesh enjoins upon the Government of Bangladesh the obligation to ensure literacy of all the citizens (GoB, 1972). The Government of Bangladesh has made commitments in the World Education Forum (UNESCO, 2000) towards achievement of 'Education for All' goals and targets for every citizen by the year 2015. Pursuant to its constitutional obligations and international commitments, the government is determined to ensure 'Education for All' in the shortest possible time. Active measures are taken for accelerating primary education program in the light of global awareness in the education sector as well as Bangladesh's national goals. However, in a world of global market competition, the secondary level education has also become a part of basic education that should be universally available (Mulford, 2002). Secondary schools are vested with the responsibility of imparting knowledge, skills and attitudes essential for individuals to fit into society and be able to contribute fruitfully to its development. A high school graduate in Bangladesh can expect to earn 200 percent over those with no education (Ilon, 2000). Therefore, Bangladesh hopes to gain from secondary education system more effective citizens who can be productive participants, domestically and abroad, in markets and communities.

2. The Structure of the Education System in Bangladesh

Education in Bangladesh has three major stages - primary, secondary and higher education. Primary education is a 5-year cycle while secondary education is a 7-year one with three sub-cycles: 3 years of junior secondary, 2 years of secondary and 2 years of higher secondary. The entry age for primary is 6 years. The junior secondary, secondary and higher secondary stages are designed for age groups 11-13, 14-15 and 16-17 years. Higher secondary is followed by higher education in general, technical, technology and medical streams requiring 5-6 years to obtain a Master's degree.

2.1 Streams of the Education System

Bangladesh's present system of education is more or less a legacy from the British (Ali, 1986). It is characterised by co-existence of three separate streams running parallel to each other. The mainstream happens to be a vernacular based secular education system carried over from the colonial past. There also exists a separate religious system of education. Finally, based on use of English as the medium of instruction, another stream of education, modelled after the British education system, using the same curriculum, has rapidly grown in the metropolitan cities of Bangladesh. Primary level education is provided by two major institutional arrangements (stream): general and madrasah. Secondary education has three major streams: general, technical/ vocational and madrasah. Higher education, likewise, has 3 streams: general (inclusive of pure and applied science, arts, business and social science), madrasah and technology education. Technology education, in its turn, mainly includes agriculture, engineering, medical, textile, leather technology and ICT. Madrasah functioning parallel to the three major stages have similar core courses as in the general stream (Primary, Secondary and Postsecondary) but have special emphasis on religious studies. Therefore, at secondary and higher level however diverse the above streams may apparently look, they have certain common elements, and there exists scope for re-integration of graduates of one stream with the other at different levels. Figure 1 depicts different streams of the education system in Bangladesh. (Figure 1)

2.2 Secondary Level Education Institutions in Bangladesh

Post-primary education in the general stream is imparted by junior secondary schools (grade 6-8), secondary schools (grade 6-10) and higher secondary schools, known as Intermediate colleges (grade 11-12). Post primary level madrashas are known as Dakhil madrasha (grades 6-10), Alim madrasah (grades11-12). In terms of ownership and management of secondary schools, there are two major types; government secondary schools and non-government secondary schools (including Dakhil madrashs). Nearly 98% of the post primary (secondary and higher secondary) institutions are owned and managed by private sector (BANBEIS, 2006). However, these institutions are private only in name because 100% of their salaries and wages, and the costs of their physical infrastructure development, durable educational supplies and equipment are provided by the government. Secondary education level institutions in technical and vocational stream include Polytechnics, VTI, Commercial Institutes, Technical Training Center, Textile Vocational Center, Agriculture Training Institute and others. Bangladesh Open University (BOU) also provides distance education for drop-out students at secondary education level with the support of a countrywide network of regional and local centres, radio and television programmes. The number of secondary level educational institutions (Post primary), teachers and pupils are presented in the Table1 below. (Table 1)

The total number of Government/Public school in 2009 is still 317. Different public secondary schools start serving students from grade 1, 3, 4, or 6, but all continue up to 10th grade. Among the existing 317 public schools, a few of them also started running 11 and 12 grades as a pilot basis from the year 2007. Table 2 shows the distribution of public secondary schools by region in Bangladesh. (Table 2)

Government secondary schools are concentrated mostly in urban centers, resulting in a lack of educational access to the majority of children from rural areas, socio-economically backward families, girls from remote urban periphery areas and ethnic minorities. The public high schools are generally recognised as model schools in respect of their students' performance in the SSC examination (The Daily Star, 2008). The cost of education in these schools is just one third of any private school (The Daily Star, 2005). Therefore, low cost of education also draws a large number of admission seekers to the public secondary schools. Also it is tough to get chance to be admitted in public secondary schools in big cities. In January, 2008, a total of 36,532 students contested for 7,479 seats in the admission tests in Dhaka city's 24 government schools (New Age, 2008). Thus parents' interest, students' SES characteristics, administrative support from the government, teacher competency, and the resources of time, materials, facility have made public schools distinct. There are also some residential 'Cadet colleges' in Bangladesh, governed and run by the armed forces. These schools and colleges follow 'Bangladesh Textbook Board Curriculum' but use English as the medium of instruction.

Education in Bangladesh has faced both glory and travails throughout history. The present scenario of secondary education of Bangladesh is the result of evolution of educational practices in Indian sub-continent. In history, Bangladesh has experienced various educational systems which have left an indelible mark on Bangladeshi society. This article describes and analyses the evolution of secondary education in Bangladesh from the British period to 21st century.

3. Educational Provision and Schools during Colonial Period

Bangladesh is a new state in an ancient land. The territory constituting Bangladesh was under the Muslim rule for over five and a half centuries from 1201 to 1757 A.D. Subsequently, it came under the colonial rule of the British after defeat of the last sovereign ruler Nawab Sirajuddowala in 1757 (Islam, 1992). The British came in this subcontinent as merchants but ultimately they captured the political power and ruled over the entire Indian sub-continent including this territory for nearly 190 years from 1757-1947 (Mcleod, 2002). During that period Bangladesh was a part of the British Indian provinces of 'Bengal and Assam'. Education in Indian Sub-continent began from an indigenous educational system in ancient times, continued through an Islamic style of education in the medieval period as a result of Muslim invasions, and to imperialistic education delivered during British colonization. The East India Company and the British Crown were generally indifferent to education in Indian sub-continent until the early 19th century. Throughout the last decades of eighteen century and beginning of nineteenth century, European missionaries and the East India Company established several schools and colleges for developing educational programme of this area (Mukerji, 1957). Warren Hastings (1773-1744) the Governor General of the East India Company was sympathetic to Indian traditions and encouraged indigenous Indian thought to the exclusion of Western educational instruction (Mann, 2004). In 1781, 'Kolkatta Alia Madrasah', the first government college in the Indian sub-continent was set up to produce officials well versed in Islamic laws and in 1792 'Benaras Sangskrit College' was established by company officials (Chatterjee, 1976). But the colonial officials had differences of opinion among themselves regarding the purpose of educating the people of this subcontinent, about the medium of education, management of schools, the way of expanding educational facilities to the whole country (Ali, 1986; Mukerji, 1957; Viswanathan, 1989).

The East India Company first recognized their responsibility towards education in British India in the Charter Act of 1813 (clause 43) where they highlighted the need to promote and uplift oriental languages and literature as well as increase the knowledge of western sciences among the Indian population (Kumar, 1991). Thomas Macaulay (1800-1859), a member of the Governor General's Council, in his influential minute in 1835, articulated the supremacy of the Western culture, and English language; supported the education of the upper classes, and made a vigorous plea for spreading Western learning through the medium of English (Ghosh, 1993; Mukerji, 1957). Consequently in 1837, English was made the language of administration, and thus the East India Company officially entered into the education field of this sub-continent. As a result of the new policy there was a rapid growth in English schools and colleges (Mukerji, 1957; Seal, 1968) and English as the medium of instruction began to dominate the entire educational field (Ghosh, 1993; Roy, 1993). The indigenous educational institutions had to go through hard times due to financial crisis and the English domination (Chatterjee, 1976; Sinha, 1978). Most importantly, English became a compulsory subject in high schools, for matriculation and a requirement for university and college admissions (Mukerji, 1956). However, at the beginning of the nineteenth century a system of liberal English-language schools based on the British model was also instituted in the region that now constitutes Bangladesh (Ali, 1986; Nurullah & Naik, 1962). Giving attention and importance to secondary education system and for its expansion, the British established 12 Zila schools and 3 collegiate schools (Public schools) in present Bangladesh land area during the years 1832-1855.

In this context, the celebrated Wood's Educational Despatch of 1854, resulting from an enquiry about education in India by the Select Committee of the British House of Commons, provided the legal foundation for modern public education in Bengal (Bhatt & Aggarwal, 1969). Establishment of educational departments in every province, establishment of universities, supervision system, establishment of graded schools, grant-in-aid private schools, teachers' training institutions, creating a comprehensive secular system of education for the diffusion of practical knowledge using both

English and the vernacular languages were the major outcomes of Wood's Despatch (Nurullah & Naik, 1951). Secondary education as a distinct level of the total education structure emerged only after the publication of famous Education Despatch (Mominullah, 1984). However, one of the first documents advocating formal education for girls in Bangladesh (then part of India) is 'Wood's Education Despatch' of 1854. In that document, 'female education' was discussed and promoted because it enhanced the educational and moral tone of the people (Jalaluddin & Chowdhury, 1997). What educational provision there was for girls focused on 'education for enlightened motherhood' (Chanana, 1994); they were being trained to be mothers, rather than, for example, being prepared for paid employment or for tertiary education. The universities of Calcutta, Madras and Bombay were established in 1857, which had a far reaching effect especially on the content, range and scope of secondary education. They dominated secondary schools in every respect and secondary education became a preparation for the university.

In 1882, Lord Ripon appointed the first Indian Education Commission with William Hunter as its Chairman (Nurullah & Naik, 1962). They suggested for leaving secondary education to private enterprise through a system of grants- in- aid, school-end 'Entrance examination' and appointment of trained teachers at secondary schools. After the all Indian Education Conference at Shimla in 1901, Lord Curzon published his education policy in the form of a government resolution in 1904 which contributed to the increase of vernacularisation at high school level especially in public schools, catered for the masses (Ali, 1986). But elite schools, European or convent schools used English as medium of instruction which excluded most Indians on grounds of birth or poverty. Learning in high schools was vigilantly checked by regular inspections and matriculation examinations. The control of textbooks was one of the measures by which the State maintained supervision over the vast body of public schools. The pedagogical content of secondary schools was prescribed by the British Crown; even colonial officials exercised the right to reject textbooks used in private schools, such as madrasahs (Bhatt & Aggarwal, 1969). The schools were strict to follow learning exercises and schedules, or regulations directed by the British rulers.

Under the reforms of 1919-1921 the elementary education was made free within municipalities and rural unions and in Bangladesh the first steps towards universal primary education were taken through the Bengal primary education act 1930 (Memmi, 1957). A provincial department of education was established in 1930, and thus began the process of centralization and bureaucratization of education. Consequently, the enactment of 'The Bengal Education Code 1931' (The Bengal Education Code 1931) was a landmark legislation that created the 'District School Board' as the administrative body for primary and secondary education. A Central Advisory Board was established in 1935, for policy formulation in education recommended by the 'Hertz Committee-1927'. In 1945, a separate Education Department was established under the Central Government and its responsibilities were entrusted to a member of the Central Executive (Nurullah & Naik, 1951). Though the British at that time took initiative to develop the educational backwardness of Indian sub-continent (Mann, 2004), but the education imparted by them did not develop practical skills or technical knowledge, rather emphasized classical, humanistic curricula in schools to perpetuate the aristocratic tastes and manners of the upper class to create exclusively dependent elite (Ilon, 2000; Mukerji, 1956; Seal, 1968). This elite class, who had job prospects and social upward mobility at certain level (Roy, 1993; Basu, 1934), provided clerical and administrative support to the colonial administration which encompassed areas of immense linguistic and cultural variety and became faithful customers to British goods (Chatterjee, 1994). But, the new elite became alienated from the masses of the people, who had no access to the new education system (Basu, 1952; Bhattacharya, 2005; Robb, 2002).

Economic and socio-religious mobility were the major hindrances for the poor in British India to enroll in schools. The caste allied socio-religious restrictions were imposed upon the poor to prevent them from achieving knowledge. The cost of education was another important factor that pushed away the poor from schools. The direct cost of schooling, expenditures such as books, fees, uniform, and so on, and indirect costs in terms of foregone earnings while child was at school were key economic factors for the poor. The poor could not overcome these hurdles in order to achieve knowledge. Instead of trying for the upliftment of the poor, the colonial government introduced the education policy based on the "filtration theory" (Bray, 1993). Nurullah and Naik (1951) also criticised the British for not having developed a truly national system of education; for failing to evolve a synthesis of eastern and western cultures; for neglecting indigenous education and for the absence of any overall plan or consistent drive to reach a predetermined goal.

4. Secondary Education and Schools in Bangladesh during Pakistani Rule

With the end of the British rule in 1947, the sub-continent was partitioned into two independent countries, India and Pakistan. Bangladesh became one of the provinces of Pakistan and was named as East Pakistan. There was a general awareness of the need to restructure the education system to meet the needs of the new nation. The country came into being as a result of an ideology based on the Islamic system of values and culture. Urdu was adopted as its national language and therefore became the medium of instruction in most of the public schools. The experiments with Urdu in education during that period were linguistically and philosophically defensible from a narrowly patriotic or nationalistic

point of view. However, at the time of independence there was a considerable presence of missionary schools and colleges in which the medium of instruction was English.

The founding father of Pakistan, Mohammad Ali Jinnah made efforts to give a definite direction to education in Pakistan. Through the educational system he wanted to build up the character of the future generations. In the meantime, 'First Education Conference' was held in 1947 at Karachi, 27 November-1st December (GoP, 1947). This conference was convened to reassess the colonial education system and to restructure the existing educational system with due regard to ideological and literacy considerations. The second major area taken into consideration was the training and development of scientific and technical manpower. The third point on the agenda was to plan education in conformity with national genius and aspirations. In the Education Conference at Karachi Mohammad Ali Jinnah said, "... We have to build up the character of our future generations. We should try, by sound education, to instill into them the highest sense of honour, integrity, responsibility and selfless service to the nation. We have to see that they are fully qualified and equipped to play their part in the various branches of national life in a manner which will do honour to Pakistan." While commenting on the quality of education, he said, "Education does not merely mean academic education, and even that appears to be of a very poor type" (GoP, 1989). With this in mind successive policy makers made a number of policies. The plan was to build coherence between spiritual, social and vocational education and to promote democracy through universal primary education by making education free and compulsory, initially to class five and eventually to class eight. Madrasah education would be brought into the fold of formal school education. In addition to formal education at the elementary level, other areas for the promotion of Islamic education were taken into account in keeping with the ideology of the new independent state.

In 1949, Maulana Akram Khan Committee on education was established and in 1951, Second Education Congress was held at Karachi, 4-6 December (GoP, 1949; GoP, 1951). Following the reports of 'Akram Khan Committee' and 'Ataur Rahman Khan Commission 1957' the united front government wished for a universal single stream primary and secondary education system for all, based on scientific knowledge. In 1956, the constitution of Pakistan eventually recognized Bangla as one of the national languages. In the successive five-year plans and other national economic policy documents developed during the Pakistan period, the need of modern science education was also articulated but the impact of such policies was not felt in East Pakistan.

Newly formed Sharif Commission on education (1958) and the 'Curriculum committee for secondary education (classess vi-xii)' under military rule, also articulated in their report a need to shift the focus of school education away from rote memorization and to expand facilities for scientific and technological education (GoP, 1960). The Curriculum committee for secondary education (classess vi-xii) produced a report, a document of 647 pages, in the record time of three months. However, the new policy was an outcome of the political agenda of the government of that time. Its mandate was to evolve a national system of education that would reflect the spiritual, moral and cultural values of Independent Pakistan, and enable the system to meet the growing needs of the nation in the fields of agriculture, scientific and technological development. The objectives of this report for secondary education may be encapsulated as follows: "To develop, (a) a good worker (b) a good citizen (c) a good individual and (d) a good patriot." Such statements might seem unarguable, but they are more in the nature of pious sentiments than of implementable objectives. The difficulty lies in their general incommensurability. Thus, though the policy set aims and objectives relevant to the needs of new state, it failed to provide a clear-cut strategy to attain them. The absence of an implementation plan reduced the policy to mere words. The dictatorship of that time was struggling to gain political recognition and thought of creating short-term economic gains whereby a greater number of people could find jobs and GDP could increase. However, the 'Sharif Report' was comprehensive in its recommendations. They emphasized universal primary schooling, eradicating illiteracy and promoting the national language, among others. The committee also incorporated suggestions for a few basic changes in the administrative set-up, such as decentralizing the management of primary education, revamping the examination system, and envisaging a new management structure for technical education.

In 1959, breaking the traditional one stream secondary education, separate streams were introduced after Class-8, namely Arts, Science and Commerce. The East Pakistan Intermediate and Secondary Education Ordinance of 1961 spelt out the law regarding establishment of managing committees for secondary schools. Based on this ordinance, regulations were framed at various times on such matters as student fees, admission and registration, holding public examinations and terms of teachers' service. East Pakistan Secondary Education Board took charge of the affiliation and examination of secondary level institutions. This step was followed by the creation of a School Textbook Board in 1954. Later on, one Education Board was split into four on the principle of one Board for each administrative division of the country. These 4 Boards shared between them the responsibilities of granting recognition to the schools, supply of textbooks, inspection and above all holding two public examinations, one at the end of the tenth year of schooling (Secondary) and the other at the end of the twelfth year (Higher Secondary).

During that time, student movement (1962 -64) was created against the Sharif Commission with a demand of pro-people education policy and as a result, in 1964, the new 'Commission on student problems and welfare' was

appointed headed by Justice Hamoodur Rahman (GoP, 1966; Bangla Pedia, 2005). But, with only a few exceptions, a liberal elite-based secondary education system with very little awareness of life in the countryside was in place. However, the commission report criticized a few elitist secondary educational institutions which did not fit in with principles of equality and social justice (GoP, 1966). The commission reported, "The idea of superior and inferior schools does not fit in with our socio economic pattern and principles of equality and social justice as enunciated by Islam which have been declared as the avowed policy of the state in the preamble of our Constitution" (GoP, 1966). Curle (1966) has pointed out that during the Ayub Khan regime (1958-1969), Pakistan's education system was elitist and there was no apathy towards educating the masses.

In 1969, General Yahya's government appointed a committee, with Air Marshal Nur Khan at its head, to overhaul the educational system. The rationale behind yet another educational policy was that education had failed to promote national cohesion, especially on account of East Pakistan separatist feelings which finally directed to the disintegration of Pakistan in 1971, and that it had not played its proper role in national development. There was a high rate of unemployment among the educated youth and academic standards were low. This policy visualized the promotion of a common set of cultural values based on the precepts of Islam. Creating a literate society and developing vocational and technical manpower was its focal point. The recommendations given for changing this vision into reality were to integrate Madrasahs into the normal school system and bring the latter in line with ideological demands, to integrate primary and middle schools with elementary schools, to undertake a massive program of adult education, to decentralize educational administration and to establish the University Grants Commission. This committee also recommended Urdu and Bangla, instead of English would be the medium of instruction in Pakistan by 1975 (GoP, 1969).

This policy clearly shows that education was used, once again, for political purposes. Therefore, the policy also put a brake on progress and made the country dependent leading to technological backwardness. The phenomenon of keeping education exclusive to some in Pakistan was also the legacy of colonial education. Middle class people are often skeptical of an educated mass people fearing loss of their monopoly in job market. Another issue, the sub-continent is predominantly rural and agrarian. Keeping this fact in view the Education Commission didn't give due consideration to its rural population. However, since its inception Pakistan's educational system has been unstable. The reasons for this can be attributed to lack of political will, language problems, frequent policy changes, conservative attitudes of religious leadership, poor financial resources, a weak structure and ignorance on the part of the masses. Effective leadership and a promising vision have been lost in a fog of clerical negativism compounded by bureaucratic and social indifference.

The 'Universal Declaration of Human Rights' (Article 26) of 1948 recognizes education as one of the 'Thirty Basic Human Rights' and stresses the need for education as a major driving force for economic and social development. Similarly the UNESCO Convention against Discrimination in Education, Article-4 (1960) implies free and compulsory primary and secondary education available and accessible to everyone and higher education equally accessible to everyone on the basis of individual capacity. But in Pakistan after independence, the leaders could not give education its due place in the first two constitutions, namely, those of 1956 and 1962. There was no definite time frame for making free and compulsory primary and secondary education available to the nation as its Fundamental Right. Therefore, a more coordinated and focused effort could bring the majority of population into the mainstream education. Whereas the Committee on Rural Education 1957 in India, recommended greater focus on agriculture education in secondary schools for better performance of the sector (Kaur, 2003), in Pakistan, school education remained a dream for the majority living in the rural areas of the country. However, in 1960's, one Boys' and one Girls' secondary school in each 'Mohukuma' (administrative region) were taken over by the Pakistani rulers as public schools.

5. School Education and Schools in Bangladesh after Liberation

Economic disparity, extraction of wealth and socio-political repression made East Pakistan very discontented. Starting from the language movement in the year 1952 to establish Bangla as a national language (Alam, 1991; Umar, 1970), the people of East Pakistan had struggled hard for democracy and autonomy, which turned into a war of liberation in 1971 (Zaheer, 1994). After a protracted nine months long war, Bangladesh finally achieved her independence. Bangladesh inherited, on Liberation in 1971, a literacy rate of 17.61 per cent of the population of all ages (GoB, 2004a).

The first Education Commission in Bangladesh appointed under Dr. Qudrat-e-Khuda submitted the report in 1974. The report emphasized on secular education at all level, future work-relevant technical and vocational education, improved assessment system, letter grading in the assessment of student performance in all stages of education and making primary education from grade 1 to 8 and secondary from grade 9 to 12 (GoB, 1974). The report firmly asserted that women's education should be such as to be of help to them in their domestic life, and stressed that subjects such as child-care, the nursing of the sick, preservation of health, food and nutrition must be included. It also suggested that girls should be channelled into 'vocations specially suitable to them', such as primary-school teaching, nursing and typing (Jalaluddin & Chowdhury, 1997).

An Advisory Committee was appointed in 1978 to have a fresh look at the issues and problems of education (Shahadat, 1999) which submitted an 'Interim Education Policy 1979' report on 8th February, 1979. The interim education policy document consisting of the recommendations of the National Education Advisory Council, headed by the State Ministry of Education, was hastily formulated as a new blue print for the education sector. The interim policy document put emphasis on increased literacy so that people could take part in the development of the country. The document established the current educational framework with secondary education consisting of three sub-stages; namely, junior secondary (3 years), secondary (2 years), and higher secondary (2 years). In addition, the document stipulated the following: "(a) terminal examination will be conducted by the District Education Authorities for all stages of secondary education; (b) vocational, technical, agricultural and medical education will be included and integrated into secondary and higher secondary education; (c) there will be provision of skills development in any technical subject at junior secondary and secondary levels." In regard to madrasah education, the 'Interim Education Policy' stipulated that it should be reorganized to ensure its equivalence to general education in such a way that the 'dakhil' level would correspond to secondary and 'alim' to higher secondary education (GoB, 1979; UNESCO, 2007). The Madrasah Education Ordinance was also issued in 1978 and in 1981, Govt. introduced, for the first time, service rules and salary subvention system for teachers and staffs of private secondary institutions. Before 1980 public sector contribution towards salary subvention to non- government educational institutions at secondary and higher secondary level was limited in the form of 'Dearness Allowance'. Initially teachers used to get 50% of their basic salary quarterly through district treasury. The office of the Director of Public Instruction (DPI) was upgraded as the Directorate of Secondary and Higher Education (DSHE) in 1981. In 1983 the government formed a cadre named BCS (General Education) and the government college teachers, public secondary school headmasters, district education officers came under the cadre service. Under the rule of Lt. Gen. Hossain Muhammed Ershad (1982-90), in 1983, the 'Enam committee' for administrative reconstruction made 14 subject-based teacher-posts in each government public school. But in the amended recruitment rules for teachers in 1989, all the posts were made 'Asst. teacher'. Teachers' associations demanded of upgrading the status of secondary school teachers as they were getting the status of class-III government employees.

Two military regimes i.e. Maj. Gen. Ziaur Rahman (1975-1981) and Lt. Gen. H.M. Ershad (1982-1990) changed Bangladeshi identity politics from a secular and ethnic "Bengali" identity to State-based and pseudo-Islamic 'Bangladeshi' identity to build political legitimacy and take Bangladesh out of Indian shadow. Education was used as a vehicle for promoting 'Bangladeshi' nationalism. The two regimes made constitutional changes to erase secularism by 'absolute trust and faith in Allah' and Islam as the 'State religion' in 1979 and 1988 respectively. Therefore, during General Ershard's rule and afterwards there has been unplanned mushrooming of Madrasahs/religious schools in Bangladesh. Religious education was used as a tool for attracting votes of religious people and to beat the secular opposition in electoral politics. The Ershad regime made Islamic studies compulsory up to the secondary level amid strong opposition from secular and left leaning parties (Gustavsson, 1991). The regime patronised Madrasah education from primary to higher secondary level with government recognition. Furthermore, like different political governments after liberation in 1971, 'Ershard Government' took the responsibility of secondary education by nationalising a good number of schools throughout the country.

Bangladesh was under military-led quasi democracy throughout 1975-1990. During 1980s, the reports of 'Mazid Khan Commission 1983' and 'Mofiz Commission 1988' on education were not widely disseminated and like many other reports of the past, were not formally adopted for implementation (Sahadath, 1999; GoB, 1988). Democratic practice has been in existence since 1990s and many changes and development took place at the secondary level of education system. At the beginning of 1990s many public schools were made double shift school, newly teaching posts were created and thus a significant change was made. Female students' stipend programme (FSP), increase of government subsidy in monthly pay order (MPO) and a new assessment system at SSC examination were also introduced in 1992. Raynor and Chowdhury (2004) claim that, "The stipend programme has brought about change. Adolescent girls are now visible in large numbers, going to and from school in rural areas- in itself a fundamental change. The female stipend programme (FSP) offers an allowance to encourage families to send girls to school, and to help to meet the costs of education."

During mid 1990s, the secondary school curriculum was revised, approximately 150,000 teachers received short-term training in the new curriculum; ten teacher-training colleges were upgraded and five new higher teacher training institutes were established. At the end of 1990s, 'Shamsul Haque Education Commission 1997' was formed. Correspondingly, in 2001 and 2003 two other commissions 'Abdul Bari commission 2001' and Moniruzzaman Miah Education Commission 2003' were formed. The later submitted its report in 2004 and advocated for a single-track secondary education system, wider access to education in rural areas, narrowing down teacher-student ratio, upgrading teacher qualifications, reforming the curricular and teaching methods, and improving the assessment and examination systems at secondary level (GoB, 2004b). In different phases the amount of public sector contribution towards salary subvention to non- government educational institutions at secondary and higher secondary level was increased to 60%,

70% and 80% and finally up to 90% in 2001. The remaining 10% was given by the institutions. Teachers and staffs were also given 25% and 50% of their basic salary as festival allowance and limited house rent respectively. Recently Government is giving 100% of salary subvention to the teachers of non- government educational institutions and the disbursement is made monthly through teacher's personal bank account.

Nowadays, the major focus of Bangladesh education policy at school level switched from "quantity" to "quality". Reforms are being implemented in school managing committee (SMC), retirement and service benefit of non-government teachers, teacher training, information technology and computer education, secondary curriculum, school-based assessment system (SBA) and English language teaching (GoB, 2005; World Bank, 2005). 'Quality Assurance' is now pursuing to help evaluating schools' performance using a set of indicators (World Bank, 2006). The Sixth Five Year Plan (2003-2008), issued by the Planning Commission, presents the following targets in regard to secondary education: (a) increasing participation in different levels and types of education, such as lower secondary, secondary, and higher secondary levels including madrasah education; (b) increasing participation of girls through stipend programmes in all levels of secondary education; and (c) increasing quality of secondary education through in-service training of teachers (UNESCO, 2007). Despite these initiatives, Bangladesh faces new challenges and demands in education sector and secondary education system is still facing problems to deliver quality education (Ahmad, 2005).

Even though there have been seven education commissions formed till date but Bangladesh has not been able to have a realistic education policy after 38 years of its independence. Successive governments in Bangladesh, whether for political motives or real attempts at getting it right, have always advanced legitimate explanations for embarking upon one reform program or the other. Over the years, emphasis is given on quantity by setting up unnecessary secondary education institutions to satisfy politicians and their constituencies (GoB, 2005). These schools don't have adequate facilities, qualified teachers and above all competent educational administrators (Begum & Bhuyan, 2005). So, secondary education in Bangladesh ignores, in a thousand ways, the rules of integral, transformational healthy educational development. Evidently the ineffectual manner by which the policies were implemented ensured that educational panning was social-demand oriented rather than manpower oriented (Mahmud, 2003; Sen, 2002). The secondary graduates, therefore, suffer with no marketable skills to sell to prospective employers and millions of these graduates roaming the city and town streets (Ilon, 2000; GoB, 2005).

6. Proposed Education Policy 2009

The present Awami League (AL) government having a decisive victory in the recent national elections is designing another new national education policy. The government formed a sixteen member committee to update the National Education Policy 2000 which was headed by National Professor Kabir Chowdhury (The Daily Prothom Alo, 2009). The proposed new education policy is formulated in the light of the 'Qudrat-e-Khuda Commission' report of 1974 and 'Shamsul Huq Education Commission Report' of 1997. This is indeed timely, especially in a globalising world in which other countries, such as China, India have pushed themselves into the 21st century by vigorously engaging in knowledge revolution and human resource development.

The final draft of the National Education Policy 2009 was formally submitted to the Prime Minister on 7 September, 2009. The salient features of the recommendations of the committee include revising the stages of under-graduate education from three to two, the mandatory inclusion of certain compulsory subjects under all streams of education, making education more need-based and formation of a permanent education commission (The Financial Express, 2009). The Policy paper recommends extending compulsory primary schooling to eight years. Final primary level exams will be held at the end of Class 8 and secondary school scholarships will be awarded based on the results. The new policy also recommends that secondary level studies will extend over four academic years, Classes 9-12, and the government scholarship exams will be taken at the end of Class 10, instead of SSC exams. Final secondary level exams will be held at the end of Class 12. Some fundamental subjects including Bangla, moral education, Bangladesh studies, mathematics, natural environment, social studies, IT and science will be made compulsory in different streams of primary and secondary level curriculum. The policy also calls for some form of technical and vocational education to be introduced at all secondary level institutions. Accordingly, madrasah education will be restructured by including information technology and vocational training among compulsory subjects. It has also recommended formation of a non-government teachers' commission. Such broad proposals are to be welcomed, specially the one requiring all students to be taught certain compulsory subjects such as science and mathematics at the primary and secondary levels (The Financial Express, 2009).

Education has been proving to be the centre point of realizing national aspirations in all fields. Therefore, Andaleeb (2009) stresses for various stakeholders' commitment in the education sector as very important determinant of any accomplishment. He also claims that the education sector is financially challenged. The allocation of cash to education sector in Bangladesh, which is roughly 2.7% of GDP, must be increased to a large extent. In other countries the comparative numbers are roughly; India 3.2%, Thailand 4.2%, Malaysia 6.2%, UK 5.6% and USA 5.3% (Andaleeb,

2009). However, the government should also look into the earlier education policy documents and translate the recommendations into action. Girl's right to education, inclusive education, indigenous children and their right to learn own languages should be well documented in the policy proposals. Moreover, it must also address environmental issues, health and nutrition, character education, conflict resolution and participation of local government in the whole education system. It is important to consider whether the government is institutionally prepared enough for the proposed change. There is much to be improved upon, and strengthened particularly in areas of capacity building and availability of competent teachers to operationalise the new policy as effectively as possible. It is also imperative to set up effective, supportive infrastructures, particularly in thrust areas, in order to make education truly useful for the economy.

Designing an education policy is a tough task. Perhaps a little more time should be budgeted to think through the vital issues. In no way, the scope for incorporation of commendable suggestions by all concerned quarters should be excluded before the policy gets the final approval for implementation. Therefore, the proposed policy is going through the usual phases of some scrutiny at the expert level. The policy also will require a closer and careful examination and have to be mandated by the country's parliament. The education minister hopes that after finalizing the policy, its full-fledged implementation will begin from early in the year 2010 (The Financial Express, 2009).

7. Conclusion

The education system of Bangladesh is continually undergoing reforms in order to meet the current and future needs and challenges of the socio-economic developments of the country. In that course of change, secondary education has achieved a number of positive developments. Bangladesh has made significant progress in providing more young people with access to secondary education, increased enrolment, especially for girls; increased number of schools and teachers, reduction of gender inequality in education, revision of curriculum, etc. Even so, in spite of all remarkable achievements, declining quality in secondary education system, which is reflected in public examination results, remains a major concern. Bangladesh government fully recognizes the urgent need to improve the quality of education alongside its efforts for creating equitable access to secondary education. The issues of access, equity and quality however being intertwined have to be looked at in totality in an integrated manner, and the strategies to address them must also look at the key areas simultaneously, not in a piecemeal fashion. More investment in this sector is needed although there are a number of inadequacies, hindrances and a scarcity of financial resources. However, what is of interest to all stakeholders is the identification of factors or variables that enhance learning in all schools, irrespective of the background of the children that attend them and are generalisable to all schools.

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Appendix: A



Figure1. Different Streams of Education System in Bangladesh

Appendix: B

Table1. Number of Institutions, Teachers and Students by Stream of Education in Bangladesh

Type of school based on streams	No. of Institutions		No. of Teachers		Enrolment	
	Total	Female	Total	Female	Total	Female
Total Secondary Education (General)	18500	3708	232929	46983	7398552	3868014
Public secondary school	317	147	7434	2333	221887	106316
Madrasah -Dakhil	6685	1017	98123	9908	2236025	1170220
Madrasah - Alim	1315	91	25634	1803	550813	253207
Total Technical/ vocational Education	2728	267	18185	3208	241336	62562

Source: BANBEIS (2006)

Table 2. Number of Public Secondary High Schools by Region in Bangladesh

Region	Boys' school	Girls' schools	Total schools
Dhaka	33	25	58
Mymensing	17	14	31
Rajshahi	20	17	37
Chittagong	35	19	54
Comilla	13	10	23
Rangpur	16	22	38
Khulna	15	21	36
Barisal	10	10	20
Sylhet	12	08	20
Total	170	147	317

Source: Sultana & Sultana (2005)

International Education Studies



Summary of Development as a Reflective Practitioner

Hong Quan, Shihua Yang & Honglin Chen College of Foreign Languages, Yunnan Agricaltural University Kunming 650201, Yunnan, China Tel: 86-0871-522-7828 E-mail: tina04872001@yahoo.com.cn

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Abstract

This paper is a summary which explores the effectiveness and evaluation of my development as a reflective practitioner. It focuses on development with two useful theories about learning and teaching. They are about deep learning & surface learning and levels of teaching. Actually, when I put these theories to practice reflectively, the result shows positive outcomes, it can improve students' motivation and raise students' interest in studying English and help me developing in my profession.

Keywords: Surface and deep learning, Active learning environment, Levels of teaching, Constructive theory, Critical incident, Effective practice, Reasonable reflection.

Introduction

I understand that there have been many experiences and incidents required reflection and realization. I learned how to reflect from my experiences in expounding constructive theories. Gibbs' (1988) reflective series is the model that I can comprehend how students learn, and how my thoughts have been influenced by evaluation. After reflecting on my lectures and students' activities, I discuss with my colleagues and gain many useful advices to adjust my action which were dissatisfactory. Throughout five years, I have tried as a reflective teacher, and it really helped me to improve in my profession.

1. Reflective Practitioner

Sumsion (1997) observes that the object and purpose of reflection can be wider than just acquiring technical professional competencies and extend to a more holistic view of personal development. The concept of the "reflective practitioner" is popularized by Schön (1983, 1987) and Cowan (1998). It refers to evaluating elements of the self, the task and the environment concerning their effect on practice in the past, present and future. Kenny (2004) thinks that "A teaching clinic can function as a mirror that allows participants -both teacher and students - to reflect on their work and themselves." Schön (1987) describes the environment as a "hall of mirrors". On the basis of Kolb Cycle, the Cowan diagram enhances the theory of being a reflective teacher. A reflection-for-action generates "a more detailed definition of the diverse needs and goals which were to be relevant to individual students; reflection-in-action means reflecting on what one has been doing; reflection-on-action takes place in action completed." (Cowan, 2006, pp52-57)

Actually all these theories can be applied to teaching practice. Through experimentation I can understand theories much more easily and intensively. Thus I manage to be a reflective practitioner as Schön explains. The most satisfying results of taking the course I want to reflect on is the activities described below.

2. Two significant theories about learning and teaching

After reflecting on every session during the last year, there are many theories which have really influence on my learning and teaching, and made me improve my abilities of teaching greatly. Here, I mainly relate two significant theories. One is deep learning and surface learning, and the other is levels of teaching.

2.1 Deep learning and surface learning

2.1.1 The concept

Ramsden (2003, p57) states that "Deep approaches are almost universally associated with a sense of involvement, challenge and achievement, together with feelings of personal fulfillment and pleasure...Students who are taking a deep approach find the material more interesting and easier to understand, and are therefore more likely to spend 'time on task.'"

Biggs (2003, p14) says that "The surface approach arises from an intention to get the task out of the way with minimum trouble while appearing to meet course requirements... In using the surface approach, students focus on what Marton calls the 'signs' of learning; the words used, isolated facts, items treated independently of each other."

Biggs (2003) summarize these two approaches to study. He think the two approaches to learning describe the way

students relate to a teaching/learning environment; students have their own personalities to speak, and good teaching supports the deep approach and discourages the surface.

- 2.1.2 Encourage students from surface learning to deep learning
- 2.1.2.1 Deep learning is preferable to surface learning

The evidence is as follows:

From Marton's and Säljö's (1976; 1997) ideas of 'surface' and 'deep' approaches to learning, these two approaches are not personality traits or fixed characteristics but are intentions. In order to help students change their learning approaches from surface to deep in the limited time, if teachers create an active learning environment, and let the students know they are required a deep approach, they maybe adopt deep learning; otherwise, they maybe use surface learning. As Ramsden (2003, p41) says "the way in which anyone goes about learning is a relation between the person and the material being learned...it is about how people experience and organise the subject matter... it is about 'what' and 'how' they learn, rather than 'how much' they remember', that means the approach can be thought of as a qualitative aspect of learning. It is proved that there are clear relationships between students' perceptions, approaches and outcomes. The most consistent finding suggests that perception of heavy workloads is associated with a surface or reproducing approach to study.

Different students take different approaches to learning. These approaches are not stable traits in individuals, although some students will tend towards taking a deep approach while others will tend towards taking a surface approach (Biggs, 1999). It is suggested that good teaching can influence students to take a deep approach while poor teaching in the widest sense can pressure students to take a surface approach. (Lublin). Teachers can make creative use of teaching methods and approaches to create opportunities for deep learning. Wakely says that there are many methods teacher can use, such as using learning lists and getting the students to read a variety of texts on the same subject so that they have a lot of opportunities to experience related items perhaps even in different contexts can help encourage deep approaches. Making extensive use of dictionaries and using word associations to develop a deep knowledge. In order to encourage deep learning approach by our students, we can use opportunities for revising and applying knowledge, teaching and learning activities intended to encourage deep learning, and it can take time to succeed.

2.1.2.2 Activity 1

My students are non-English major minority students with low motivation, most of them are surface learners, and I am going to help them change their learning approaches. For the purpose of expanding their vocabulary when the fall semester began, I put my plan through as follows:

Firstly, from the result of Lublin's research, "If students see knowledge as a way of understanding the discipline and the world, they are more likely to adopt a deep approach." At the beginning of the session, I stated like that, "A strong vocabulary can be a valuable asset, both in college and later in career. To improve vocabulary, you must be willing to work at it, spending both time and effort noticing and learning new words and meanings. Keep in mind that intent to remember is one of the principles of learning."

Secondly, in order to make the students memorize new words and phrases easily and encourage them in deep approach of meaningful memorizing, I designed some tasks in each unit, include reading widely, looking for clear words to replace unclear words, and build word awareness through exercise and pair-work. For example, (1) I select an article named "Loads of fun stuff for English learners" after Unit 1, and most new words and phrases will be repeated in the article. (2) Let the students to replace the general and unclear word in the sentence "The movie was so good." Such words as "exciting", "moving", "thrilling" and "scary" can replace the word "good", and each of them gives more information than the word "good". (3) I try to use words that the students understand but seldom use both in formal classroom lectures and in more casual discussions and conversations. (4) I also encourage and tutor them to read and retell in my spare time.}

As Ramsden (2003, p47) says deep approach is to "relate previous knowledge to new knowledge", to "relate theoretical ideas to everyday experience", and from Biggs' (2003) 'Product' 3P Model, deep learning emphasizes how students learn but surface learning emphasizes what students learn. Almost four months past, all of them were engaged in study English before/in/after sessions. As a result, students looked not as bored as before but confident and active all along. From the students' feedback, most participants agree that they are satisfied with their learning outcome (51.8% strongly agree, 33.7% agree). Obviously, the different activities brought them into deep learning and kept them from boredom and ungodliness.

2.2 Levels of teaching

2.2.1 The concept

Biggs (2003, pp 20-25) compare three levels of thinking about teaching. Level 1 teachers focus on the student factors. Teachers seek to blame the students for their failure to learn, perhaps citing lower ability levels and /or poor motivation.

Level 2 teachers focus on the teacher factors. Teachers believe that teaching is all about what they do and that, if this is good enough, their students will learn. Level 3 teachers focus on what the student does in terms of processes and the final product and believes that the teacher's role is to make learning possible. Clearly, level 3 teachers is one of best.

2.2.2 Activity 2

Same students as activity 1, I choose to design and deliver PowerPoint for supporting my students' learning. Before Christmas, in order to Increase knowledge of western cultural for my students, I selected a topic "Festivals around the world" for PowerPoint based on prior experiences, such as "A Gift for Mother's Day". According to Ramsden(2003) describe that one of University teacher's theories of teaching is making students busy and using a set of efficient actions, I gave the students task-based instruction in session. (1) I give them learning outcomes for making my students learning possible; (2) I design some pair tasks, include opening questions, discussing, question and answer pairs. At the same time, I show two beautiful slides for enjoying the festive revelries day and night in western countries; (3) I create three slides for 3 minutes fast reading----"Festivals and celebrations", then let students answer 3 questions in order to make the students quite impressed with the text; (4) I design further questions and further activity for group work. After discussion, each group chose one classmate to give a short presentation. (5) Let students retell the text, and the student who do well will gain a small prize from me. Finally, I summarize the text and collected feedback sheet from all students.

The feedback from the students intended to help me get to know the students' reaction to activity 2. Each questionnaire consists of 5 statements, for which the students' should choose 1 out 5 ranging from strongly agree to strongly disagree.

The feedback from students shows that all of my students agree that the PowerPoint design is both interesting and beneficial to their learning (45.3% strongly agree, 54.7% agree), most of them agree that PowerPoint can motivate their confidence to deep learning (45.2% strongly agree, 33.3% agree, 21.5% uncertain). The feedback also shows that they consider retelling text is difficult for them. (51.7% strongly agree, 30.8% agree, 15% disagree, 2.5% strong disagree) Evidently, I guided students to take deep learning. On the other hand, I think I am a level 2 teacher at present based on Ramsden's theories of "Teachers at Level 2", because the focus is on what the teacher does. If I have chance to teach this topic again, I will let students who feel difficult retell the text by filling some blanks which include some key words of phrases.

Reflection

I have got unbelievable development of skills, experience and knowledge in teaching this year. I started learning with less knowledge of teaching theories but now I moved into one who know more teaching theories and can apply these theories to my teaching practice. The most important point is that I learn reflection-for-action, reflection-in-action and reflection-on-action according to the Cowan diagram.

Now I apply these useful theories to teaching practice. So I am a reflective practitioner at present, and I am going to learn how to research curriculum in the future.

As Biggs (2003, p7) says that "reflecting on your teaching, and seeing what is wrong and how it may be improved, requires you to have an explicit theory of teaching." When I reflect on activity 1 and activity 2, I think they are two critical incidents for me.

For lack of reflection, consideration, relation of theories to practice and self-evaluation, I used to "transmitting information" (Biggs) in session, so the students took surface learning and I was a level 1 teacher. With my mentors' positive instruction and my self-efforts, I gradually have insights into theories and I am able to match them with practice. Now, I can guide my students to take deep learning, for example, I use several active methods to make students to deep learning in activity 1 and activity 2. Meanwhile, I become a level 2 teacher, for instant, I can do"good management"but usually focus on my presage factors in activity 2. I am looking forward to moving to a Level 3 teacher in the future.

Conclusion

I have engaged in kinds of teaching activities including lecture, group work, feedback to students, supporting learning with technology and etc. which considerably arose student motivation and enthusiasm of learning during these years, and I have gained many advantages. I learn not only teaching theories but also practical skills of teaching. The most important is that I learn how to reflect and improve my teaching skill from critical incidents. My ability to guide the students to take deep approach has been developed greatly. For me, there is still much to learn and I'm firm to be a reflective practitioner who can react to every situation and reflect on my teaching practice, so I will continue to develop.

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The Use of Scaffolding Approach to Enhance Students' Engagement

in Learning Structural Analysis

Djwantoro Hardjito Department of Civil Engineering Petra Christian University Surabaya, Indonesia E-mail: djwantoro.h@gmail.com

Abstract

This paper presents a reflection on the use of Scaffolding Approach to engage Civil Engineering students in learning Structural Analysis subjects. In this approach, after listening to the lecture on background theory, students are provided with a series of practice problems, each one comes with the steps, formulas, hints, and tables needed to solve the problem. Gradually, with the growing confident to apply the method as a tool to analyze structures, the amount of help provided is reduced, until finally no help is provided at all.

Using this approach, only the main background of theory is needed to be lectured. The application of the method to analyze various problems is learned by students themselves by doing the series of problems engineered with gradually-reduced supports. Students' engagement is greatly enhanced, as they are so much involved in the learning process.

Keywords: Scaffolding Approach, Civil Engineering students, Learning, Students

Introduction

Kassimali defined Structural Analysis as "the prediction of the performance of a given structure under prescribed loads and/or other external effects, such as support movements and temperature changes". A structure itself refers to a system of connected parts used to support loads, for example in Civil Engineering area this may include buildings, bridges and towers (Kassimali, 2005).

Structural Analysis is one of the major subjects in Civil Engineering curriculum. At Curtin University of Technology, Sarawak, Malaysia; my previous workplace; this subject is taught in three different units, i.e. Structural Analysis 267, Structural Analysis 268, and Structural Analysis 365. Each of these units weighs 25 credit points, with the first two units are offered to second year students, while the last is for third year ones. Students are expected not only to gain the numerical skill in analyzing structures, but also to develop their understanding on its behavior. Traditionally, this subject is viewed as difficult subject by most of Civil Engineering students.

To make the subject more interesting and the learning process more engaging, several approaches have been attempted. One of them is the use of Scaffolding Approach. This approach has been chosen for topics which fall into the category of Stiffness or Displacement Method, i.e. Slope Deflection method and Moment Distribution method. These methods involve several 'rigid' steps resulted in unique solution.

To date, quite a number of reports are available on the use of scaffolding practice in many different areas of learning, for example in mathematics learning (Anghileri, 2006), in various subjects in primary schools (Lipscomb, 2004) and in teaching software design (Linder et al n.d.). However, no report is available on the use of this approach in teaching Structural Analysis for Civil Engineering students. This paper shares a reflection on the use of Scaffolding Approach on the above mentioned units, as part of the author's reflective practice.

Background

Scaffolding approach is about providing temporary supports. It is a normal practice in building construction to provide scaffolds especially to concrete structures in the early ages, as it is still developing its strength. As the structure is getting stronger, the amount of temporary supports provided is gradually removed, until finally no support at all is needed when the structure is strong enough to carry the designed loads.

It was Wood, Bruner and Ross in 1976 who introduced the term "Scaffolding" in the *Journal of Child Psychology and Psychiatry* as mentioned by Lipscomb et al (2004). They used the notion of 'scaffolding' to describe the way adult support is adjusted as the child learns and is ultimately removed when the learner does not need support anymore and becomes independent. The theory actually originated much earlier from the work done by Lev Vygotsky's

socio-cultural theory and his concept of the *zone of proximal development* (ZPD) early in the 20th century (Stuyf, 2002). He stated that there are two learners' developmental levels, i.e. the 'actual developmental level' and the 'potential development level'. The *zone of proximal development* (ZPD) is defined as '*the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under or in collaboration with more capable peers*' (Lipscomb, 2004).

In the view of ZPD, the role of teachers is to provide assistance or support to students with tasks that are just beyond students' current capability. When students' gradually develop their mastery, teachers start the process of '*fading*', or gradual removal of the temporary support. Benson, as stated by Lipscomb et al (2004), defined scaffolding in another way as '*a bridge used to build upon what students already know to arrive at something they do not know*'.

Lange in 2002, as stated by Lipscomb et al (2004), mentioned the two major steps involved in instructional scaffolding, i.e. (1) 'development of instructional plans to lead the students from what they know to a deep understanding of new material' and (2) 'execution of the plans, wherein the instructor provides support to the students at every step of the learning process'.

Lipscomb et al (2004) also listed the challenges and benefits of scaffolding approach. Among the challenges are: very time consuming, potential of misjudging of ZPD, inadequately modeling the desired activities or strategies, takes time to see the full benefit, and lack of specific examples and tips in the text books. However, the approach is also beneficial in: possible early identifier of giftedness, engages learners, provides individualized instructions, motivates learners to learn and minimizes the level of frustration to learn. These challenges and benefits are generally agreed by Lawson (2002) and van der Stuyf (2002).

Topics Description

Regarding the topics I chose to apply the scaffolding approach, both Slope Deflection method and Moment Distribution method are belong into the category of Stiffness or Displacement method. In this Stiffness or Displacement method, firstly it requires the satisfaction of equilibrium equation for the structure. The unknown displacements are written in term of the loads by using the load-displacement relations, and then solved for displacements. Once the displacements are known, the other response characteristics can then be determined by using the compatibility equations and member force-deformation relations (Hibbeler, 2009; Kassimali, 2005). Using Stiffness method in analyzing structures provides a unique solution. It does not require intervention from the user, such as the choice of the primary structure in the Force or Flexibility method.

Slope Deflections method is characterized by solving simultaneous equations, while the Moment Distribution method is characterized by the application of a series of '*converging corrections that allow direct calculation of the end moments*' (Hibbeler, 2009). At Curtin, these two methods are taught in two units, i.e. Structural Analysis 267 for analysing beams, and Structural Analysis 268 for analysing frames, with or without sidesways.

As scaffolding approach is useful to teach the basic skills to develop students' competency in applying a new tool (Scaffolding as a Teaching Method n.d.), I decided to adopt this practice in teaching the first unit of Structural Analysis subject, i.e. in Structural Analysis 267 for second year students. In this unit, students are introduced for the first time on the Slope Deflection method and Moment Distribution method to analyze beams under various loading and/or other external conditions.

Design of Scaffolding

In Structural Analysis 267, methods of Slope Deflection and Moment Distribution generally are delivered in the last five weeks in the semester, following a series of lessons on the analysis of determinate structures, determination of beams' deflection and rotation, and introduction of the analysis of the indeterminate structures. Prior to the delivery of the two new methods of analysis, students already gained basic skills to determine or knowledge of equilibrium, bending moment and shear force diagram, free-body diagram, fixed-end moments, compatibility, and load-displacement relations. This is the 'actual developmental level' at the beginning of the delivery of the new topics. It is imperative to determine the right ZPD to make the use of Scaffolding Approach a success.

The two steps described by Lange in 2002 as mentioned by Lipscomb et al (2004) were followed by the author in the application of the Scaffolding Approach in teaching Structural Analysis, i.e.:

'Development of instructional plans to lead the students from what they know to a deep understanding of new material'.

This step involves the introductory part to raise students' interest on the topics, as well as to help them to connect with the prior knowledge. It is then followed by the delivery of the history and the theoretical background of the method. The delivery is normally performed in traditional lecture format within a set time frame which is normally kept minimal. After providing one or two examples on the use of the method to analyze structures, it will be followed by distributing worksheet equipped with procedures or steps, formulas, hints, tables and arrows (for Moment Distribution method),

which serve as scaffolds. The scaffolds are carefully selected and prepared to make sure the activities are within the students' ZPD.

A series of worksheets are prepared in advanced with gradual removal of supports provided. Some examples of the worksheets are shown in the Appendix section of this paper. Students will then work either in group or alone to carry out the tasks in the worksheet. At this stage, lecturer turns role to become coach, providing additional help or clarification to those in need. Students are allowed to make mistakes and to progress in their own pace. If common mistake is found, further clarification for the whole groups will be given. Student who finishes earlier will be given the next worksheet, which might be similar to the previous one to reinforce the skill or from different case. Sessions are intermittent with discussion to reflect the case they are doing or on the usefulness, benefit and limitation, and the connection of the method with students' prior knowledge.

'Execution of the plans, wherein the instructor provides support to the students at every step of the learning process.

As students are busy with their worksheets, I take time to move around to see how they progress. In most cases, I let them make mistakes. I believe students learn from their mistakes. However, before going too far to the wrong direction, additional help or hints or clarification will be given to individuals or groups concerned, or if the common mistake is found, then the clarification will be given to the whole groups. The development of students' confidence in using and understanding the new tool to analyze structure and its behavior is the main learning outcome. Thus, it is imperative to keep the level of students' frustration minimal in every step of the process by providing just enough support. Lecturer plays role as coach for students in carrying out the task given.

Smart students normally finish all the worksheets earlier. For them, I normally prepared some more challenging problems or cases to analyze with no support provided.

Reflection

The most convincing evidence of success on the use of Scaffolding Approach in learning Structural Analysis is students' engagement. All students actively participate in their learning, not only passively listen or even engage in different activities. As lecturer role is turned to be more like coach, and personal attention is given to every group or individual, the learning environment naturally becomes more relax and the lecturer-students relationship becomes more informal, and thus invites more questions and discussions to happen. In most cases, I was able to identify my students' capability early, and extra attention was able to be given to weak students. A sense of accomplishment is normally shown by student who completes the task. She or he will then ask for the next worksheet happily. It is a sign of students' motivation to learn.

Students are led to reflect on the method, its strengths and weaknesses, and its connection with their prior knowledge. Using this approach, students are encouraged to discover the knowledge and to gain the skills by themselves. Often, students expressed their "*ah ha!*" or "*eureka!*", after acquiring some knowledge by themselves through guided activities.

However, despite the benefits mentioned above, a lot of preparation is needed to apply this approach. Most of all is the preparation of series of worksheets with carefully prepared scaffolds, which is faded or removed gradually along with students' growing competence. Since there was no examples available, the worksheets series were developed based on the 'trial and error' basis, by assuming students' ZPD. With the constraint in time and the area needed to cover, very careful attention is needed when designing the series of tasks, as this approach tends to consume more time than the traditional way. On the other hand, lecturer's role has to be minimized to the level of coach, not as dominant as in the traditional lecture. This might not be easy for the beginning as lecturer is used to teach everything.

On the series of worksheets or tasks that have been used, I found that several modifications are needed. Some supports provided are not enough to bridge the gap between students' current skill and knowledge with the skill and knowledge that they still do not know, for example in the step of determining fixed end moments. As the beams with fixed ends are already in the category of indeterminate structures, most of them are not familiar yet. The use of plastic ruler to visualize fixed-end beams qualitative deflected shape is found useful.

Overall, students have reported themselves feeling more confident and quicker to grasp the concept of Slope Deflection method and Moment Distribution method in analyzing structures, moreover their final results are comparable to those who study at the mother campus, which were taught using different approach. The following quotations are taken from the end-semester on-line eVALUate Teacher Evaluation and eVALUate Full Unit Report for Structural Analysis 267 unit. eVALUate is an online tool available at Curtin for students to provide feedback to teachers and to the units itself.

"The best teaching method I have ever seen"

"A very good lecturer. Knows this unit inside out. Approachable and gives student attention individually"

"Very helpful, built up our confidence when trying to solve problems.....and give us a good understanding on the topic"

"It was effective as it helped in grasping the concept over a short period of time"

These responses point toward an encouraging level of students' enthusiasm and engagement in their learning.

Concluding Remarks

I have found that the Scaffolding Approach is appropriate practice to engage students in their learning, especially in learning Slope Deflection and Moment Distribution methods in Structural Analysis subject. Every student participate actively, with the stronger students are given opportunity to progress faster. Weak students are given better attention together with opportunity to progress in slower pace.

I found also that this approach is well suited to deliver the introductory part of the Slope Deflection and Moment Distribution methods, as in the case of Structural Analysis 267. For the more advanced topics, the suitability of the approach is needed more trials.

Despite some weaknesses, I found this approach is worth to apply as one of the approaches to teach Structural Analysis to Civil Engineering students. Students are helped to learn by themselves or in a group through properly designed guided tasks, which are removed gradually along with students' growing competence.

Students' responses through eVALUate show their very high level of satisfaction upon this unit and upon the teaching style adopted, and moreover their results are comparable to those achieved by their counterparts in mother campus, which are taught using different approach.

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APPENDIX: Sample of worksheets for Moment Distribution Worksheet #1

Analyze the continuous beam shown below using the Moment Distribution method, and determine the support reactions, draw the shear force diagram, bending moment diagram, and qualitative deflected shape of the beam!



Fixed-End Moments (Please refer to the table for Fixed End Moments)

FEM_{AB}=

FEM_{BA}=

FEM_{BC}=

FEM_{CB}=

Member stiffness & Distribution Factor (DF)

$$K_{BA} = \frac{EI_{BA}}{L_{BA}} = DF_{BA} = \frac{K_{BA}}{K_{BA} + K_{BC}} =$$

$$K_{BC} = \frac{EI_{BC}}{L_{BC}} = DF_{BC} = \frac{K_{BC}}{K_{BA} + K_{BC}} =$$

Note: DF for fixed end A =0; DF for hinge end C=1

Carry Over Factor (COF)

COE	COE	COE	COE
COL ^{AB}	COP _{BA} =	COT_{BC}	COLCB-

Moment Distribution Table

Joint	Α	I	В	С
Member	AB	BA	BC	СВ
COF				
DF				
FEM				
Balance		/		/
Carry Over	×		×	•
Balance		,		/
СО	×		×	•
Balance				/
СО	×		×	•
Balance		1		/
СО	×		×	•
Balance		1		/
СО	×		×	•
Balance				
Final moments				

Check the equilibrium of the final moments, and then draw the free body diagram, determine the support reactions, draw shear force diagram, bending moment diagram & qualitative deflected shape.

Worksheet #4: Moment Distribution (Support settlement case)

Use the moment distribution method to analyze the continuous beam shown below, to determine the support reactions and to draw the shear force diagram, bending moment diagram, and qualitative deflected shape. Due load applied, support B settles downward of 20 mm.



FEM_{CB}=

Member stiffness & Distribution Factor (DF)

Moment Distribution Table

Joint	Α	В		(D	
Member	AB	BA	BC	СВ	CD	DC
COF						
DF						
FEM						
Final moments						

Check the equilibrium of the final moments, and then draw the free body diagram, determine support reactions, draw shear force diagram, bending moment diagram & qualitative deflected shape.



Arousing the College Students' Motivation in Speaking English

through Role-Play

Xu Liu

Beijing City University, Beijing 100094, China Tel: 86-10-6244-2786 E-mail: liuxu@bcu.edu.cn

Abstract

English as a tool of communication has been playing an important part in acquiring cultural, scientific and technical knowledge, for collecting worldwide information and carrying out international exchange and cooperation. Improving college students' oral English level has become more and more important. Based on Richard E. Mayer's theory of motivation and the advantages of role-play on the aspect of arousing the motivation of learning, this paper not only explores some of the theories of communicative teaching methods, but also proves the importance of the motivation of learning. Two kinds of English teaching activities for oral English class were designed which are oral English tests and role-play activity. The objective of this research is to arouse the college students' motivation in speaking English. And the project hypothesis is that using the activity of role-play is more effective in arousing the college students' motivation in speaking English than using oral English tests. The researcher divides the students who are the freshmen of Beijing City University into two groups - Target group and the Control group. And the researcher does the research by using observation notes, the questionnaire and the interview data collection methods. Through the four weeks research, it is proved that the students in the Target Group which use role-play activity become more interested in speaking English than the students in the Control Group which use oral English tests. So from the result of this research, we know that in our Chinese university, the teachers can use some communicative classroom activities such as role-play to arouse the students' motivation of English speaking. There are also some limitations of this research for example, because the sample size was small, the results might not be typical; and the time of the research was too short, so maybe there were some unstable data.

Keywords: Motivation, Communicative teaching methods, Oral English test, Role-play

1. Introduction

What should a course in spoken English production prepare a student to do? The intention is, often, that the student should be able to 'express himself' in the target language, to cope with basic interactive skills like exchanging greetings and thanks and apologies, and to express his 'needs'- request information, services etc (Brown & Yule, 2000, p.27). Mayer had also stated, "When students are motivated to learn, they try harder to understand the material and thereby learn more deeply, resulting in better ability to transfer what they have learned to new situations" (Mayer, 2003, p.459). So let the students have the motivation of speaking is very important to English teaching. But nowadays, most college students are passive in oral English learning. They are tired of the traditional methods of teaching English and not interested in reading or just reciting the English texts. Therefore why the students have the low motivation of learning oral English and how to solve this problem become the key points of improving the researcher's English speaking teaching.

The communicative language teaching is a teaching methodology, which requires learners to practice in real situations. The communicative activities are based on the Western humanistic philosophy (Nitko, A. J. & Brookhart, S. M. 2007). One typical classroom activity is role-play. And Littlewood (1981) summarized some of the contributions that communicative activities can make to language learning under four headings: 1. they improve motivation, 2. they provide "whole-task practice", 3. they allow natural learning, 4. they can create a context which supports learning.

From the above theories, the researcher designed this research by using the communicative language teaching method – role plays. This research is chiefly based on the project that the researcher conducted within four weeks' time. And two kinds of English teaching activities for oral English class were designed which are oral English tests and role-play activity. The objective of this research is to arouse the college students' motivation in speaking English. And the project hypothesis is that using the activity of role-play is more effective in arousing the college students' motivation in speaking English than using oral English tests. The researcher divided the students into two groups which was the Target group and the Control group. And she did the research by using observation notes, the questionnaire and the interview data collection methods. The project was implemented and proved that the students in the Target Group which use oral English tests.

2. Problem Identification and Analysis

2.1 Project problem

Nowadays, most college students are active in the real life but passive in English learning. This phenomenon is obvious with the researcher's students. Most of them have low motivation in English study especially in the classroom of oral English. They are tired of the traditional methods of teaching English and not interested in reading or just reciting the English texts.

The researcher has been teaching English in Beijng City University for more than one year. All of her students are non-English major students. They are fond of showing off themselves in the daily life, but they are passive on the oral English class and have low motivation in speaking English. The researcher had used an oral English test for each week to arouse the students' extrinsic motivation of speaking English, but it had no obvious changes. Because motivation colors and shapes students' involvement in learning and it stimulates feelings that students associate with these experiences (Winne, 1985), why the students have the low motivation of learning oral English and how to solve this problem become the key points of improving the researcher's English speaking teaching. From above the project problem of this research is most college students have low motivation in speaking English.

2.2 Problem analysis

Two analytic methods are used to analyze the project problem. They are cause analysis and observation.

2.2.1 Cause analysis

At this stage, the researcher starts with a list of factors that may contribute to the causes: 1) the teacher's side, 2) the students' side, 3) the classroom activities design.

1) The teacher's side

a. Because the teacher just graduated from Beijing Foreign Studies University, she must be lack of some special knowledge in English field and teaching experiences.

b. The teacher always let students read and discuss some dialogues and topics in the text book, but didn't give any related information from real-life.

c. The teacher took more control of the English speaking class and didn't give students' chance to express themselves freely.

- 2) The students' side
- a. Some weak students lack confidence in expressing themselves when do the exercises individually.
- b. The levels of English are different among all the students.
- c. Some students are not interested in learning English.
- d. They are freshmen who are about 19 years old, so they have their own opinions and don't like controlled by others.
- 3) The classroom activities design
- a. Just answer questions one by one. That is boring for the students.

b. Make up only two big groups with all the students to discuss the topics by using the language in the text book. As a result the more active the top students are the less active the other students are.

c. Oral English tests for each week made most students too nervous to be afraid of learning oral English.

2.2.2 Observation

At this stage, the researcher observed two oral English classes. One is her colleague's class in the same university; the other is a foreign teacher's class in Beijing Normal University. Then she compared the two classes with her own class, and got several conclusions.

1) Compared with the colleague's oral English class

a. Different with the researcher's oral English tests for each week, the colleague took a small test on each class. Although the students were serious on her class, the atmosphere of the class was depressing.

b. Just like the researcher, the colleague used the traditional teaching methods on her class, which made most her students bored.

2) Compared with the foreign teacher's oral English class

a. Different with the researcher's reading the dialogues one by one on the class, the foreign teacher made all the students into several small groups to do the exercises. And he took role-plays and group discussions as the main classroom activities. All of the students were active on the class, and showed great motivation of doing the exercises.

b. Because the students of the foreign teacher's class were freshmen of Beijing Normal University, their English level maybe different with the researcher's students. But they are the same age.

2.3 Results of problem analysis

After making above analysis, the researcher feels quite strongly that her ineffective design of classroom activities is the primary cause of her students' low motivation in speaking English. So the researcher determined to design a project that can render more effective classroom activities to solve the problem.

3. Project Objective and Hypothesis

3.1 Project objective

The project objective of this research is to arouse the college students' motivation in speaking English.

3.2 Project hypothesis

The project hypothesis is that using the activity of role-play is more effective in arousing the college students' motivation in speaking English than using oral English tests.

4. Project Rationale

The project to arouse college students' motivation in English speaking is designed based on the following theories on the importance of priming the learner's motivation to learn, the advantages of communicative language teaching, and the features of role-play activity.

4.1 The importance of priming the learner's motivation to learn

Motivation is an internal state that initiates and maintains goal-directed behavior. It is an inducement to action (Mayer, 2003, p.460). Mayer had also stated, "When students are motivated to learn, they try harder to understand the material and thereby learn more deeply, resulting in better ability to transfer what they have learned to new situations" (Mayer, 2003, p.459). If the students can use the language for themselves, then they become aware that they have learnt something useful and are encouraged to go on learning: perhaps the most important factor is to keep up motivation in the learning process itself (Shi Zheng, 2006). Many researches in the motivation field proved that there was an inseparable relationship between motivational strength and oral English proficiency. So using what kinds of good methods could help us finish our oral English class excellently was very important to the English teachers.

4.2 The definition and advantages of communicative language teaching

Language does not occur in isolation; it occurs in a situational and social context and is used to express social and functional meanings. The speaker of the language uses his linguistic competence and communicative competence for successful communication. (Gu Yueguo, 1998, p.49). So linguistic activities and communicative activities are both important parts of our English reading curriculum design. The communicative language teaching is a teaching methodology, which requires learners to practice in real situations. The communicative activities are based on the Western humanistic philosophy (Nitko, A. J. & Brookhart, S. M. 2007). One typical classroom activity is role-play.

An English teacher whose name is Shi Zheng did many researches about the communicative language teaching had said in his article:

The communicative approach is an effective teaching method, which helps the students to develop the ability to use a new language practically. The students and teachers should put themselves into the "real" scene. Gradually, they accumulate the perceptual knowledge of English and then develop the sensibility of this language, thus, to achieve the purpose of grasping a language (Shi Zheng, 2006).

Littlewood (1981) summarized some of the contributions that communicative activities can make to language learning under four headings: 1. they improve motivation, 2. they provide "whole-task practice", 3. they allow natural learning, 4. they can create a context which supports learning.

4.3 The features of role-play activity

"Role-playing" is one method of getting the students to imagine they are someone else and play that part (Shi Zheng, 2006). Doing role-play activities is a way to practice, or rehearse, situations that may happen in real life. The purpose of this is to prepare the students for the real-life language use (Gu Yueguo, 1998, p.89). Also role-plays will be the most commonly used method to ensure that the students can use effectively what they have learned in real communication (Gu Yueguo, 1998, p.239).

Richards suggests that collaborative communication activities such as role plays have the following characteristics:

They provide opportunities to practice strategies for opening, developing, and terminating conversational encounters.

They require learners to develop meanings collaboratively.

They necessitate the use of turn-taking rules.

They practice use of conversational routines and expressions.

They involve learners in different kinds of roles, necessitating use of different styles of speaking.

They require negotiated completion of tasks.

They involve information sharing.

They focus on comprehensible and meaningful input and output.

They require a high degree of learner participation.

(Richards 1985b p.83)

5. Project Design

5.1 Target Group and Control Group

Two groups of students will be needed for comparison. The Target Group, contained with 20 students of Class One, who will use the role-play activities as the main classroom activities. They will be asked to spend 25 minutes to do the role-play activity at the production stage in each 45-minute lesson. And the Control Group, contained with 20 students of Class Two, who will be taught in the traditional ways and use the English tests method. They will be asked to do an oral English test in each week. The sample groups are consisted of two classes of freshmen in Beijing City University, and they have the same English level at the beginning of the project. They were taught by the same teacher, but in different ways.

5.2 Communicative teaching method to be used in the project

Drawing on the discovery of the problem analysis and rationale quoted above, a project is designed to arouse the students' motivation in speaking English by using role-play activities in their classroom learning.

5.3 Research tools

Three data collection instruments will be used in the research: observation notes, questionnaire, and interview notes.

6. Project Implementation

6.1 The procedure of the project implementation

Week I

Week I was the beginning of the project implementation. So in the first week, to the Target group, it was very important to make students enjoy doing the activity of role-play. So based on the textbook's Unit Three, the researcher used the role-play activities as the main classroom activities to the target group which was Class One. They were asked to spend 25 minutes to do the role-play activity at the production stage in the 45-minute lesson, and learned how to asking the information in the real-life conditions. Students got into groups of four, each one with a different role. The teacher hung a picture of a birthday part on the blackboard, also wrote a situation and some roles on the blackboard. From this activity students could practice the way of asking the information with the question words "Who, What, When, Where, Why, How...".

At the same time the researcher used an oral English test activity on the class to the Control group which was Class Two. The students were asked to do a little oral English test of using the question words "Who, What, When, Where, Why, How..." which they just learned from the textbook's Unit three at the production stage. And the researcher told the students the results of the test would be recorded.

Week II

Week II was a practicing week. So in the second week, to the Target group, it was very important to make students enjoy speaking English from the way of doing role-play activities. So based on the textbook's Unit Four, the researcher used the role-play activities as the main classroom activities to the target group which was Class One. They were asked to spend 25 minutes to do the role-play activity at the production stage in the 45-minute lesson, and learned how to asking for and giving directions in the real-life conditions. Students got into groups of four, each one with a different role. The teacher also wrote a situation of asking and giving directions on the blackboard. From this activity students could practice the way of asking and giving directions just like: "Where's...? How to get to...? ...over there. Turn left. Turn right."

At the same time the researcher used an oral English test activity on the class to the Control group which was Class Two. The students were asked to do a little oral English test of using the sentences "Where's...? How to get to...? ...over there. Turn left. Turn right..." which they just learned from the textbook's Unit Four at the production stage. And the researcher told the students the results of the test would be recorded.

Week III

Week III was an improving week. So in the third week, to the Target group, it should improve the role-play activity and

check if students could speak English autonomously. So based on the textbook's Unit Five, the researcher used the role-play activities as the main classroom activities to the target group which was Class One. They were asked to spend 25 minutes to do the role-play activity at the production stage in the 45-minute lesson, and learned how to asking for things in the real-life conditions. Students got into groups of four, each one with a different role. From this activity students could practice the way of asking for things just like: "...lend me..., I want..., How much..., Have you got...? Here you are."

At the same time the researcher used an oral English test activity on the class to the Control group which was Class Two. The students were asked to do a little oral English test of using the sentences "...lend me..., I want..., How much..., Have you got...? Here you are..." which they just learned from the textbook's Unit Five at the production stage. And the researcher told the students the results of the test would be recorded.

Week IV

Week IV does not have any teaching tasks. Instead it was for consolidation and data collection.

6.2 Data collection

As planned, the students of both groups were asked to do the questionnaire and the interview after the project.

6.2.1 Observation notes

The researcher took the observation notes on each class as well as after each lesson to help record the students' response and the researcher's own observation. At the end of the project, the researcher could see if there were any changes with the motivation of the two groups' students in speaking English on the class.

6.2.2 Questionnaire

After the project, the Control Group and the Target Group were asked to fill out the post-questionnaire, which investigated their attitudes and opinions about the role-play activity and the oral English test method, and showing the result of the project as well. The questionnaire consisted of 10 statements and mainly related with the aspects on which teaching method could arouse the students' motivation of speaking English. And let students choose one activity from the three classroom activities which the researcher had used in the oral English class. The questionnaire cost about 5 minutes and it was finished in the fourth week oral English class. Based on the midterm oral English exam results, the participants of each group were divided into three small groups which were one groups of excellent students, one groups of average students, and one group of low mark students. The students were assured that their names would be kept anonymous in order to express their true ideas and attitudes about language learning.

6.2.3 Interview

The interviews of this research were took place in the researcher's office after the project. The researcher took the interviews separately to the students of the Control and Target groups. The researcher chose 2 excellent students, 2 average students, and 2 low mark students from each group. Therefore, the total interviewees were 12 students. The researcher asked them the same questions about the three texts (Unit 3-Unit 5) which she had taught them in those three weeks. And the questions consisted of several key elements in them: more interesting and like to tell something about the text / interesting / just so-so / boring. For example, I asked one excellent student, "Which texts in our learned three texts do you think is interesting?" Then the researcher must ask this question to other 11 students. The interviews were taken place one by one, and each interview of one student would last about 5 minutes.

6.3 Major deviations

The researcher had planed to take the interview during the project. But because the project time was limited, the researcher began the interview after the project.

7. Results and Discussion

7.1 Research results

7.1.1 The results of the observation notes

The researcher compared the observation notes.

In the observation notes for the first week, the Target group's students were as the same as the Control group's students who were done the tasks almost under the pressure from the teacher. And no students in Target group did the role-play actively at first. But during the activity, more and more group members hung their hands up and wanted to do the activities.

In the observation for the second week, some group-students in the Target group were asked to do the role-play actively. But the Control group's students were also on under the pressure from the teacher, they could finish the oral English test activity. At last, in the observation for the third week, most group-students in the Target group were asked to do the role-play actively, while the Control group's students were also as before.

So from the observation, the researcher found that during the three weeks of teaching, the students of Target group became more and more active in practicing role-play activities and they had more and more strong motivation of speaking English on the class, while the situation was obviously different in the Control group. The students of Control group were always passive in speaking English and were afraid of speaking English. They often worried they had some errors in the oral English tests. It seemed that they studied English tests and wanted to speak English well just for passing the oral English tests. It indicated that the experimental teaching method could be helpful for students on the aspect of arousing the motivation of speaking English.

7.1.2 The results of the questionnaire

The researcher divided each group's students into three types to do the questionnaire according to their midterm oral English exam marks. They were 4 excellent students, 4 average students, and 4 low mark students in each group. The questions in the questionnaire are mainly concerned about which teaching method the students thought could arouse their motivation of English reading. This quantitative data were calculated manually. The descriptive statistic analyses were applied to calculate the percentages concerned in the questionnaire. There were no missing data in the 24 sheets of questionnaire papers.

a. Control group:

The researcher conducted the three small groups' statistics separately from the Control group, and use the total number of A (traditional method) or B (oral English tests method) or C (other methods) in each group divided by the total number of questions to get the percentages. There are totally 28As, 28Bs and 28Cs for each small group. The results are 13As, 14Bs, and 1C in the excellent students' group; 11As, 11Bs, and 6Cs in the average students' group; 10As, 1B, and 17Cs in the low mark students' group. Then compared the results of these three groups and calculate a common result. Then the researcher got three different results. The result was as follow Table1.

Insert Table 1 Here

The table 1 illustrated the percentage of excellent students chose traditional method was 46%, oral English tests method was a little higher than the traditional which was 50%, and other methods was 4%; The percentage of average students chose traditional method was 40%, oral English tests method was as the same as the traditional method which was also 40%, and chose other methods was 20%; At last the percentage of low mark students chose traditional method was 36%, oral English tests method was only 4%, and other methods reached up to 60%. The results obtained from the quantitative analysis were listed in Figure 1.

Insert Figure 1 Here

From the Figure 1 we could obviously see that excellent students and average students thought the teaching method of traditional and oral English were just so-so, and they did think these two methods aroused their motivation of English speaking highly. And the low mark students even thought the oral English tests method was more terrible than traditional methods. And they thought there must be some other methods could arouse their motivation of speaking English.

b. Target group:

Then the researcher used the same way as above and calculated the percentage of each activity which different levels of students form the Target group chose in the questionnaire. There are 11As, 16Bs, and 1C in the excellent students' group; 5As, 20Bs, and 3Cs in the average students' group; 3As, 24Bs, and 1C in the low mark students' group. Also the researcher got three different results just as Table 2.

Insert Table 2 Here

The Table 2 illustrated the percentage of excellent students chose traditional method was 39%, role-play method was more than the traditional which was 57%, and other methods was 4%; The percentage of average students chose traditional method was 18%, role-play method was much higher than the traditional method which was 71%, and chose other methods was 11%; At last the percentage of low mark students chose traditional method was only 11%, but role-play method reached up to 85%, and other methods was 4%. The results obtained from the quantitative analysis were listed in Figure 2.

Insert Figure 2 Here

From the Figure 2 we could obviously see that excellent students didn't have great changes on using what methods could arouse their motivation of speaking English, but there were great changes to the average and low mark students. They thought there were great gaps between traditional method and role-play method on the aspect of arousing their motivation of English speaking. Most of them thought these two methods aroused their motivation of English speaking
highly.

c. the comparison of the two group's questionnaires:

From the above tables and figures, we could easily see the percentages of oral English tests method were almost the same and even lower than the traditional method to the students in Control group. But we could also see the percentages of role-play method were much higher than the traditional method. So we could conclude that using the activity of role-play is more effective in arousing the college students' motivation in speaking English than using traditional methods and oral English tests.

In addition, the percentage of low mark students chose role-play activity were much higher than the excellent students, so we could say role-play activity was more effective to the low mark students than to the excellent students on the aspect of arousing students' motivation in English speaking.

7.1.3 The results of the interviews

At last the researcher calculated the students' answers in the interviews. Then compared the results of the Control group with that of the Target group and got the result as follow Figure 3:

Insert Figure 3 Here

From the scheme 3, we could easily see that the wave of Control group was smoothly while the wave of Target group was obviously up. So we could conclude that the two group students had different expressions on the three same texts. The students of Control group which was asked using oral English tests activities always thought the texts were just so-so, and didn't have more motivation of learning the texts. But the students of Target group which was asked using role-play activities thought the texts were more and more interesting. So from the above results, we could conclude that using the activity of role-play is more effective in arousing the college students' motivation in speaking English than using oral English tests method.

7.2 Discussion

The comparison of the Control Group's results and the Target Group's results was obviously proved that, compared with the traditional teaching methods, there were not any obvious changes of using oral English tests method, but there were great changes of using role-play activity method on the aspect of arousing the students' motivation of English speaking.

Shi Lan's (2004) study suggested motivation, language, and reading-related activities should "spread" throughout the whole process of English teaching. And an interesting task could often compensate for an uninteresting text. That was just the same as the results of my interviews. And at the same time I found that using role-play activity could arouse the low mark students' motivation of speaking English more effectively than to the excellent students from the results of questionnaire, and more obvious to boys than girls.

8. Conclusion

8.1 Research findings

The present study is chiefly based on the project that the researcher conducted within four weeks' time. It aimed to arouse the students' motivation of English speaking. In the study, two kind of English teaching activities for oral English class were designed according to the result of problem analysis. The project was implemented and proved that the students in the Target Group became more interested in speaking English than the students in the Control Group.

The comparison of the Control Group's results and the Target Group's results was obviously proved that, compared with the traditional teaching methods, there were not any obvious changes of using oral English tests method, but there were great changes of using role-play activity method on the aspect of arousing the students' motivation of English speaking. So with the results of questionnaire and interviews the researcher got the same conclusion with what she had observed during the oral English classes. That was using the activity of role-play is more effective in arousing the college students' motivation in speaking English than using oral English tests.

Because helping to change the learner's knowledge—manifested in changes in academic, motor, social, and personal behavior—is what education is all about (Mayer, 2003, p.15), it is very important in our English teaching to help students obtain the language skills in English. Also because with interest-based learning students can make qualitatively better learning (Mayer, 1998, p.56), we should raise the students interests of English reading in our English teaching. This study proved that except the individual interests of learning, situational interests was also very important.

8.2 Limitations

Firstly, the sample size (20 students to each group) was small, so the results might not be typical.

Secondly, the participants were freshmen in Beijing City University who were adjusting to the new learning habits, so the results of the research might not be very stable.

Thirdly, because of the interesting elements of each text the researcher taught in the class were different to each students,

it might affect the results of the research.

Fourthly, the time of the research was too short, so maybe there were some unstable data.

8.3 Overall significance

Motivation colors and shapes students' involvement in learning and it stimulates feelings that students associate with these experiences (Winne, 1985). Before learning people set out to do with a will to learn which is called goal-directed behavior. Whenever students have a goal, there is something to achieve (Waxman & Walberg 1991). It is clear that the motivation can affect one's learning efficiency deeply. Using what kind of methodology in our English teaching can arouse our students' motivation of learning is very important. So from the result of this research, we know that in our Chinese university, the teachers can use some communicative classroom activities such as role-play to arouse the students' motivation of English speaking. Thereby, we can help our students learn English well.

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Table 1.

methods percentage students' type	Traditional methods	Oral English tests method	Other methods
Excellent students	46%	50%	4%
Average students	40%	40%	20%
Low mark students	36%	4%	60%

Table 2.

methods percentage students' type	Traditional methods	Role-play activity method	Other methods
Excellent students	39%	57%	4%
Average students	18%	71%	11%
Low mark students	11%	85%	4%







Figure 2. the result of the Target group's questionnaire



Figure 3. The comparison of Control and Target group's interviews

(Additional explanations of the scheme 3: 1 = boring, 2 = just so-so, 3 = interesting, 4 = more interesting and like to tell something about the text. The points of each line meant the three units that students had learned for those three weeks in the class.)



The Prospects for the Implementation of School-Based Financial Management in Taiwan

Hsuan-fu Ho (Corresponding author) Graduate School of Educational Administration and Policy Development National Chiayi University, Chiayi, Taiwan Tel: 886-922-910-101 E-mail: hfho@mail.ncyu.edu.tw

Abstract

The current approach to solving educational problems in Taiwan is to adopt policies employed in Western countries. However, given the very different cultural and educational environment of Asia, not all policies effective in Western countries are necessarily applicable to schools in Taiwan. Therefore, an examination of the feasibility and applicability of these policies is essential. This study examines whether the school-based financial (SBF) management that is effective in Western countries is applicable to schools in Taiwan. Focus group interviews composed of government officials, scholars, principals, department directors, and teachers were conducted, and a questionnaire survey was administered to 1000 school personnel. The results indicate that the SBF model that is effective in the West is also applicable to schools in Taiwan, and that the Taiwanese government should adopt SBF, while adapting it to suit the local environment.

Keywords: School-based financial management, Taiwan, Decentralization

1. Introduction

Facing imminent defeat by Communist forces in the long-running Chinese Civil War, in 1949 the ROC government abandoned the Chinese mainland and retreated to the island of Taiwan. Afterwards, Taiwan was governed under martial law for nearly four decades, during which time its educational finance system was strictly and centrally controlled by the government, and up to the present almost no major improvements in school finance have been implemented. When marital law was finally lifted in 1987 there were widespread calls for educational decentralization. However, after such a long period of strict government control there was a serious lack of knowledge about school finance. Thus Taiwan's school finance system remains highly centralized and contains many serious problems.

First of all, since few MOE officials have any teaching experience, they tend to make resource allocation decisions which are not in accordance with the actual needs of local schools. Although some officials in the central government are knowledgeable about local schools, with so many schools in Taiwan, it is simply not possible to establish a unified budget formula that will fit all schools.

In order to apply its unified formula and prevent abuse of funds, the government spends considerable resources and manpower every year on supervising school financial activities. However, many principals still choose to risk their careers by breaking the rules in order to make more effective use of school funds. Moreover, due to the inflexibility of the current centralized financial system, certain financial exigencies may not get adequate attention in time.

It is widely believed that the current system is not efficient. Individual schools typically do their best to use up all their current funding, fearful that any surplus at the end of the year will result in budget cuts for the following year. Moreover, the wasting of public money has been worsened by a recently-enacted rule by which a principal will be punished if his or her school has a yearly budgetary surplus of more than 15%.

Unfairness is another serious problem of the current system. Since special grants are determined by the government, and there are no objective standards for determining grant amounts and which schools will receive them, many have complained that the distribution process is based mostly on the relationship between the principal and the government officials, rather than on the school's performance or needs.

As a result, many scholars suggest that the current school finance system in Taiwan requires significant modifications to produce a system that more fairly and efficiently responds to fiscal and instructional goals. Moreover, since many of the financial problems schools are facing can be attributed to the current centralized control system, school-based management, which aims to shift decision-making authority and responsibility from the central to the local level, should be made an integral part of any future reform of the school finance system.

2. Related Literature

2.1 Definition of school-based finance

School-based finance (SBF) is one of the three main elements of the school-based management model, that is,

school-based curriculum management, school-based personnel management, and school-based financial management. As such, SBF includes all of the decentralization concepts of school-based management. Malen, Ogawa, and Kranz (1990) defined school-based management as a formal alteration of governance structures which views the individual schools as the primary unit of improvement, and relies on the redistribution of decision-making authority as the primary mechanism to simulate and sustain improvements. Murphy and Beck (1995) argued that although there are many different definitions of school-based management, it invariably involves school-level autonomy and participatory decision-making.

Young (1995) divides a school's authority into three domains—budget, personnel and curriculum. Odden and Bush (1998) further argue that among these three school-based management domains, SBF management is of great importance, because providing schools with power over their budgets is a prerequisite for bolstering other decentralization reform efforts. However, many scholars have warned that SBF management alone does not improve academic achievement. Rather, only when a decentralized budget is accompanied by other school reforms will there be an increase in the quality of education (Brown, 1990; Thomas & Martin, 1996; Cheng, 1996).

Odden and Picus (2004) summarized the essential elements of an effective SBF system as follows: (1) The government allocates most funding in a lump sum directly to schools; (2) How much money should be allocated to which school is decided by a set formula; (3) The local schools are given the decision-making authority and the responsibility for using the funds; (4) Any leftover funds may be carried over to the following years; and (5) The system is supervised by the general public.

2.2 The merits of SBF

The advocates of SBF argue that those people closest to students— parents, principals, teachers, and school directors—are more knowledgeable about student needs than are the staff in central government offices. Thus, redistributing the financial decision-making authority to local schools ensures that educational funds are spent in a way which is responsive to local needs. Moreover, since various social problems inevitably find their way into schools, schools should be given the authority and responsibility to flexibly and effectively solve such problems in a timely manner (Cheng, 1996; Odden & Picus, 2004).

School-based management emphasizes participative decision making, and the involvement of stakeholders helps create a feeling of ownership which fosters the loyalty and dedication that are necessary for improving education. Moreover, allowing schools to carry over any budgetary leftovers at the end of the fiscal year helps ameliorate school resource abuse, and encourages schools to better use "their own money," which in turn further increases efficiency (Neal, 1991; Harter, 1999).

Using a student enrollment-based formula to calculate the funds for each school improves the fairness of resource allocation and, at the same time, ameliorates political interference. Finally, reviewing and auditing of school expenditures by the stakeholders improves the efficiency of resource allocation and reduces the government's auditing and supervision expenditures (Picus, 1997; Odden & Picus, 2004).

2.3 Problems with implementing SBF

Neal (1991) warns that although SBF management has many merits, it is by no means perfect, and if it is not implemented properly the harm may be even greater than the benefit. He further suggests that the main reason why some schools fail to implement SBF is not that SBF per se is ineffective, but rather the presence of resistance at the central, district and/or school level. Sackney and Dibski (1994) also point out that sometimes policy makers want to appear to share authority without, in fact, surrendering authority.

Picus (1997) asserted that school personnel are often the main factor leading to failure, since some school teachers and principals are just not ready to take on the added responsibilities inherent in SBF. Thus, reforms can be rendered fruitless if the government is not willing to really devolve spending decisions to lower levels, or if school personnel are neither willing nor able to take on additional or new responsibilities. He further warns that if financial information is not sufficiently transparent, SBF can provide increased opportunities for the fraudulent use of educational funds.

Lavacic and Blover (1997) cautioned against the inefficient use of educational resources which could result if a school's personnel do not possess the knowledge and skills required to formulate a sound budget.

Finally, Senge (1990) and Fullen (1991) pointed out that when people try something new, it often takes some time before things get noticeably better, so it is critical that adequate supports are provided in case things get worse at the beginning. Odden and Picus (2004) warned that it takes a great deal of money to implement SBF due to scale, required staff training, and initial subsidies, and that an innovation is doomed to failure if the purpose of the change is mainly to save money or the changes are made too abruptly.

3. Methodology

The research began with an analysis of recent articles and documents in order to integrate the viewpoints of leading

authors in the field regarding the merits, limitations, and implementation of SBF. Thereafter, focus group interviews consisting of government officials, principals, department directors, and school teachers were conducted to re-examine the information collected from the document analysis, and to add important information specific to the school environment in Taiwan.

The findings of the focus group interview identified 14 merits, 9 obstacles, and 13 skills directly relevant to the implementation of SBF, based on which a draft questionnaire was produced and used to obtain information about the opinions of school personnel.

A pre-test was then conducted to determine the reliability and validity of the questionnaire. The draft questionnaire was sent to 250 school personnel (principals, teachers, and accountants), and 226 were returned. Factor analysis was adopted for the validity test, and one question was dropped because its factor loading was only .246, which was much smaller than the acceptable cutoff value of .4. The deletion resulted in a KMO of .873 and a Barlett of .000, and the total variance explained rate was 52.63%.

Thereafter, Chronbach's α was adopted as the main method for testing the reliability of the questionnaire. With a Chronbach's $\alpha = .89$, the questions exhibited very high reliability.! Moreover, from the perspective of changes in Chronbach's α as a result of deleting a particular item, we found no deletion resulted in an increase in reliability, and thus kept all the questions for the formal questionnaire.

The formal questionnaire was delivered to 1000 school personnel in 100 elementary schools. The schools were selected at random from a list of 2,547 schools across Taiwan published by the Taiwan Ministry of Education. We asked each of the chosen schools to administer the questionnaire to one principal, one accountant, three department directors, and five teachers. Only responses received within one month of the initial mailing were included in the study. Of the 793 questionnaires returned within one month, 750 were valid for the analyses.

4. Research Results

The questionnaire was used to assess perceptions of school personnel regarding the adoption of SBF, and to determine the correlation between their demographic characteristics and their perceptions of the merits, obstacles, and skills relating to the implementation of SBF.

4.1 The merits of SBF

The results of the questionnaire identified several major merits of SBF as perceived by school personnel, and their relative importance was ranked. School personnel were asked to respond to the questions on a five-point Likert Scale, with a score of 5 indicating total agreement, and a score of 1 indicating total disagreement. All the merits were given very high scores in the test, with a high of 4.39 for the expectation that SBF will be effective in alleviating the common wasting of educational funds at the end of each year, to a low of 3.99 for the expectation that SBF will help teachers use school funds more effectively and efficiently.

One-way ANOVA (analysis of variance) revealed that the mean merit ratings differed significantly between different positions. Specifically, the mean merit ratings of principals and directors were significantly higher than those of school accountants and teachers (see Table 1).

The interview findings were mostly consistent with the survey results. Almost all interviewees expressed agreement with the merits listed in the questionnaire, and principals tended to be the most supportive of the implementation of SBF, despite knowing that the implementation of SBF may well increase their work loads. This result is also consistent with studies carried out in the West, such as Brown's (1990) study which found that although school personnel were aware of the possible challenges and obstacles relating to school-based management, they were in favor of the new system because they found it enhanced their self-esteem and increased their job satisfaction.

Moreover, as Murphy and Beck (1996) found, principals play the most important role in the implementation of SBF reforms. Thus it was not surprising that among all school personnel, principals gave the highest ratings to the merits of SBF, and that their support is essential to the success of SBF reforms.

4.2 Obstacles to the implementation of SBF

School personnel were also asked to rate the possible obstacles to implementing SBF, and the results indicated the existence of several major barriers. First of all, almost all teachers expressed concern about the widening financial inequity between schools located in the city and those located in suburban and rural areas. This is because the implementation of an SBF system would allow schools to generate funds through parental donations or corporate sponsorships, and, since parents living in Taiwan's urban areas tend to be much more well off than their suburban and rural counterparts, this would result in urban schools receiving much more supplementary funding than suburban and rural schools.

Further, the data suggests that school personnel are skeptical regarding the government's willingness to truly surrender

financial authority to schools. Many interviewees pointed out that grants are the major tool used by the government to control schools, and can also be used to bring into line schools that do not fully obey government rules. Thus, they reason, it is almost impossible for the government to really shift the authority and responsibility for financial decision-making to schools. As a result, many school personnel see SBF as merely a fancy catch phrase used by the government to fool them into thinking that they have more authority than they actually do, or as just another soon-to-be-forgotten reform fad.

The third-strongest concern was that businesses such as textbook companies might shift their marketing focus from the government to the schools, thereby increasing business interference in schools. Such problems are particularly serious in large cities because there are many more businesses around the schools, and it is more lucrative for them to interfere in the procurement decisions of city schools.

The ANOVA analyses of the ratings of the obstacles to SBF indicated significant differences according to the respondent's position in the school, with principals rating the obstacles significantly lower than accountants and teachers. However, the mean rating of obstacles by principals did not differ significantly from that of department directors.

Once again, many scholars claim that principals are the key to success of SBF reforms, and the results show that among all school personnel, principals assign the highest scores to the merits of SBF, and the lowest scores to the obstacles. This enthusiasm for SBF on the part of principals indicates good prospects for the implementation of SBF in Taiwan.

4.3 Knowledge required for the implementation of SBF

What knowledge and skills are required for SBF to work effectively? Since there is little information available in this area, one of the main purposes of the focus group interviews described above was to identify the knowledge and skills required for the effective implementation of SBF.

The results of the interviews indicate that in order to form a sound school-based budget, practical knowledge must be developed for handling cash flow, risk management, interschool competition for resources, and differing student needs. Moreover, school personnel have to possess the interpersonal and communication skills necessary for effectively dealing with competition between departments for scarce resources and factionalism among school personnel—two issues which constitute major barriers to formulating a sound budget. Sound budgeting also requires adequate knowledge of the relevant laws and regulations. Finally, school personnel have to possess knowledge and skills in the area of information collection and distribution, because SBF management requires complete disclosure of budgeting information to ensure that the budget is spent wisely, and to avoid misappropriation of funds.

A questionnaire was produced based on the findings of these interviews and administered to the school personnel. First of all, it was surprising that, overall, school personnel indicated that they already possess sufficient knowledge and skills in almost all the areas relevant to the implementation of SBF. They indicated relatively more confidence in their knowledge regarding general communication, policy making, and the needs of different students, but less confidence in the areas of budget development, risk management, accounting, auditing, and legalities.

As with the obstacles to SBF, the knowledge possessed by participants differed significantly depending on their position. The results of post hoc analysis for variables examined by ANOVA showed that the mean knowledge rating for principals was significantly higher than that for all other school personnel, and the rating for school accountants was significantly higher than that for teachers and department directors.

5. Conclusions and Implications

Because educational resources have been tightly and centrally controlled by the ROC government since 1949, and only meager reforms have been conducted over the past two decades, Taiwan's school finance system has become obsolete and counterproductive. SBF management, which has proven to be effective in the West, seems to be a promising approach to addressing this problem. However, given the very different educational environment, policies effective in Western countries are not necessarily applicable to schools in Taiwan. Therefore it is essential to make a thorough examination of the feasibility and applicability of any models adopted from overseas.

School personnel were asked to rate their agreement with each merit of SBF on a scale of 1 to 5, and the very high average score of 4.22 indicates that school personnel in Taiwan strongly believe that SBF will tremendously enhance the efficiency of school finance, which, in turn, will contribute to their willingness to support the implementation of SBF.

Another finding which supports the feasibility of adopting SBF is that most respondents indicated that they were prepared to implement it, claiming that they already possess the necessary knowledge and skills. This result differs from Western theories and studies which claim that school personnel lack SBF knowledge and skills, and therefore need to be properly trained before they can successfully implement it. This difference may be due to differences in school programs and structures. In Taiwan, the school principal and the director of the department of general affairs are

responsible for such school finance issues as procurement, maintenance, and construction. In the West, however, these duties are generally assigned to the district superintendents and school business administrators. Since school personnel in Taiwan already possess some of the knowledge required for SBF management, it is therefore likely that the adoption of SBF in Taiwan is feasible.

It is also important to realize that in Taiwan principals support SBF more than any other school personnel. The principals strongly agree with all the merits of SBF, and they see the obstacles as less serious. Also, they tend to be more confident than any other school personnel in regards to the knowledge and skills required to successfully implement SBF management. This phenomenon is advantageous to the implementation of SBF because principals play a key role in the success of SBF management, and they shoulder the primary responsibilities for resource allocation. This further strengthens the feasibility of adopting SBF management in Taiwan.

Although school personnel express support and enthusiasm for the implementation of SBF, they also have concerns about various obstacles relating to the implementation of SBF management. The respondents were especially worried about the potential for widening the equity gap between schools located in different geographic areas, and they also expressed skepticism toward the government's willingness to really surrender its authority over resource allocation and decision-making. However, these obstacles are similar to those encountered in the West, and Taiwan can learn from the experience of Western countries in addressing these problems.

Finally, the results of this study indicate that in Taiwan almost all the merits, obstacles, and required knowledge relating to SBF are consistent with the theories and experiences of SBF management in the West. This indicates that the SBF theories developed in the West are largely applicable to schools in Taiwan, and that Taiwan can adopt and adapt the SBF model to serve local needs. The successful adoption of SBF in Taiwan will require giving schools more freedom to formulate their own budgets, establishing a formula to ensure that an appropriate amount of funding is going directly to schools, improving the auditing system, making school budget information more transparent, and assigning responsibilities to school members.

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Position	Ν	М	Source V	SS	MS	F	Sheffé	
(1) Principal	76	4.48	Between	19.40	6.47	27.76***	(1)>(2)	
(2) Accountant	63	4.10	Within	173.73	0.23		(1) > (4)	
(3) Director	336	4.33	Total	193.13			(3) > (2)	
(4) Teacher	275	4.04					(3) > (4)	

Table 1. ANOVA of the merits of SBF according to position

*** P < .001

Table 2. ANOVA of the obstacles to the implementation of SBF according to position

Position	N	М	Source V	SS	MS	F	Sheffé
(1) Principal	76	3.13	Between	5.80	1.94	4.97*	(1) < (2)
(2) Accountant	63	3.44	Within	290.28	0.39		(1) < (4)
(3) Director	336	3.33	Total	296.08			
(4) Teacher	275	3.42					

* P < .05

Table 3. ANOVA of the knowledge required for the implementation of SBF according to position

Position	Ν	М	Source V	SS	MS	F	Sheffé
(1) Principal	76	4.16	Between	125.84	42.0	92.07***	(1) > (2)
(2) Accountant	63	3.78	Within	339.87	0.46		> (3) > (4)
(3) Director	336	3.44	Total	465.71			
(4) Teacher	275	2.88					

* P < .001



Deepen the Teaching Reform of Operating System, Cultivate the Comprehensive Quality of Students

Jianjun Liu

Department of Computer Science and Technology, Dezhou University, Dezhou 253023, China Tel: 86-138 6928 0486 E-mail: ljj@dzu.edu.cn

Abstract

Operating system is the core course of the specialty of computer science and technology. To understand and master the operating system will directly affect students' further study on other courses. The course of operating system focuses more on theories. Its contents are more abstract and the knowledge system is more complicated. Therefore, combined with teaching practice, the author puts forward some opinions and ideas from two aspects, namely the theoretical teaching and the practical teaching, for the course reform and the development of operating system.

Keywords: System simulation, Innovative consciousness, Research-oriented teaching, Autonomous learning

Operating system is the core course of the specialty of computer science and technology. To understand and master the operating system will directly affect students' further study on other courses, and even influence their professional career. This course emphasizes more on theories and the contents are more abstract. Its knowledge system is complicated and virtual. Considering the author's teaching practice, the author advances his views and opinions on the reform and development of operating system.

1. The status and the characteristics of operating system

The operating system is the contact platform of computer's software and hardware. It is the core systematic software of computer. It manages computer's software and hardware sources, controls computer's work flow, coordinates users to use computer sources, and improves computer's work efficiency.

The course of operating system is the core subject. Courses of data structure, principles of computer organization, program design language are the preparing courses of operating system. Courses of computer network, compilers: principle and techniques, multi-media technologies are the successive courses of operating system. Therefore, operating system is a connection in the curricula system of computer specialty (Siyang Liu & Shijian Huang, 2001).

1.1 High intensive special knowledge and wide and complex contents

Operating system gains popularity and development along with the development of computer techniques and the application of computers. Its development experiences these stages: manual operation stage, simple batch processing stage, and time-sharing stage, and network operating system, distributed operating system, and high program design language, data structure, principles of computer organization, and discrete mathematics. In addition, operating system also manages the software and hardware sources in computers and network. These sources are various and complex. Operating system must adapt to these differences in order to manage these sources. Therefore, the contents of operating system are extremely complicated.

1.2 Knowledge points are difficult and under the influences of environment

In operating system, some knowledge points, such as process and PV operation, are hard to be understood by students. These knowledge points cover the whole management process of operating system. If students can not understand these concepts deeply, they can not learn the operating system well. Besides, to compile the operating system is a difficult and complex systematic engineer. Students can not understand the principles of operating system completely or know the source codes of a operating system in a short term. Furthermore, for some operating systems, the sources codes are secrets. Therefore, teachers can not analyze the all details of operating system for students.

1.3 Fast update of contents

Along with the continuous development of computer techniques and network, the contents of operating system must catch up with the steps of computer techniques. As a practical course, operating system must focus on the combination of theories and practices. Help students to understand the instances of present operating systems. Trace today's latest research fruits. Improve students' sensitive recognition. All these issues increase the difficulties of teaching operating system.

1.4 Poor operational abilities in practice

Computer time is a difficult part of operating system. Based on years of teaching experiences, the author explores

several forms for computer time.

(1) Observation and experience

It is the most initial and simple way for learning operating system. By means of observation and experience, students can understand the connotation of operating system.

(2) Read source code

Select the open and complete source codes and help students to read. It can greatly help students to understand relevant techniques. However, it can not improve students' practice abilities and systematic thinking thoroughly.

(3) Program simulation

Students are required to do a lot for this point. For example, students can actualize the producer- consumer simulation and bankers' algorithm by writing programs. It is similar to programming in practice.

(4) System simulation

It is the most ideal practice mode. Students can practice in real or virtual operating system environment. They can directly operate or modify the core of operating system. By this way, students can master the design strategy and techniques of operating system. However, the system simulation requires a lot for students' operating abilities and experiment environment. It is hard to carry out the system simulation.

All these characteristics turn into barriers for improving the teaching quality in a sense. Only by overcoming sorts of difficulties and barriers, can it actualize the goal of operating system: help students to build sound specialty knowledge system and improve students' system analysis and innovation abilities.

2. Probe into the teaching reform of operating system

2.1 Theoretical teaching

(1) Emphasize on knowledge system and case study in content

The teaching contents of operating system have two main clues.

The vertical clue means the development of design idea, processing mechanism, and system structure in history. Take the memory management for example. From the early fixed partition to later changeable partition to today's virtual storage management, we can understand the development of operating system thoughts based on time.

The horizontal clue mainly refers to the differences of specific techniques under different environments. Take the process management for example. Linux has five states. Windows have seven states. Some simple operating systems only have three or two states. Different application aims and environments restrict the design and the application of operating system (Jie Ming, 2004).

To adopt the "viewing the history vertically and viewing the world horizontally" teaching thought can help students understand the development of principles and techniques on one hand, which can make students to master the future development trend more exactly. On the other hand, to analyze cases can help students to understand the differences of techniques and the choices of technological tactics, improving students' ability of analyzing practical issues.

(2) Adopt various teaching methods and inspire students' innovative consciousness

Based on characteristics of college teaching, the application of teaching methods should give priority to three points.

Firstly, the research-oriented teaching method. Viewing from the development of modern education, quality education emphasizes on the "rationality" of learning, working, and exploring. Laying stresses on the understanding to the essence of problems can help students to build such a thinking mode: identify the goal --- find the way for achieving the goal --- explore the idea or technique for solving the problem. In practice, we should focus on the research-oriented teaching, paying attention to simulating the process of identifying knowledge. Make students to sense the innovative process of knowledge. Improve students' interests in exploring research. Inspire students' consciousness of autonomous learning. And improve students' abilities of innovation.

Secondly, the interactive class communication. Interactive communication between teachers and students in class is a useful teaching attempt. The interactive teaching is a teaching method in which students exert their effects. By this way, it can cultivate students' participation consciousness, practice abilities, and thinking abilities, and inspire students' interests in learning, which is in accordance with quality education that advocates the teaching thought of "take teaching as the dominance and students as the subjects", offering more initiative thinking space for students.

Thirdly, adopt the multi-media teaching method. Along with the development and the combination of multi-media technologies and computer techniques, multi-media enrich the teaching mode by its words, images, and videos. In teaching, multi-media can help to inspire students' interests in computer knowledge by introducing various cases and examples, which can well absorb and maintain students' attentions on class. By this way, students can understand and

memorize the knowledge. In a pleasure and relax class, students can master the specialty knowledge better.

(3) Analyze the source codes ----- cultivate students' abilities of reading and understanding

Scene teaching is to position students in a special teaching environment, instruct students to study, and inspire students' interests in autonomous learning. Introduce source code analysis in teaching. Take the real application as the direction. Make students understand the teaching contents deeply. For example, the open source code of Linux offers conditions for the teaching of operating system. By analyzing part of source code of Linux, students can read the process management, the memory management, the file management of Linux. Combine the theories with the practice together. Deepen students' understanding to operating system theories. Meanwhile, students can learn the preciseness, the technological thought, and the special style of real system, which can benefit the cultivation of special computer talents (Zongwan Mao & Li Long, 2002).

2.2 Experiment teaching

Experiments of operating system are more observable but less practical. Considering this fact, the experiments should emphasize on the cultivation of experiment abilities. Reform the experiments and design scientific experiments. Step by step, cultivate students' thinking abilities and knowledge- acquiring abilities. By this way, students can possess better learning habits and techniques of experiments.

(1) Help students to understand theories by experiments

Introduce source code analysis in class. Test the program by experiments, such as process, memory management, and file management. Then, students can master and understand the different functions of operating system. In this process, some students with potentials can participate in the preparation for experiments. They can recognize the experiment in general. It can give them a sense of proud. They can guide and help other students and improve the effects of experiments. Meanwhile, in the process of preparing for experiments, students can discuss problems, communicate with teachers, and drive the innovation of education.

(2) Team practice ----- cultivate the experiment ability by interactive teaching

After finishing a chapter, give experiments for program simulation. Before the experiment, teachers should tell students about the key points and main contents. Students can program the system by themselves. At the computer time, students can discuss problems freely. In a fee environment, students can solve all kinds of problems by discussion, which can greatly inspire students' interests in learning and cultivate their team cooperation spirits. By means of experiments, give each student an objective, fair, and exact analysis and evaluation, which can help students form an objective recognition to their studies, actualizing a significant leap (Xi Chen, 2002; He Lin, 2004).

(3) Open comprehensive experiments, perform system simulation, and improve students' practice innovation abilities

After completing the basic functions of operating system, supply a comprehensive subject, such as the design of a simple operating system. Collect materials, retrieve references, design experiments scheme, develop experiments, ask students to write papers, cultivate students' research and practice abilities, and offer chances for innovative practice. As students have already practiced on operating system's partial functions, teachers should direct students to probe into the whole process of operating system, cultivate students' abilities of analyzing and solving problems, inspire students' interests in autonomous learning, and help students to achieve self education, self perfection, and self development, realizing the improvement of knowledge and abilities.

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International Education Studies



Multicultural Education

Ani Derderian-Aghajanian Washington State University E-mail: ani.ag@hotmail.com/aderderian@wsu.edu

Abstract

"If we knew what we were doing, it wouldn't be called research, would it?" (Albert Einstein). In Diversity Issues in Special Education: Theory, Research, and Practice I will define the diversity perspectives within the context of research, then I will develop an understanding and understand theory as it is related to research, and inform personal stance on the merits of various traditions and their use in multicultural education. Thus, I will consider numerous topics such as, social construction of disability, multicultural education, and race. Moreover, in this paper, I will address multicultural education as a knowledge production movement by discussing Rosenqvist's theories in inclusive and diverse special education classes and adopting the idea of the enhancement of competence and the extension of independence. The enhancement of competence, for example, needs recognition of what the child brings to school, accepting his/her skills, attitudes, ways of thinking and social and language experience. Similarly, the extension of independence concentrates on cultural differences. However, the idea of independence may vary in different cultures.

Keywords: Diversity, Inclusion, Education, Mathematics, Multicultural education, Universal design for Learning (UDL).

Interviewing a leader in the Special Education Field

Jerry Rosenqvist is a professor of Special Education in the department of Educational and Psychological Research, School of Education, at Kristianstad University in Sweden. Professor Rosenqvist was born in 1945 in Sweden. He has worked as a primary and special education school teacher since 1969, and as a special education professor since 1988.

Rosenqvist has been a leader of research projects in special education since 1982, and highly respected in the field. He has conducted three major research projects about the function of schools for the mentally handicapped. Further, he has conducted an evaluation project of schools for the mentally handicapped in the Swedish County of Kronoberg. He is an expert within the Organization for Economic Cooperation and Development (OECD-project) "Active Life for Disabled Youth-Integration in the School" having participated in it from 1989-1995, and he has worked as a consultant for Swedish International Development Cooperation Agency (SIDA) and the World Bank in Pakistan, Jamaica and Tanzania. In the past he has been a special education teacher, especially for students with mental retardation. He has produced about 90 publications of different extent. He has also carried out a review of "Special Education Research Environment" for the Swedish National Board of Education. For the time being he is one of four authors working towards a revision of special education research, particularly schools for the mentally retarded (Rosenqvist, 2001).

I sent the interview questions to him via email and also talked to him by telephone. Additionally, I read some of his research and conference papers in order to illuminate his answers. Specifically I returned to the "International Special Education Congress 2000, Including the Excluded." His paper was "The Big Challenge" which focused on a deviant resource (Rosenqvist, 2001). "The big challenge" is-from a political and from an activity point of view-how the pre-school and the school should handle the fact that students have different prerequisites, experiences, knowledge, and needs. How can students differences appear as resources and make steering conditions for the pedagogical work in the school in a direction that is at best for all students? Rosenqvist added that the quotation can be seen as making distinct the ideological difference between traditional "special education" and the new approach of "special pedagogy," or between the meaning of being a "special education teacher" and "special pedagogue." In order to make this difference clear, both practically and ideologically Rosenqvist started up an investigation with the aim to find out and expose further obstacles to a developmental process towards a school for all (Rosenqvist, 2001). The aim of Rosenqvist's study is to contribute to a theory of special education. A more delimited aim is to reach a deeper understanding for how teachers, school leaders, and school politicians think about "day function" (Rosenqvist, 2001). Hill-Jackson, Sewell and Waters (2007) addressed the importance of multicultural education. Moreover, they pointed out teachers need to be multicultural...able to relate to many cultures with the knowledge, skills, and attitudes to better understand the growing student diversity.

Different cultures

J. Rosenqvist (personal communication, April 18, 2008) agrees that different cultures have different systems of knowledge. He added the idea that the dependence of government, commercial powers and other authorities could bias research results. This has also been studied by Butin (2002) whose research focuses on the productive use of power in

education. Moreover, Reed and Black (2006) believe that valuing diversity in the class mean learning about the differences and similarities and finding ways to work which will lead to developing a culturally responsive curriculum and cross cultural understanding to help students build self esteem. Furthering this concept, Banks and Miller (2005) illustrated the challenge and difficulties in cross-cultural communication. They also focused on the ongoing neglect of language, and the lack of culturally rich curriculum knowledge.

To further examine this issue, Moran and Baker (2004) illustrated that the importance of knowing how to negotiate the politics at the universities, and in the field in general, is an important area of tacit knowledge. Thus, some scholars found that it is important to identify the people who had power, to cultivate and maintain positive relationships with them, and to generate resources. Another scholar in their study spoke of the effective use of information in building successful relationships. He believes that "If you want to influence people, you need to figure out who the right people to talk to are." In addition, Moran and Baker (2004) declared that because of specific emphasis in the No Child Left Behind legislation, the quality and usefulness of research in education is under increased public scrutiny and critique. The purpose of this close monitoring of scientifically based research and the restructuring within the U.S. Department of Education is to create and improve the quality of America's educational sciences. Even though Rosenqist's experience is not from within the United States and Moran and Baker's are, their experiences and bases of knowledge are still relevant to one another.

The purpose of the research

J. Rosenqvist (personal communication, April 18, 2008) mentioned that the purpose of his research is to help pave the road for people with disabilities in school and society so that they can live a more inclusive life. Recently, many research studies seem to have developed a newfound fascination with writing based in the humanities (Constas, 1998). This is related to Rosenqvist's research purpose and philosophy of multiculturalism. That is, all students, regardless of gender, social class, ethnic, racial, or cultural characteristics, should experience equal opportunity of education (Hill-Jackson et al., 2007). However, Obiakor (2007) assures equitable education, specifically multicultural special education that represents a realistic view of change needed as an integral part of general education.

Furthering this concept of disproportionate representation of human difference (Artiles, 1998) in his research Rosenqvist illustrates how school leaders and politicians, as well as teachers, parents, and students themselves, think about deviance and how deviance is defined. A certain focus input to issues like which students are assessed as deviant, how are these students categorized, and how are they taught? Agada (1998) observed that the purposes and practices of place-based education represent a huge challenge to many educators' assumptions about the way teachers and students should conduct teaching and learning. A critical pedagogy of place deepens the challenge by bringing cultural and ecological politics into the center of place-based discourse. Rosenqvist's research illustrates issues such as which students are assessed as deviant and how these students are categorized, and how and where they are taught (Rosenqvist, 2001). Moreover, Skiba, Poloni-Staudinger, Gallini, Simmons and Feggins-Aziz (2006) address the overrepresentation of minority students in certain disability categories in special education. As an example, Malloy and Malloy (1998) in their research demonstrated through theory and application that educators can teach mathematics to include more of the excluded students. However, they examined the educator's role in considering the culture of the students which gives them the power to be a part of the mathematics culture as they use the familiar knowledge of their culture.

Who should benefit from research? What is the government's role in defining research?

J. Rosenqvist (personal communication, April 18, 2008) mentioned that the research society and the people with different cultures and disabilities in school and society should benefit from research in every possible way. He added that the government should not define only support research issues. This is clear in Rosenqvist's articles "School for All" and "The Big Challenge." Both are from a political and from an activity point of view, how the pre-school and the school should handle the fact that students have different prerequisites, experiences, knowledge, and needs. For example, Sweden did, for a long time, set the tone as a promoter for integration in the school. During the last twenty years a wide range of countries have joined the approach and there has been an international movement towards integration in the school (Rosenqvist, 2001). To compare in the U.S.A and in U.K. an interesting theory has developed about the school in general is in progress aiming at finding a meta-theory of special education (Rosenqvist, 2001).

This reflects what Gruenewald (2003) illustrated about the importance of connecting schools with the social and ecological dimensions of place. Therefore, he mentioned that research in service learning, community based action, and school-community collaboration can offer direction. Moreover, Reed and Black (2006) concentrated on the importance of "reflecting and acting on the world to transform it." That is, to include, prepare and contribute to the teacher education, class, and culture within the political and economic system of the community. Next, Moran and Baker (2004) concentrated on personal passion and satisfaction. They added for some of the scholars, passion and satisfaction meant wanting to make schools a better place for children and having a profound concern for the fate of children in failing schools. In addition they emphasized social justice. Also, Reed and Black (2006) focused on social justice and activism in a way of managing behaviors and maintaining the status quo.

Who had an impact on Professor Rosenqvist?

In the area of multicultural professional development, education, social justice and knowledge J. Rosenqvist (personal communication, April 18, 2008) mentioned that a certain unnamed colleague professor of the same subject, a person with great empathy for issues of people with disabilities and special education, had particular impact on him. In order to understand the connection between Rosenqvist's mentor's ideas and other researcher's concepts further studies were examined. As an example Labaree (2003) pointed out some difficulties that are examined involving turning educational practitioners into educational researchers at American education schools. Teachers bring many traits that are ideal for this new role. At the same time, students and professors in researcher training programs often encounter a cultural clash between the world-views of the teacher and researcher. Baron (2007) further examined the importance of cultural ineptitude. He added systems, schools, and teachers are not intentionally culturally destructive, but rather they lack the knowledge they need to help minority students and communities. As a result this gap affects on the teachers attitudes and expectations. Labaree explained the concept of teaching and learning. He believed that "As far as I'm concerned what they pay me to do is to learn" (Labaree, 2003). That is if a person does not have high intrinsic motivation, a high level of curiosity, and love of learning he or she could not be a productive scholar. So, Labaree believes he/she should learn not teach as well.

To conclude, Rosenqvit's and Labarees paths are very similar because they had motivation, curiosity, love of learning and support to diverse multicultural students.

Kind of research

J. Rosenqvist (personal communication, April 18, 2008) mentioned that he is interested specifically in diversity issues, inclusion and access in society. He added Injustice and inequity issues in the area. This reflects what Moran and Baker (2004) mentioned about how educators learn to cope with the expectations and norms of their schools and to prioritize their time. In short, Rosenqvist adapted his interests and specialties to fit in with the requirements of his teaching. Salend (1999) illustrates the importance of the inclusion movement which will have positive impact on students with and without disabilities and their teachers. Moreover, he suggest that researchers and school district need to work together to validate and disseminate information about effective inclusion practices, policies, and programs that address the needs of students and teachers. Also, Van Garderen and Whittaker (2006) focus on the inclusive classroom and explain how the inclusion process can be helpful in meeting the needs of students from diverse backgrounds. Moran and Baker (2004) add that sometimes there were norms in their institutional settings that were counter to their developmental interests as scholars. Labaree (2003) argues like teachers, researches take moral responsibility for the consequences of education, and their work in trying to understand this institution is in large part motivated by their desire to rectify the harm done by dysfunctional education.

Defining "Good" research

J. Rosenqvist (personal communication, April 18, 2008) believes that good research equals engagement, honesty and discipline. Bad research is the opposite and may cause harm to the educational institute. According to Hostetler (2005), good education research is a matter not only of sound procedures but also of beneficial aims and results in order to serve people's well being. He added that good things need not be extraordinary. It is in the power of every researcher and educator to do something to improve the lives of people. In addition Day-Vines (2000) further examined and addressed educators' ethical responsibility for recognizing the dignity and worth of all students as well as enhancing teachers' multicultural competencies. Progress is not always easy, of course. It requires understanding, commitment, compassion, patience, and likely some amount of courage. In addition, education researchers have a particular obligation and opportunity because so much of a society's future depends on education. In order to see that a research is good Hostetler (2005) mentioned the importance of thinking beyond questions of studying students and analyzing school policies in order to making life better for people. He added serving people's well-being is a greater challenge, but it is also a great calling. To conclude, Baron (2007) mentioned that of all the civil rights, for which the world has fought and struggled, the right to learn is the most fundamental.

Thinking about research

To reflect on the concept of learning and the idea of "enhancement of competence and the extension of independence" J. Rosenqvist (personal communication, April 18, 2008) mentioned that his thinking about research has changed from dependence on certain methods and research areas to independence and self esteem.

To further this idea, Ladson-Billings and Donor (2005) illustrated a set of fundamental principles for a healthy community of researchers. These principles are:

- Posing significant questions that can be investigated empirically.
- Linking research to relevant theory.
- Using methods that permit direct investigation of the question.

- Providing a coherent and explicit chain of reasoning.
- Replicating and generalizing across studies.
- Disclosing research to encourage professional scrutiny and critique.

Insert Figure 1 Here

To explain this idea J. Rosenqvist (personal communication, April 18, 2008) mentions that methods should always be dependent on and chosen as to a specific problem area and purpose of the research which will help in the researching, reasoning, disclosing, replicating and generalizing the study.

Hardings (1991) also distinguished between method and methodology. Method refers to techniques for gathering empirical evidence while methodology is the theory of knowledge and the interpretive framework that guides a particular research project. According to Moran and Baker (2004), there is a gap between the theoretical background and the methodological background. For this reason, it is important to fill in the gaps by learning through doing. That is, it is important to construct different research problems using different research designs and different methodologies.

Assumptions about what we know?

To J. Rosenqvist (personal communication, April 18, 2008), assumptions about how we come to know what we know can be through commitment and engagement in diverse studies and research in an honest way...

Moran and Baker (2004) have taken similar assumption as they showed that how important it is to the participants to manage not only their time but also their emotions when coping with the pressures of academic life the criticism inherent in the peer review process, and the politics of organizational life they formed collaborative networks for both emotional support and intellectual challenge. By making these knowledge structures more explicit, others may benefit from the thinking behind these scholars's success to improve scholarship in the multicultural education field.

Challenges

To further illustrate Rosenqvist's ideas Eisenhart and Dehaan (2005), suggest that the task of education scholars, researchers, and policy makers is to engage rather than exclude epistemologies in order to help in producing different knowledge and producing knowledge differently in a diverse, multicultural context.

To further collaborate on the absence of attention to social and political processes in addressing the problems of special education and its impact on diverse multicultural education researchers addressed these issues (Sleeter, 2000). To J. Rosenqvist (personal communication, April 18, 2008) his most significant challenge as an educator has been to reach "the diverse multicultural world." Banks and Miller (2005) also addressed these political issues of equity in both general and special education. Another study, focused on multicultural special education as an effective intervention for today's schools. Obiakor (2007) mentioned "language is a complex and unique characteristic of culture." To add clarification, Artiles (1998) focused on topics related to language difference of ethnic minority students.

To explain Rosenqvist's ideas of diverse education Thompson (2004) mentioned that it is very important to promote and protect the multicultural property of special education, to underscore the objective authority, to engage in surveillance of academic pedigrees, to read and write in a "universally" intelligible language (which, it goes without saying will be English), to assure readers of the lack of bias, and to show commitment. In regard to other subjects like mathematics, educators suggest teaching the subject to include more of the excluded students, especially minorities with diverse backgrounds. For these students exclusion is easy but inclusion is better. In this case, it is more beneficial if the educators consider the culture of the students which will be a part of the mathematics culture when they use the familiar knowledge of their culture and this will empower diverse students. Van Garderen and Whittaker (2006) focused on the principals of universal design for learning (UDL) in order to improve multicultural and diverse student's achievement. As for Moran and Baker (2004), they added that the scholar's interviews repeatedly showed sheer, dogged pursuit of what is necessary for productivity. According to their research, perseverance, focus, and dedication connected to maintain a clear research agenda and the willingness to write and rewrite until an appropriate level of clarity and understanding is achieved.

Ethical considerations

J. Rosenqvist (personal communication, April 18, 2008) a special education researcher believes that a scholar should be honest in all steps of the research project, to the people (or animals) involved, and to data, audience, and to show kind of humbleness. He adds that this is very much applicable in research involving people (students) with diverse backgrounds. Banks and Miller (2005) highlighted several legal and ethical issues in special education such as; the importance of developing culturally responsive tools that can identify the strengths and needs in a multidimensional fashion. Next, they emphasized the need for ongoing professional development.

Lontzenheiser (2007) pointed out that "opening with a brief contextualization of the ethical conundrums inherent in a qualitative research methodology, the researcher's interest is in methodologies that emanate from epistemologies that

attempt both to be ethical, and to acknowledge the very impossibility of such a move." Next, Lontzenheiser outlines possibilities for data collection, analysis, and representation particularly important when working with queer youth. He added, the idea of ethical research would mean that power structures can be equalized. Both the researcher and the participants would be able to function as wholly conscious knowing actors who can be involved without the process of interrogating position, subject, object, or binaries.

As for Willower (2001), he mentioned that discussions of ethics in education have often been tied to political ideology, identity politics, and single concepts or ideas. These discussions have generally ignored the questions raised in philosophical treatments of ethics such as the relationship of ethics and knowledge or the processes of moral choice.

Things to know

In the interview Rosenqvist also discussed funding. He added how extremely difficult and frustrating is to raise funds. Obiakor (2007) focused on this issue in special education. He pointed out the importance of "free and appropriate public education for all learners including students with multicultural background."

Moran and Baker (2004) mentioned the urgency for funding research. They also added the importance of finding time for writing, publishing, and peer reviewing in order to improve the work as well as setting specific goals.

Advice for beginning multicultural teachers

Rosenqvist's advice is "Don't do it if you are not prepared to work hard and long time for little money!" (J. Rosenqvist, personal communication, April 18, 2008).

Eisenhart and Dehaan (2005) give recommendations for strengthening educational programs accordingly, with the aim of producing teachers who have a high degree of expertise and research skills in at least one area of educational investigation and a broad background of familiarity with the greater expanse of education-related research.

They also added that the nature of teaching can make things hard for programs that seek to turn teachers into effective researchers, and this problem of transition is exacerbated by institutional problems that make educational teaching and research so difficult. Of course, this is applied to individual teachers who will face tremendous pressure as beginning educators.

Moran and Baker (2004) emphasized the study participants and how they had learned to manage not only their time but also their emotions when coping with the pressures of academic life. Their comments indicated high levels of self-knowledge and self-regulation. They also had developed a high level of self-efficacy. A confidence in their ability to be successful that allowed them to sustain grueling work schedules.

Implications

The studies suggest cautious implications for practice and future diverse research. Multicultural education appears to be an easily-implemented academic intervention that could assist in effective drill and practice, and seems to be worthy of additional investigation. In order to develop a multicultural approach of teaching, a teacher must get to know the students.

Once familiar with the background of the students, a teacher can do some preliminary research about how the different cultures learn. Then the teacher can share this information with the students. By doing this, a teacher validates and includes students of diverse backgrounds. Teachers can then work individually in order to improve their self esteem and attitude toward multicultural education.

Conclusion

"If I have to, I can do anything. I am strong, I am invincible, and I am a teacher." (Helen Reddy). For me as a multicultural educator my voice in a changing world enables me to think in a broad spectrum of research on the state of education and help to live more inclusive lives. However, it is important to provide a forum for dialogue and discussion on issues of interest to educators in the fields of special education and culture emphasizing on the changing role of educators in the world which built strong bonds and links between learning and multiculturalism. Thus, if social and cultural values are encouraged and supported, through the use of contexts or through an acknowledgement of personal directions, then the teaching and learning will be more meaningful.

This reflects Rosenqvist's experience and describes the kind of research that he most typically does which as special education, inclusion and access in society, and injustice. However, the purpose of his research is to help diverse people with disabilities to live more inclusive lives. For this reason his research methods are always dependent on and chosen as to problem area and purpose of the research. Rosenqvist defines good research as working toward engagement, honesty and discipline.

As J. Rosenqvist (personal communication, April 18, 2008) claims to beginning researchers, "Don't do it if you are not prepared to work hard and long time for little money!"

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Figure 1. My rendering of Ladson-Billings and Donor's model The relationship between the methods and the theoretical framework of the research



Study on the Teaching Model Based on Multimedia

and Network Environment

Deju Zhang Department of Mathematics, Linyi Normal University Linyi 276005, China E-mail: lygxxm1992@126.com

Abstract

Based on the analysis of the advantages of teaching model in the network environment, three teaching models based on multimedia and network environment, i.e. the teaching model of giving priority of lecturing, the teaching model of giving priority of independent learning and the teaching model of group learning, are discussed in the article, and the problems which should be emphasized to utilize multimedia and network to establish the new teaching model are proposed.

Keywords: Multimedia, Network, Teaching model

Multimedia and network technology is a new computer application technology with characters that other technologies don't have, and these characters will largely influence the teaching. First, the multimedia and network technology is a kind of communication technology in itself, and it takes the computers on internet as the spread medium which has strong interactive medias, and these medias can offer locations of communication and interaction between learns and instructors, lesson design experts and learning associates. The multimedia and network technology will also offer a creative environment for learners, and students can utilize various tools to make their own products on internet. In addition, the network can be the transfer media of teaching, and many education websites could offer various network teaching activities and network lessons. The network environment would largely change teachers' responsibilities, and teachers will not give priority to knowledge spread, but cultivate students' information quality and the ability to analyze and solve problems. However, according to the actual situation, the advantages of the network environment have not be really utilized in teaching, and the application level of the network environment in teaching still lags the development level of the network technology.

1. Advantages of the teaching model based on multimedia and network

The teaching activity is the special cognition process and practice process, and it must be presented by certain form, and the teaching model is one of presenting form of the teaching activity. The teaching model is not the application of teaching practice, and it has important research values. In author's opinion, the teaching model is the relative stable teaching procedures and teaching strategies and methods which are established under certain teaching ideas, and it includes the combination modes of various factors in the teaching process, the teaching procedures and corresponding strategies, and it is gradually formed in long-term teaching practice, and it comes from the teaching practice, and instruct the teaching practice.

The push of a new teaching model certainly should base old teaching models, and the multimedia and network-assisted teaching is the new teaching model deriving from the information-based society, and its advantages contain following aspects.

1.1 Inspiring learning interest

The computer-assisted teaching (CAT) is to enhance students' learning interests by the live form of "cartoon". The multimedia and network teaching further promotes the CAT, and it can more inspire students' learning interest than single cartoon. It has the independent inquire function of capturing information on internet, the learning participation function of dynamic simulation and the feedback evaluation function in playing games, which will deepen students' learning interests from the surface to further studying the inner rules of things, and make teaching staffs to explore multiple approaches to inspire students' learning interests from more abundant and deep layers.

1.2 Saving hours and increasing information content

For modern knowledge information with "exploding scale", the information offered in 45 minutes (one lesson) is too trivial. It is very important for every teacher to make students extremely acquire information in 45 minutes. The visual cartoon information can reduce explanation times, and the demonstration of cartoon can reduce the language description

and the blackboard writing time, and the independent inquiring and searching usual information can largely enhance interests and quicken the understanding process. The multimedia and network technology could have these functions simultaneously. The common character of these functions is to save times and offer abundant information. This knowledge transfer mode saving times and the information system with large knowledge quantity which can be selected can offer the possibility that students independently select the knowledge what they need. By this way, every student can absorb the knowledge with the most values for himself in 45 minutes, and every student's information absorption quantity can be increased, that is the teaching model of "chalk + blackboard" can not achieve.

1.3 Optimizing teaching structure

The so-called optimizing teaching structure is to combine various teaching parts most harmoniously and high-effectively. The multimedia and network teaching can rebuild and treat the structure of the information in teaching materials when designing teaching to flexibly accept or reject the contents of teaching materials. Concretely speaking, the abundant functions of multimedia and network can adopt different knowledge lecturing modes aiming at different knowledge clues, which makes the teaching to have stronger pertinence. The teaching model of "chalk + blackboard" can only transfer the knowledge information of different types by same form such as materials or maps, and the teaching structure is easy to be fixed. But the multimedia and network teaching can form the teaching structure of "questions". It can open out students' interior thinking clues by challengeable questions connecting the keys, difficulties, and ideas of knowledge, which can not only optimize the knowledge structure, but optimize the method structure and enhance the efficiency of classroom.

1.4 Changing learning mode

Because of the increase of enrollment in colleges, more and more students (over 100 sometimes) attend class in one room, and it becomes impossible to make every student to participate in learning, which can be solved in the classroom of the multimedia and network assisted teaching. Students can independently participate in learning, and the traditional learning mode can be changed to embody students' participation of learning. By the computer multimedia and network technology, students could realize the learning of "discovering" through query, communication, network discussion, and network design. Thus learning model is different with the learning of "ask-answer" and the learning of "group discussion". It can effectively realize the possibility that all students in the class to exchange learning information simultaneously, which can largely increase the information communication quantity and widen the range of cooperative learning. This learning model even can realize the effect of "small-class" in the teaching of "big-class", which could be large challenge for traditional teaching model.

1.5 Expanding the time-space range of learning

Students' learning models are diverse, and the multimedia and network assisted learning is a kind of learning model full of innovation, and it breaks the close learning in classroom. It could widen students' learning channels, and by large numerous of teaching information on internet, the knowledge will not be limited in the application in the classroom, but the references before class, the applied materials of learning in classroom, and the reference for the review after class. In this way, the meaning of the class will be widened, which could break not only the time limitation and the space limitation, but expand the time-space range of learning.

2. The main teaching model based on multimedia and network environment

2.1 The network teaching model of giving priority to lecturing

Traditional classic teaching model gives priority to lecturing, and students only passively listen and accept knowledge. Though this teaching model is being replacing by various new teaching models, but it can be widely used in distance education. It can help to balance the education resource, especially in undeveloped regions with lagged education resources.

The lecturing teaching model based on network includes two modes, i.e. the synchronous lecturing and the asynchronous lecturing.

(1) The synchronous lecturing. Except that teachers and students are not in same place, this model is completely same with traditional teaching model. Students in different places can listen the teaching of same teacher at same time, and teacher can communicate with students simply. This teaching model requires teachers store the contents and materials of lecturing (including the text files, images, cartoons, multimedia courseware, video materials, audio materials) before class on the server by the form of hyper text, and teachers explain these contents by the multimedia computer and server.

(2) The asynchronous lecturing. It means that teachers and students separate not only in space, but in time, i.e. when teachers lecture, learners may not listen in the distance end, and they can study the contents in their proper times after teachers lecture. This model lacks in instant interaction, and requires students' higher consciousness and enthusiasms. Therefore, this teaching model could acquire better teaching effect, and it must equip a set of excellent e-teaching

materials which can fully embody students' characters and fit the information expression and transfer on internet with images, voices, and texts, and it could offer large numbers of assisted information materials or indexes about the lesson to widen students' knowledge layer, and answer students' difficult questions by E-mails, and equip with a set of complete feedback system which can instantly evaluate student's learning effect to inspire learners.

2.2 The network teaching model of giving priority to independent learning

(1) The mode of individual instruction. It means that the teaching is implemented under learners' individual learning, and teachers only offer timely assistant and helps when learners encounter obstacles or questions. This teaching model can be implemented by the close communication and network courseware between teachers and individual learners.

(2) The mode of exploring learning. It issues some problems to special objects and requires students to solve them on internet, and large numerous of information resources about these problems are offered for students to inquire. In this model, teachers or certain education institution (such as school) establish some special problems according to the requirement of teaching, and issued on internet publicly for students to interview, solve and study, and at the same time, they also offer many information resources about these problems for students to inquire in the process of solving problems. Of course, students can search relative information about these problems on internet. In addition, teachers should offer helps for students when they encounter difficult problems in the learning, but these helps are not to directly give the correct answers of these problems, but proper elicitations or clues.

This learning model drastically change the state that students always passively accept knowledge lectured by teachers in traditional teaching process, and make students in the active state to exploring knowledge, so it can more effectively inspire students' learning interests and creative desires.

2.3 The network teaching model of giving priority to group learning

(1) The mode of discussion learning. It means that by teachers' instructions and the help of the discussion support system, learners actively show their opinions and dispute each other surrounding certain topic or central content to study. There are many ways to implement the discussion learning on internet and the most usual and simple one is to utilize the existing e-bulletin system and the chatting system.

(2) The mode of cooperation learning. The cooperative learning based on network is to complete certain learning task by the cooperative group composed by multiple learning groups under teachers' instruction in virtue of relative technologies such as internet and multimedia. In this process, by certain network interactive platform, learners cooperate and help each other, and exert the collective and cooperative effect to complete the task together. Simply speaking, it is to utilize the network technology to support the learning. The cooperation learning based on network is also called as the web-based cooperative learning. It can help students to form good learning habits, cultivate appreciations and cooperative spirits, improve interpersonal relationship, and cultivate some high-level skills in the cognition domain such as the strategy to solve problems and the ability to study.

3. Problems which should be emphasized to utilize multimedia and network to establish new teaching model

3.1 The teaching model must embody the total target of the quality education

The start to establish new teaching model is to completely push the quality education, so the new teaching model must implement the education policies of CPC, enhance the schooling quality and efficiency, and pursue the complete development of all students' comprehensive quality. First, the function of the learning subject should be fully exerted, and the participant environment should be established by applying the multimedia and network to inspire students' interests and make learners acquire knowledge and ability by the interactive function with the environment. Second, the individual teaching should be mainly developed, and the multimedia and network should not be used to impart knowledge but emphasize the cultivation of ability. Third, students' cognition methods should be cultivated, and by the multimedia and network, students can acquire knowledge by the approaches of finding and exploring and the ability of continued learning.

3.2 The teaching model should be guided by advanced teaching theories

Nowadays, many advanced teaching theories can be referred and applied, such as Bruner's theory of "establishing structure and finding learning", Broome's theory of "confirming target and grasping learning", Babanski's theory of "optimizing methods and choosing better one", and Rogers' theory of "students-oriented and participating in learning".

3.3 The teaching model should emphasize the function of the factor of "media" in the teaching and promote the conversion of various factors

The activities of teaching and learning are called as the "teaching process". The traditional teaching process contains three factors including teacher, student, and teaching materials. In modern teaching process, the multiple mediums would be applied, so the fourth factor, i.e. "medium," should be added. These four factors are not independent in the teaching process, or simply combined, but they are connected each other, and form an organic integer. Therefore, the

changes of following four factors in the teaching process should be implemented.

(1) The change of teacher's role. The teacher-oriented docent should be changed to the organizer of the learning activity and the instructor of students' learning.

(2) The change of student's status. The passively accepted status should be changed to the main position of discovering, exploring, and building knowledge.

(3) The change of medium function. The demonstration tool of teacher lecturing should be changed to students' cognitive tool.

(4) The change of teaching process. The process of lecturing should be changed to the process of creating scenes, exploring problems, assisting learning and building consciousness, which takes students as the main body of learning.

4. Conclusions

To sum up, the application of the multimedia and network teaching model in the class teaching could offer good media carriers and comfortable learning environment for learners, and largely enhance learners' interests and enthusiasms, and give attention to learners' individual differences. The teaching model of multimedia and network can largely enhance the teaching quality and students' ability of applying knowledge in practice. Teachers should actively study and grasp advanced teaching measures and teaching equipments, changes ideas and concepts to adapt the new situation of the teaching reform and the requirements of modern teaching methods, and make learning become students' individual learning and active learning when strengthening the professional knowledge.

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Implementation of PBL Curriculum Involving Multiple Disciplines

in Undergraduate Medical Education Programme

Srikumar Chakravarthi

Department of Pathology, Faculty of Medicine, International Medical University 57000 Kuala Lumpur, Malaysia Email: srikumar_chakravarthi@imu.edu.my

Nagaraja Haleagrahara

Department of Human Biology, Faculty of Medicine, International Medical University, Malaysia

Abstract

This article describes how a multidisciplinary problem-based learning (PBL) curriculum was established at the International Medical University in Malaysia for preclinical education in a 5-semester phase 1 programme. Based on positive feedback from a modified PBL program implemented in one discipline, a multidisciplinary PBL curriculum was established. PBL training for facilitators and students, development of resource materials, curriculum design, and case writing were done in a manner that is consistent with the characteristics and learning style preferences of undergraduate medical students. About 80% of the lectures were kept in the new PBL program. The multidisciplinary PBL curriculum has been successful in helping undergraduate medical students mentally construct an understanding of the interrelationship between medical knowledge and basic science concepts. The experience at International Medical University, Malaysia, indicates that there are clear benefits for students in the PBL format. A benefit to faculty is that PBL tutorial facilitators were partly liberated from their traditional roles and developed additional skills for facilitating. However, conflict arises when PBL-trained students encounter the traditional exam-centered education system.

Keywords: PBL, Multidisciplinary, Undergraduate medical education, Preclinical education

Introduction:

Problem-based learning (PBL) is a student-centered instructional strategy in which students collaboratively solve problems and reflect on their experiences. Characteristics of PBL are: Learning is driven by challenging, open-ended problems; Students work in small collaborative groups; Teachers take on the role as "facilitators" of learning.

Accordingly, students are encouraged to take responsibility for their group and organize and direct the learning process with support from a tutor or instructor. Advocates of PBL claim it can be used to enhance content knowledge and foster the development of communication, problem-solving, and self-directed learning skill.

In response, many medical schools around the world set about constructing new curricula that were more responsive to student learning and more sensitive to evaluation mechanisms. These new curricula have employed a more contemporary student-centered approach, utilizing flexible methods of teaching and learning that enable development of dental clinical skills enhanced by self-assessment and criterion-referencing. Teamwork and competency-based systems also characterize these curricula.

Problem-based learning (PBL) is a curriculum method that has frequently been advocated as a way to provide a better learning environment for health professions students (Hmelo-Silver & Barrows, 2006; Schmidt, 1993; Susarla *et al*, 2004; Rideout *et al*, 2002). PBL originated in medical education at McMaster University in Canada in the 1960s (Gillian & Elizabeth, 2003). Since that time, many versions of PBL have arisen worldwide in a variety of fields and at different levels of education. Now, the role and advantages of PBL as an innovative approach in health professions education have been well documented; (Morales-Mann & Kaitell, 2001; Fincham & sculer, 2001) these include the structuring of knowledge for use in clinical contexts, the development of an effective reasoning process, the development of effective self-directed learning skills, and stimulating students' motivation for learning. There has been an emerging trend of incorporating PBL into all aspects of the dental curriculum in many nations.

During the fifteen years since the founding of the IMU, the academic programmes within the institution have undergone a series of changes, focusing on producing leaders in both clinical medicine and biomedical research. All medical students are trained in Phase 1 at Bukit Jalil campus for two and a half years, before they move to the clinical school in Seremban. Over the past few years, the undergraduate curriculum for the medical degree has evolved from an undergraduate curriculum based upon didactic teaching and clinical and laboratory sessions to the undergraduate and

graduate curriculum for a degree that now emphasizes the ability to solve problems in the clinical environment. A modified PBL in just one single discipline, pathology, has been ongoing in the undergraduate curriculum since 2003. Positive feedback about the modified PBL was voiced by some of the students and teachers, which included the ability of students to more effectively communicate ideas in a group setting, the enhancement of a practical approach in solving treatment-related problems, the development of critical thinking and problem-solving skills, and improved enthusiasm for learning. As a result of this positive feedback, a multidisciplinary PBL curriculum was established.

Materials and Methods:

This section describes several factors that influenced the design of the new PBL curriculum at IMU, with an emphasis on the characteristics of medical students under the hybrid traditional cum PBL education system.

The students in traditional system have independent personalities and are traditionally hesitant to communicate with others voluntarily (Song *et al*, 2005). Students ask few questions in class and offer objections even less. They worship their teachers or parents and treat their textbooks with the same reverence. They usually accept their fate passively.

The traditional education system is also very different from that of other countries. Almost all the students in the university have graduated from high schools that use very traditional teacher-centered instructional methods. As a consequence, entering students are used to gaining information from didactic lectures. Numerical scores from the highly competitive entrance examination, especially in scientific subjects, represent practically the sole yardstick for admission into professional health institutes, although many medical educators now think that it is inappropriate to select medical students who will become physicians in the future based only on their examination scores while neglecting their people skills and career interests.

Children born into a family in Malaysia have been coddled since childhood because of the control that the family exerts on its offspring. As a result, many educators in Malaysia believe that our medical students have poor abilities to live independently, to think independently, and to study independently. They lack the propensity and skill of self-directed study and may be less mature in dealing with people or may even have become spoiled in the historically passive academic culture. The traditional examination-driven teaching system of the past has encouraged them to focus on the retention of factual knowledge without concern for the process of reasoning out situations.

Preparation of Facilitators and Students for PBL:

Changing the concept of teaching and learning to support the facilitator's role in PBL has been a big challenge at our university. Although all faculty who were assigned as facilitators were experienced in leading conferences, most of them did not have any experience as PBL facilitators. Thus, their preparation focused on developing the proper behaviors of a facilitator within student-centered group discussions, such as encouraging students to comment on scenarios, sharpening their awareness of interests and skills, and using insight and problem-solving to reach goals and avoid blocks. Central to the facilitator's role was the ability of the faculty member to break away from teacher-dominated discussions to those that are truly student-centered. If commitment to PBL is to be maintained, every facilitator must appreciate its advantages, such as the encouragement of greater student participation and responsibility and the development of group ownership and leadership skills.

Every year, three or four young faculty members whose teaching experiences ranged from teaching large classes to small groups in clinical settings are assigned as facilitators in PBL. One of the current faculty received training as a PBL facilitator at universities with established PBL programs. The new faculty members being introduced to PBL take part in a tutor training workshop, which is led by the two faculty members who were trained to learn comprehensive PBL.

In preparation for the workshop, a PBL manual incorporating ideas from established PBL programs was used. The trainer used questioning while taking participants through the PBL steps. Participants then worked in small groups to formulate the two parts of a problem situation (main problem statement and additional data). Each of the developed problem situations was examined by the large group for appropriateness and completeness, with the guidance of the trained PBL facilitator. After an additional two-hour session with the new PBL facilitators, all aspects of PBL such as facilitator role behaviors and problem situations were practiced in a small group. The goal was that all new facilitators should master three concepts: first, learn about PBL; second, develop an understanding of the facilitator's role; and third, acquire facilitator skills.

Further PBL training is ongoing. All the facilitators are asked to attend a periodic training project during the year. They are assigned a temporary full-time teacher to cover their responsibilities during the training. Other faculty members are encouraged to audit some training workshops or PBL courses, so that they can develop an understanding of PBL concepts and also write some PBL cases for teaching.

Students received a three-hour program that introduced them to PBL basic concepts before they started the PBL curriculum. A one-hour discussion followed the lecture. A demonstration was given by the trained facilitator and several others who have had experience in the modified PBL curriculum. As students have to be proficient at accessing

informational resources to gather relevant, credible information to solve PBL problems, they were also given a special orientation to the library. At this time, it was hoped that the curriculum change would allow students to explore their academic interests more freely and would encourage the pursuit of basic and patient-oriented research during the preclinical and clinical years.

Resource Preparation:

Laptops were bought for the facilitators of PBL, who used the laptops to prepare the cases and search for information using the Internet. Whiteboards were prepared for PBL groups. Students could write out what they were thinking or diagram their strategies for how to deduce the learning issues and print it out after the discussion.

Library resources are critical to PBL. The educational resources and facilitator's effectiveness are limited without sufficient books in library. Therefore, a large number of new textbooks and references were bought recently. Wide-band communication was built up for students, so they are able to utilize the resources of the Internet more freely. The library hours were also extended, so that students are now able to research information needed to analyze cases.

Design of PBL project:

In the preclinical period, multidisciplinary PBL curriculum was created just for the medical program students. Teaching modalities used in large classes, which were lectures, were mainly didactic, while PBL was student-centered. The total lecture hours for the medical programs were reduced and about 20 percent of the lecture schedule was converted to the PBL curriculum.

PBL was planned for cohort groups of nine or ten, to address content areas, group process, and conflict resolution. In addition, students explore elements of professional practice such as ethical decision making, legal implications, collaborative practice, and the role of professional organizations. Three teachers were responsible for course design and implementation. The PBL evaluation tools developed by Woods were adopted (Morales-Mann & Kaitell, 2001). This includes the knowledge base, reasoning process, communication skill, assessment skill, and professionalism. These tools evaluated students' competency in problem-based learning, students' performance as a group member, and students' task and role performance as related to group morale. The last ten minutes of each class are set aside for reflection and evaluation of group performance.

Case preparation:

PBL strategy is centered on a case, a facilitator, and a group. An effective case, developed from previous experiences of facilitators and input from clinical experts, based on actual previous cases is essential for implementation and acceptance of PBL 9Lohman & Finkelstein, 2002). It provides a focus for learning, whether it is used in a single course or used as the principal educational method in an entire course or curriculum. It is a framework for a discussion that allows students to recall what they already know, to quickly identify the limit of their knowledge, and to formulate a question to clarify a concept. A well-constructed case should function as a surrogate teacher. Therefore, case preparation is a very important step.

Some of the facilitators have had experience in writing PBL cases, so we have prepared new cases, and also translated and changed one or two cases taken from established PBL programs and tried to imitate the concepts of these cases to write new ones. The purpose is to write cases as a focus for multidisciplinary learning, which is designed to foster mastery and understanding of particular skills, behaviours, and values that are identified as goals and objectives of the curriculum. The cases should match the logistic realities of the courses or curricula in all the disciplines. The case should not go beyond the content considerations of education outlined for undergraduate teaching.

The facilitators wrote ten cases for the PBL curriculum in each semester for the 2^{nd} to 5^{th} semesters students; thus, forty cases are currently ready for use. All the cases are deliberated and discussed by the faculty who attended the PBL tutor training workshop or other training in PBL. Of course, these cases will likely be changed after the PBL sessions, depending on feedback from the students and the facilitators.

Discussion:

PBL at IMU is in an exploratory phase. Although modified PBLs in few disciplines have been in existence for years, we are still gaining experience with PBL in a multidisciplinary setting. The knowledge gained in the fourth and fifth semesters is especially quite important for all the students. No remediation is allowed by the students or their parents or the school. This places a heavy burden on all of our facilitators and students. To take into consideration the probable side effects of educational innovation, 80% of the existing lectures were retained to limit the influence of the new curriculum.

Although the new curriculum was well received according to feedback from the students, there were conflicts between the traditional education system and PBL. For example, the traditional exam-centered education system restricted the application of PBL. The students complained they did not have enough time to prepare for the PBL curriculum during the period of the final exams. Students also wanted an evaluation that would provide clear and specific evidence of their

competence. Because the students invested time and effort in PBL, a majority believed that their PBL grade should count towards their grade point average. But we could not give a multidisciplinary grade to the university because it required grades for each of the various single disciplines. However, PBL could not be set up as a lab section, as it is part of the curriculum which requires compulsory attendance in small groups in the PBL discussion rooms.

Another concern is that some faculty members perceive PBL to be too time-consuming and too difficult to implement. Not all the teachers who are in charge of lectures took the time to become familiar with the concept of PBL. They gave their lectures employing the didactic format, including the concepts that were designed to be learned in the PBL curriculum. Students did state, however, that PBL was becoming a good method of review.

In regard to case innovation, the focus of the new cases was much more multidisciplinary in nature. Compared with the single disciplinary setting, the multidisciplinary PBL curriculum is much more successful in building a firm foundation for students that will help them understand complex medical knowledge and basic science. The PBL process helps students develop deeper understanding than possible in lectures and also stimulates the development of clinical reasoning and critical appraisal skills. It encourages students to think about social and environmental problems and to pay more attention to humanities and ethics. For those who focus on knowledge from textbooks, knowledge of such fields is a very important reinforcement and improves their ability to acclimatize to work settings where doctors provide oral health care for patients. It should be said that the multidisciplinary setting is much enhanced by the spirit of PBL.

For a new problem-based curriculum that is just being established, it is essential that students, faculty facilitators, and administrators understand the basic concepts of PBL and receive training about how PBL works. Student preparation for PBL is not enough. Because our students were not previously exposed to PBL, allowing more time before starting the PBL curriculum would have made the process more effective. Increased preparation will also stimulate prior learning and provide guidance, feedback, and successful experiences with the method. Facilitators would be less anxious and more effective if they were given additional preparation in the form of workshops and team discussions. Students and facilitators have expressed their desire to continue the use of this method after experiencing the advantages of PBL. When the concepts and format of PBL become well accepted among the whole faculty, the application of PBL in subsequent years will promote their own and students' self-efficacy in this teaching/learning method and enhance students' ability to solve more complex problems in the future.

Future growth and success of a PBL curriculum at any medical university in any nation depends on investment in the future including the following: creating an adequate budget for PBL so that needed resources are available to conduct a high-quality program; inviting PBL experts to provide faculty development on this technique; enhancing financial reward and time available for the case writers; and building a substantial library of resource materials, including biomedical journals, to assist students in their exploration of the literature during the analysis of cases.

Conclusion:

A multidisciplinary PBL program in the IMU is an innovation in our educational pursuits. It is a big challenge for Malaysian students because of the traditional culture in this nation. To take into consideration the probable side effect of education innovation, only 20% of the lectures were changed in the PBL curriculum. All the new cases have the characteristics of being multidisciplinary in nature and are related to some problems of society, environment, humanities, and ethics. There are clear benefits for the students from the use of the PBL format, including increased autonomous learning, critical thinking, and problem-solving. Moreover, it helps in primary application of knowledge, due to greater knowledge retention and recall skills.

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An Overview of Talent Cultivation Models in Foreign Vocational Colleges

Youhua Wang

Hubei Urban Construction Vocational and Technological College

Wuhan 430205, China

E-mail: hubeiwyh@163.com

Abstract

A talent cultivation model refers to a model of the construction and operation of the cultivation process adopted by a school to achieve its cultivation objectives. Four models, with their differences and similarities, are introduced in this paper.

Keywords: Vocational colleges, Talent cultivation model

A talent cultivation model refers to a model of the construction and operation of the cultivation process adopted by a school to achieve its cultivation objectives.

Currently, four popular models of talent cultivation including "dual-script system", CBE model, TAFE model and MES model have their differences and similarities.

1. Currently Popular Models of Vocational Talent Cultivation

1.1 "Dual-Script System"

Represented by Germany, this model is characterized by the enterprise and the school taking joint commitment of talent cultivation. Accordingly, teaching and training activities are organized according to enterprises' requirements for their talents. Cultivated in this way, students will be familiar with the skills demanded at their future posts. Having gained popularity among enterprises, this model was once named "the secret weapon" in Germany's economic prosperity.

1.2 CBE Model

This model, represented by Canada and U.S., is based on capacity and sets its core at establishing capacity aims according to the actual demands of vocational posts. First, a curriculum development committee composed of enterprise experts is expected to lay down a capacity scale (a curriculum development form), capacities included in which are based on to establish courses, organize teaching contents and assessing capacities.

1.3 TAFE Model

This model, represented by Australia, is a comprehensive cultivation model involving multi independent levels under the national framework in which industry exerts its propelling forces, government, industry and schools are combined, teaching activities are conducted centering on students, the cultivation process is joined with middle school education and college education.

1.4 MES Model

MES (Modules of Employable Skills) lays down all functions required by a post or a job by establishing post descriptions, then divide them into different tasks and name each one of them as a module. According to the actual demands in each module, each part of knowledge and skills required in fulfilling a module's takes is a unit. Actually, based on system theory, information theory and control theory, MES is a typical vocational training model employing the three theories.

2. Differences among the Talent Cultivation Models

2.1 Different Backgrounds

"Dual-script system" came into being in the middle and late 19th century. With the beginning of industrialization, traditional apprentice training exposed its shortcomings in improving apprentices' academic capacities and meeting new demands. Therefore, it was laid down that apprentices had to have necessary theoretical knowledge training at vocational schools. By 1900, apprentices' school training had been named compulsory education and enterprises had been expected to take major responsibilities in vocational training. In addition, vocational school education was combined with on-the-spot practice, hence forming "dual-script system".

CBE found its origin in system theory and behavioral sciences in 1950s and 1960s, according to which people's demands, motivation, belief, attitudes and expectations played critical role in their behavior. Seen from the perspective

of economy, industry called for attention from the education departments to their actual demands for talents in 1970s and 1980s. Therefore, capacity-oriented education arose.

In 1980s, due to the deterioration of commerce and the decline of the former pillar industries, Australia's economy was greatly affected. During their efforts for economic revival and industrial reconstruction, the Australian Government realized the importance of reforming vocational education and its training system, expanding training subjects and improving training performance. In April, 1989, a special ministerial meeting on vocational training was held in Australia, at which an agreement on reforms was made to establish a national training department intended to instruct developing national capacity standards and to set up an educational system based on capacity.

MES Model was created by International Labor Organization in the end of 1970s and early 1980s by referring to Germany and Sweden's periodic training model as well as Britain, U.S. and Canada's modularized training and employing system theory, information theory and control theory in order to help all countries especially developing countries to improve the low efficiency in technological workers' training.

2.2 Different Curriculum Models

2.2.1 Different Curriculum Development

Based on the contents on professional education in vocational schools listed in the general teaching plan agreed on at the cultural and educational minister conference, "dual-script" curriculum is laid down by the ministers of culture and education in each state according to their reality.

When developing CBE course, first of all, the DACUM Committee composed of professional experts conducts a comprehensive capacity analysis, which is then followed by the analysis on specific capacities involved in each comprehensive item, hence forming a DACUM table. After that, a committee responsible for specific capacity analysis forms brief written descriptions on each specific capacity listed in the DACUM table and divide them into different categories such as learning steps, necessary knowledge and so on. Finally, a teaching analysis committee composed of education experts designs learning units and confirms core courses.

In TAFE Model, different educational service departments are established to deal with curriculum development according to different categories of occupations and courses based on the training aims set by the national occupational consultation institution. In conformity to the requirements of different posts, necessary knowledge and skills are divided and relevant professional standards are converted into courses.

In MES Model, the global occupational classification and tasks involved in all working fields are based on to form skill modules. Curriculum development staff is expected to create the learning unit bank and curriculum modules.

2.2.2 Different Curriculum Settings

There are two types of courses in "dual-script system": the theoretical course and the practical course. The former includes the learning of general knowledge and basic professional theory at vocational schools while the latter is mainly conducted in enterprises. Of course, the two parts are interwoven with each other since students have access to necessary theoretical knowledge in the practice classrooms provided by enterprises and vocational schools are also equipped with workshops for students' practice.

Differently, in CBE Model, students' individual differences instead of universal contents and pace are emphasized. With modules and credits combined together in this model, different students have the freedom to choose different learning models and set different curriculum plans for themselves according to their abilities and demands.

Different from "dual-script system", there is no public basic course in TAFE Model. Only basic and advanced courses related to certain major are provided. In spite of the large number of its professional courses, class hours are limited and there are optional courses as well as compulsory ones.

Seen from the above, "dual-script system" is still knowledge-oriented, which puts greater emphasis on the systematicness and completeness of academic knowledge and the organization of courses according to the logical order of different branches of study. Instead, the other three models have turned to be capacity-oriented, which develop learning modules according to capacity elements by employing modularized curriculum structure and centering on vocational capacity instead of pursuing academic logics.

2.3 Different Cultivation Methods

In "dual-script system", talents are mainly cultivated by enterprises. Students' time spent in the enterprise and school is 4:1 and vocational schools provide only part-time education.

In CBE Model, students achieve their cultivation goals mainly through their own efforts with the learning condition and assistance offered by their school and teachers.

Differently, TAFE seems more flexible because students have the freedom to choose to study at school, at the working

place or even at home. As long as they have got enough credits, they can gain their certificates and diplomas.

In MES, another flexible cultivation model, anyone can choose his individual learning method despite of his age or working experience. With the emphasis on students, learning stations and skills, students can fulfill their training tasks by teaching themselves or learning at learning stations and have their achievements assessed through the final examination.

3. Similarities among the Talent Cultivation Models

3.1 Emphasizing Practice

Students' practice, skills and techniques are particularly emphasized during the training process in "dual-script system". The ratio of theory to practice is 3:7 or 2:8. In addition, applicability of theoretical education is also emphasized and the two sections are closely related to each other to meet the demands of practice.

Most CBE teaching activities are conducted in practice classrooms which appear to be practice workshops but actually are equipped with advanced facilities.

TAFE requires perfect on-campus practice bases. Classrooms are also labs, hence combining learning environment with working environment to cultivate students' practical abilities. In such classrooms filled with teaching tools and experiment facilities, students have access to practice as well as theoretical knowledge and extra-curricular practice. As a result, education efficiency and students' efficiency in grasping knowledge and skills are improved a lot.

MES has perfect learning stations, experienced trainers, advanced facilities and places, providing sufficient and advanced learning and practice conditions. The combination of classrooms and labs provides favorable learning environment and working environment as well. In addition, teachers who are picked out from professional technicians are all experienced in practice.

3.2 Realizing Better Communication between Enterprises and Schools

Enterprise and school are two fundamental elements in "dual-script system" with the former emphasizing practical skills while the latter putting greater importance on theoretical knowledge.

CBE begins with occupational analysis which is intended to learn about enterprises and institutions in the service area, vacancies in certain occupations, demands for the improvement of staff capacity in certain occupations and to develop courses fit for an individual school. Professional experts who know well about the capacity required by an occupation are responsible for curriculum development while the task of designing teaching contents has to be given to educational experts. This is in better conformity to educational rules and also achieves better communication between enterprises and schools.

There are two groups of experts in TAFE Model: entrepreneurs who are not only equipped with teaching experience and academic capacity but also familiar with economic development and enterprise history due to their direct participation in corporate management are responsible for conducting educational researches, offering suggestion and consultation, conducting specialty settings and curriculum design and so on; educational experts who are experienced in management and practice as well as education emphasize the importance of designing specialties and courses according to the actual demands of enterprises in order to realize better communication between enterprises and schools.

In MES Model, the confirmation of occupational fields, the design of skill modules, the composition of learning units and the development of training outlines should be based on surveys on occupations, types of work and the most advanced facilities and techniques in order to exactly reflect the actual demands of enterprises for skills and techniques.

4. Lessons from the Foreign Models

Foreign vocational talent cultivation models have been converted from the classical ones into a diversified pattern which conforms better to local economic and social development. Lying in the current stage of popularization of higher education, the development of higher vocational education is of great importance in China. We can learn some helpful lessons from those foreign models.

Higher vocational education reflects the demands for talent cultivation reform with the development of economic society. Seen from the experience of foreign higher vocational education, it is an important guarantee for vocational education's sound development to set up talent cultivation models in conformity to a country's economic development and reality.

The development of higher vocational education is a systematic project, therefore, the efforts of educational departments and higher vocational colleges are far from enough. The idea of "broad education" must be based on to fully exert the government's macro-control and administrative legislation, to stimulate enterprises' enthusiasm to participate in talent cultivation and to inspire the passion and confidence for vocational colleges to innovate their talent cultivation models.

Despite their different cultivation methods, those foreign talent cultivation models have it in common to emphasize the analysis and cultivation of capacities, the construction of modularized courses and skill trainings based on occupational classification and capacity types as well as students' practice in real enterprise environment or virtual situations.

Certainly, the cultivation of different technological talents has their specialties as well as common rules. Therefore, it has been a necessary tendency in the reform and innovation of higher vocational talent cultivation models to increase practice opportunities, to realize the combination of on-campus and off-campus practice bases, to innovate teaching supervision system and to establish flexible cultivation schemes including necessary quality standards.

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The Relationship between Language Learners' Anxiety and Learning Strategy in the CLT Classrooms

Kun-huei Wu

Department of English, Aletheia University 32 Chen-Li St., Tamsui, Taipei, Taiwan Tel: 886-2-26212121 ext. 1142 E-mail: au4284@mail.au.edu.tw

Abstract

This paper intends to explore how Taiwanese students perceive the relationship between their language learning strategy and anxiety in the foreign language classroom. Due to their previous learning experience, most of the participants hold an unfavorable attitude toward a grammar-translation teaching approach. Consequently, learner-centered instruction has been widely accepted and acknowledged as a welcome concept and feasible teaching approach in the English Foreign Language (EFL) context. To improve the proficiency of language learners in EFL classrooms, it is very important to take into account the need of the learners. The present study utilizes Foreign Language Classroom Anxiety Scale (FLCAS) and Communicative Language Teaching Attitude Scale (COLTAS) to examine the participants' perceptions about learning English. The results indicate that most of the participants express a favorable attitude toward the Communicative Language Teaching (CLT) approach; however, they also reveal their high level of anxiety in the language classroom. Language anxiety is usually reported to have adverse effects on the learning of a second language. It is the language instructors' mission to accelerate the language learning of their students. One way is to teach students how to learn more effectively and efficiently. Language learning strategies (LLS) are procedures that learners can use to facilitate learning. Both teachers and students should develop an awareness of the learning process and strategies that lead to success. The ultimate goal of this paper is to analyze the factors that affect the participants' learning strategies and their language anxiety, and offer some pedagogical suggestions.

Keywords: Communicative Language Teaching, COLTAS, Anxiety, FLCAS, LLS

1. Introduction

Language learning/teaching entails five major components—students, teachers, teaching approaches, teaching materials, and evaluation. Conventionally, the instructor in the teacher-centered model determines what the teaching materials will be and tries to transmit them in one way or another. The test of learning is dependent heavily on the students' ability to memorize and produce the data at stated intervals. In this case, the students' task is to listen, remember, and then give evidence that they have registered the materials in their minds. Students, in the EFL context, focus on memorizing vocabulary, phrases, grammatical rules, and sentence structure, but they have difficulties applying the target language to their real life. The teacher-centered model in language classrooms has been questioned in educational circles. One way to modify this traditional pattern of teaching/learning is to give students more responsibility for learning. Some educators have maintained that the teacher at best can only establish an atmosphere for learning; the student must learn as a result of individual efforts (Webb, C. and Baird H., 1968). The concept of a student-centered approach has been acknowledged and accepted as one of the most feasible educational methodologies (Copeland, 1952). Teachers need to encourage students to rely more on themselves and less on the teacher. Students should be self-motivated with an inquiring nature. A number of studies reveal that motivation and attitude are closely related to achievement in language learning (Gardner and Lambert, 1972). Gardner (1985) defines motivation as "the combination of effort, desire to achieve the goal of learning the language, and favorable attitudes toward learning the language."

There are various factors affecting the learning of a foreign language, such as intelligence, motivation, attitude, age, gender, personality, anxiety, and so on (Skehan,1989). Language acquisition should be achieved naturally; however, learning a foreign language in the classroom, for most students, is full of challenges. One of the known challenges comes from the learners' affective factor, i.e., anxiety. Horwitz et al. (1986) define foreign language anxiety as "a distinct complex of self-perceptions, beliefs, feelings, and behaviors related to classroom language learning arising from the uniqueness of the language learning process" (p.128). A plethora of studies on the relationship between language learning and anxiety (Aida, 1994; Brown, 2000; Cheng, 2002; Ewald, 2007; Horwitz et. al., 1986; Young, 1992). Saito & Samimy (1996) assert that anxiety has a significant impact on language learning and achievement. Some studies conclude that high levels of anxiety usually have a negative effect on the language acquisition process (Gregersen, T., 2003; Krashen, 1985b; MacIntyre and Gardner, 1991; Price, 1991).

Language learners find it difficult to immerse themselves in an unfamiliar language setting. In this case, the target

language should be taught through mixed approaches designed for specific purposes. In the 1950s and 1960s, the grammar-translation and audio-lingual method of language teaching prevailed; however, the premium put on spoken communicative competence attracted more and more attention in the 1970s. Since then, the communicative approach has become one of the preferable choices in English language teaching. It is generally believed that language learning can be most effective when language practice occurs in meaningful contexts instead of isolated linguistic settings. Communicative Language Teaching (CLT), a teaching innovation that has spread widely over the past two decades, is arguably the most popular teaching method in the field of English Language Teaching (ELT). Beginning in the 1970s, voices for improving students' communicative competence became louder; the necessity to adopt another practical teaching method emerged. Communicative Language Teaching (CLT) is one of the methods featured in developing learners' communicative competence" has prompted reflection. Although it is extensively practiced in English as a Second Language (ESL) setting, it is not clear whether CLT is also being applied in the English as a Foreign Language (EFL) setting.

The present paper intends to explore learners' anxiety vis-à-vis the student-centered model in the CLT context. The major setting is a learning/teaching environment where language learners shift from passive to active roles. In other words, the focus will be altered from a traditional teacher-centered approach to a learner-centered one. The ultimate aim of this study is to examine the reliability and feasibility of the learner-centered model, and the variables that affect language performance in the EFL classroom.

2. Related Study on Anxiety

Tallon (2009) indicates that many factors determine the outcome of the learning process, including individual differences such as cognitive abilities, personality characteristics, learning styles, meta-cognitive differences, social contexts, and affective aspects. He points out that one of the most important affective variables in learning a foreign language is foreign language anxiety. The effects of anxiety on foreign language learning have been extensively reported in social psychology, educational psychology, and speech communication. Nevertheless, the issue of whether anxiety is a stable construct was questioned until the Foreign Language Classroom Anxiety Scale (FLCAS) (See Appendix A). Horwitz et al. (1986) isolated foreign language anxiety from other forms of anxiety and provided a reliable and valid measure to gauge university students' level of anxiety. Language anxiety is the feeling of tension and apprehension specifically in second-language contexts, including speaking, listening, reading, and writing (MacIntyre and Gardner, 1994). It has been estimated that approximately one-third of students learning a foreign language experience some type of foreign language anxiety (Horwitz et al., 1986). Elkhafaifi (2005) makes a study concerning listening comprehension and anxiety in the Arabic language classroom. Phillips (1992) focuses on the effects of language anxiety on students' oral test performance and attitude. Sellers (2000) presents the relationship between reading and anxiety in Spanish as a foreign language. Cheng (2002) analyzes factors associated with foreign language writing anxiety in the EFL context. Students or language learners in these studies experience different levels of anxiety.

Crookall and Oxford (1991) assert that serious language anxiety may adversely affect students' self-esteem, self-confidence, and ultimately hamper proficiency in language acquisition. Typically, there are three types of anxiety: trait, state, and situation-specific (Spielberger, 1966). Trait anxiety is a relatively stable personality characteristic in a wide range of situations. A person with this predisposition tends to become predictably nervous in any situation (Spielberger, 1983). State anxiety refers to the transient emotional state of feeling nervous that can fluctuate over time and vary in intensity, i.e., a moment-to-moment experience of anxiety (Goldberg, 1993). Situation-specific anxiety is like trait anxiety, but it refers to apprehension in a particular context or situation, such as math anxiety, stage fright, or fear of public speaking. Generally speaking, foreign language anxiety is seen as related to situation-specific anxiety. Most scholars agree that foreign language anxiety is a complex phenomenon and predicator of foreign language achievement.

2.1 Anxiety-provoking sources and impact on L2 learning

Horwitz et al. (1986) identify three related foreign language anxieties: communication apprehension, test anxiety, and fear of negative evaluation. Communication apprehension refers to the fear of communicating with other people. It is a type of shyness characterized by fear or anxiety about communicating with people. Test anxiety is about the fear of exams, quizzes, and other assignments used to evaluate students' performance. The fear of negative evaluation refers to the apprehension about others' evaluation. Young (1994) categorizes anxiety-provoking sources into three groups: learner-related, instructor-related, and instructional practice-related. There are numerous anxiety-provoking sources in the classroom, such as speaking activities, negative classroom experience, native speakers, a harsh teaching manner, inability to comprehend, the learner' learning style, and the learning context (Oxford, 1999; Phillips, 1999; Reid, 1995; Samimy,1994). Young (1999) points out that speaking or giving a presentation in front of the class is an in-class activity producing high level of anxiety.

Although studies reveal that anxiety may result in adverse effects on language learning, it is also believed that anxiety

could motivate language learning. Alpert and Haber (1960) distinguish harmful and helpful anxiety as facilitative and debilitative anxiety. Facilitative anxiety is seen as a drive to improve performance. Debilitative anxiety, on the contrary, hinders a learner's achievement. A number of studies have shown that language anxiety brings forth potential negative effects on academic achievement, such as communication skills, oral proficiency, reading comprehension, listening skills, and writing skills. Most of the studies reveal that high-anxious learners either expect or receive lower grades than their less anxious peers. It is important for teachers and educators to create a less threatening environment in which language learners may learn more efficiently. Those who have higher levels of anxiety are likely to be reticent or unwilling to communicate in the classroom. Ellis (1994) indicates that anxiety is one of the main reasons for learners' reticence.

2.2 Reticence in the Classroom

Kachru (1997) presents his concentric circle model to analyze the spread and diffusion of English. Asian countries such as Taiwan, Japan, Korea, and China have been categorized in the expanding circle where English is primarily a foreign language. As English is increasingly becoming the "lingua franca," the above-mentioned countries have undertaken reform in the teaching of English as a foreign language. However, students from the countries mentioned are reticent and passive learners (Cortazzi and Jin, 1996; Flowerdew and Miller, 1995; Jones, 1999; Li, 1998; Tsui, 1996). They are often reluctant to participate in classroom discourse. Studies also reveal that many are unwilling to give response, seldom ask questions, and are overly dependent on the teacher.

One of the contributing factors to this phenomenon is traditional culture. Confucian influences are regarded as the main cause of perceived reticence in students from Asian countries. In other words, teachers dominate the learning process, while students passively receive the knowledge from the teachers. Culture and previous education are cited as plausible factors shaping students' apparent reticent behavior. Kubota (1999) indicates that Asian culture generally value collectivism and discourage individual self-expression. Nimmannit (1998) points out that Chinese student self-image and identity are dependent on their relationship with classmates; as a result, they may feel uncomfortable when asked to answer questions or express ideas. Turner and Hiraga (1996) indicate that Japanese students in Britain appear passive and unwilling to engage in dialectic and analytic discourse in tutorials; and they attribute such passive behavior to Japanese academic culture, which values the demonstration rather than transformation of knowledge. In their study, Littlewood and Liu (1997) address some of the reasons for student reticence, such as a lack of experience, lack of confidence, anxiety due to high performance expectations, and their perception of the learner role.

In the EFL context, one of the striking reasons for learner reticence is due to lack of experience in speaking English. Kouraogo (1993) attributes learner reticence to environment in which most L2 learners communicate in L1 outside the classroom. Students in such an environment lack confidence in their spoken English and become anxious when they need to use English as a vehicle of communication. In a teacher-centered teaching model, the teacher does all the lecturing in the classroom. Typical learning strategies such as reception, memorization and reproduction, and mastery seem to encourage learners to be more passive. Much attention is paid to language form instead of its function. It is not surprising that the majority of the language learners are capable of learning to read the target language with varying degrees of success, but when it comes to oral communication, most of them become hopelessly dysfunctional (Huang, 1990).

3. Study on attitude toward CLT

CLT is arguably today's most popular teaching method in the field of English Language Teaching (ELT). Although it is extensively practiced in the English as a Second Language (ESL) setting, it is not clear CLT is also being applied in the English as a Foreign Language (EFL). Savignon (1991) indicates that CLT is not a British, European, or U.S. phenomenon, but rather an international effort to respond to the needs of the contemporary classroom (p.261).

Nevertheless, it is difficult to define CLT due to the complexity and interrelatedness of skills in both written and oral communication. For the sake of simplicity and directness, Brown (2001) lists six interconnected characteristics of CLT. First, classroom goals are focused on all of the components (grammar, discourse, function, sociolinguistic characteristics, and strategies) of communicative competence. Goals must intertwine with the organizational and pragmatic aspects of language. Second, language techniques are designed to engage learners in the pragmatic, authentic, functional use of language for meaningful purposes. Organizational language forms are not the focus, but rather aspects of language that enable the learner to accomplish those purposes. Third, fluency and accuracy are seen as complementary principles underlying communicative techniques. At times, fluency may have to take on more importance than accuracy in order to keep learners meaningfully engaged in language use. Fourth, students in a communicative class ultimately have to use the language, productively and receptively, in unrehearsed contexts outside the classroom. Classroom tasks must therefore equip students with the skills necessary for communication in those contexts. Fifth, students are given opportunities to focus on their own learning process through an understanding of their own styles of learning and through the development of appropriate strategies for autonomous learning. Sixth, the role of the teacher is that of facilitator and guide, not an all-knowing bestower of knowledge. Students are therefore encouraged

to construct meaning through genuine linguistic interaction with others (p. 43).

In the teacher-centered model, the grammar-translation approach has made language learners become more passive and reticent. And the shortcomings of audio-lingual methodology are widely acknowledged (Savignon, 1991). It is necessary, therefore, for teachers to adopt another teaching approach that better suits the needs of language learners. From its introduction into discussions of language learning, the term "communicative competence" has prompted reflection. English teachers from countries such as China, Greece, South Korea, and Turkey have made attempts to implement CLT; however, research has shown that English teachers from these countries have faced many constraints that have hindered them from fully adopting this approach (Burnaby and Sun, 1989; Eveyik-Aydin, 2003; Karavas-Doukas, 1996; Li, 1998). Some of the more common constraints include large classes, grammar-based examinations, teachers' lack of cultural knowledge, lack of communicative teaching materials, and students' low English proficiency. The aforementioned studies affirm the importance of understanding and taking into account teacher and student attitudes toward innovative teaching (CLT) and abilities when attempting such an approach. As Li (1998) points out, "How teachers as the end users of an innovation perceive its feasibility is a crucial factor in the ultimate success or failure of that innovation" (p. 698). Karavas-Doukas (1996) examines Greek English teacher attitudes toward CLT and finds that most have mildly favorable to favorable opinions of this methodology. Nevertheless, upon observing some of these teachers in the classroom, researchers find that teaching practices do not correspond with attitudes toward CLT. There is an emphasis on form, the classes are teacher-centered, and there are no group activities. In this case, the discrepancy is caused by a lack of understanding of CLT principles. The author makes note of the importance of not discounting teachers' beliefs and attitudes prior to the introduction of a new teaching method.

Eveyik-Aydin's (2003) examination of Turkish English teacher attitudes toward CLT indicates that most have a favorable attitude with some reservations. These reservations concern constraints that are caused by the educational system–large classes and inflexible curriculum; teachers' beliefs and educational values; and the student's low proficiency, fear of making mistakes, and the pressure of having to pass national examinations. In their study on the effect of language context on Chinese teachers' views of CLT, Burnaby and Sun (1989) find that teachers perceive the communicative approach as more suitable for those planning to study or live in an English speaking country (English as a Second Language (ESL) context), but not for those, especially English majors, who plan to remain in China (English as a Foreign Language (EFL) context). For the latter, the traditional methods are perceived to be more appropriate, given their specific needs and learning goals. The study also reveals that local teachers view their non-native English speaking teacher status as a limitation (e.g., lack of familiarity with authentic texts, lack of knowledge in regards to appropriate cultural contexts, and no target language "intuition"). Furthermore, the pressure to teach to grammar-focused examinations, the clash of teaching philosophies, large classes, and a lack of resources are all seen as constraints on the application of CLT.

Li's (1998) study of South Korean English teacher's perceived difficulties in adopting CLT is similar to the above. Perceived difficulties specifically related to teachers include teacher deficiency in spoken English and strategic and sociolinguistic competence, lack of training in CLT, limited opportunities for retraining in CLT, misconceptions about the approach, as well as a lack of time and expertise to develop communicative materials. Perceived educational system constraints consist of large classes, grammar-based examinations, and lack of funding and support. Perceived difficulties caused by CLT itself include an inadequate account of EFL teaching and a lack of effective and efficient instruments for assessment. Finally, perceived difficulties related to students included low English proficiency, little motivation for communicative competence, and resistance to class participation. This last point is further endorsed by two studies investigating student attitudes toward CLT. In Matsuura, Chiba, and Hilderbrandt's (2001) study, Japanese students prefer traditional methods–learning isolated skills, focusing on accuracy, and the teacher-centered approach. The Chinese students in Rao's (2002) study prefer non-communicative activities such as audio-lingual drills and workbook type drills over communicative activities.

The current communicative approaches to second language instruction emphasize the importance of learners using the L2 in oral and written tasks. However, language learners in the EFL context are usually reported reticent and passive. It is important to understand their problems and provide appropriate learning strategies to help them learn more effectively and efficiently. A learner's willingness to communicate is related to a variety of factors such as motivation, attitude, English proficiency, foreign language anxiety, situational context, language learning strategy and so forth. (Yashima et al., 2004). This paper will attempt to conduct an investigation of the select participant attitudes toward CLT, examining factors resulting in their language anxiety, discussing the impact of their language learning strategies on their performance in the CLT classroom, and thus provide some pedagogical suggestions for the instruction of English.

4. The Study

The concept of the student-centered approach is no longer new in educational circles. English education in Taiwan has recently shifted from grammar-focused reading methods to more communication-oriented ones. However, it is not easy to implement fully the student-centered approach. Horwitz et al. (1986) note that one-third of students learning a foreign
language experience some type of foreign language anxiety. Why do many students appear unwilling to participate in the learning discourse? MacIntyre et al. (1998) define willingness to communicate (WTC) as a learner's "readiness to enter into discourse at a particular time with a specific person or persons, using a L2." Yashima and Zenuk-Nishide (2004) reveal that a learner's WTC influences how frequently the learner actively engages in communicating in the L2. Asian learners from Japan, Hong Kong, Taiwan, China, and South Korea are reported passive and unwilling to participate and communicate in the classroom. Early models of WTC predict that high levels of perceived competence combined with low levels of anxiety would lead to greater WTC and in turn more frequent communication in the L2. Studies (Flowerdew, J. and Miller, L., 1995; Ferris, D. and Tagg, T., 1996) reveal culture and previous education are the main reasons for student reticence and passivity. Cortazzi and Jin (1996) claim that learning a language for Chinese students is influenced by traditional Confucianism and can be seen as fundamentally concerned with mastery of grammar and vocabulary. The students obtain their knowledge mainly from two authoritative sources: the teacher and the textbook. The role of a teacher is to transmit the knowledge about language to students in the language classroom. Students receive the instruction from their instructors with respect. The interaction between the teachers and students in the classroom is profoundly influenced by the traditional teaching/learning model.

These generalizations do not mean that all individuals, either instructor or learners, will conform to the same cultural norms. Tudor (1998) claims that language learning/teaching is unique to each classroom and difficult to predict. The traditional culture of learning has been changing partly because of social and economic developments and partly due to new communicative approaches to language learning. Thus, more and more attention is paid to student needs as a learner-centered notion. CLT emphasizes the importance of classroom interaction and student participation as ways of learning and developing skills related to the functions and uses of language. In a traditional teacher-centered teaching and learning environment, the learners are bound to be reticent and passive. With a more innovative method, the classes are likely to be completely different. In order to capture select student perception of their learning in a communication-oriented classroom, the following research questions are proposed:

- (1) What are the select learner attitudes toward Communicative Language Teaching (CLT)?
- (2) What is the relationship between learner anxiety and learning strategy?
- (3) What are the perceived difficulties of adopting CLT in the EFL classrooms?

4.1 Research Instrument

The present study uses three instruments: the Communicative Language Teaching Attitude Scale (COLTAS) (Appendix A), Foreign Language Classroom Anxiety Scale (FLCAS) (Appendix B), and Strategy Inventory of Language Learning (SILL) (Appendix C). COLTAS is utilized to understand select participant attitudes and perceptions toward the four domains of CLT. FLCAS is used to examine participants' level of anxiety in the language classroom. Strategy Inventory of Language Learning will assess the participants' language learning strategy.

The Communicative Language Teaching Attitude Scale (COLTAS) developed by Eveyik-Aydin (2003) is a five-point, Likert type attitude scale consisting of 36 statements based on the fundamental characteristics of CLT and categorized into four domains: group/pair work, place of grammar, student/teacher roles, and peer/teacher corrections. Of all the statements, half of them have been designated as "negative" because they support the traditional approach to language teaching, while the other half have been designated as "positive" because they reflect the principles of CLT. As in Evevik-Aydin's (2003) study, the positive items on the scale that reflect the principles of CLT are assigned a high score of 5 for "strongly agree" down to a low score of 1 for "strongly disagree." The negative items on the scale, those that reflect a traditional view of language teaching, are assigned a reverse score of 1 for "strongly agree" up to 5 for "strongly disagree." Thus, participants in favor of the communicative approach will score between 4 and 5, whereas those in favor of the traditional approach will score between 1 and 2. Accordingly, the higher the scores obtained on COLTAS, the more favorable the participants' attitudes toward CLT; and the lower the score, the less favorable are the participants' attitudes. Scores for each participant are calculated and placed within the following categories. Scores between 180 and 144 (36x4) reveal a very favorable attitude toward CLT; whereas scores between 36 and 72 (36x2) reveal a very unfavorable attitude. A score of 108 (36x3) reveals a neutral attitude toward CLT. Scores between 109 and 143 show a favorable attitude with some reservations toward CLT, while scores between 73 and 107 reflect unfavorable attitudes with some reservations. These scores are also tabulated to determine participants' attitudes toward each of the four domains of the scale-group/pair work, grammar, student/teacher roles, and peer/teacher corrections.

The FLCAS was developed by Horwitz et al. (1986) to measure anxiety specific to a foreign language classroom setting. The scale utilizes five-point Likert items, ranging from "strongly disagree" to "strongly agree." It is used to measure a person's level of anxiety and score by adding up the ratings on the 33 items. The range is from 33 to 165; the higher the number, the higher the level of foreign language anxiety.

Learning strategies are "procedures or techniques that learners can use to facilitate a learning task" (Chamot, Barnhardtd, El-Dinary, and Robbins, 1999, p.2). Language learners become more motivated as they begin to understand

the relationship between their use of strategies and success in learning language. Strategy Inventory of Language Learning (SILL), developed by Oxford (1989), is a 50-item, Likert-scale, self-report instrument intended to assess how frequently language learners use a variety of language learning strategies. Memory strategies, cognitive strategies, compensation strategies, meta-cognitive strategies, affective strategies, and social strategies are six main categories in SILL. Memory strategies help learners to retrieve and store information; cognitive strategies are used for forming and revising internal mental models and receiving and producing messages in the target language; compensation strategies allow learners to overcome gaps in knowledge of the language; meta-cognitive strategies help learners to self-direct language learning; affective strategies enable learners to control feelings, motivations, and lower their language anxiety; social strategies facilitate interaction with others. The modified questionnaire was designed specifically for the present study, consisting of 18 items, using a 5-point Likert scale from 1 (never or almost never true of me), 2 (usually not true of me), 3 (sometimes true of me), 4 (usually true of me) to 5 (always or almost true of me) (Appendix C). The higher the score they obtained, the more frequently the strategy is used.

4.2 Participants

The selected participants in the present study consist of 66 students in the weekend classes program at one of the universities in northern Taiwan. All the participants are English majors; 32 are freshmen, and 34 sophomores. They are full-time workers in various occupations; 41 are female and 25 male, aged from 23 to 54. They come to class on the weekend, Saturday and Sunday, 9:05 a.m. to 5:00 p.m. They need to spend two years to complete the required courses, and then they graduate with a B.A. The reasons they choose English as their major are multidimensional; one of their common expectations is to improve English ability. Two native English speaking teachers are invited in this study, whose teaching experience has been over ten years. Both of them are teaching oral conversation and reading classes.

4.3 Data Collected and Analysis

In March 2009, a background questionnaire and a proficiency test were administered to the students. The items in the questionnaire consist of gender, age, employment status, years of learning English, and time studying English outside the classroom (Table 1). The background questionnaire is an indispensable source of information vis-à-vis their language-learning strategies and language anxiety. The proficiency test consists of 100 questions, 50 questions address reading comprehension and the other 50 listening comprehension. Based on the result of the proficiency test, they are divided into two experimental groups. The students in Group 1 (n=33) are reported as learners with higher English proficiency, and Group 2 (n=33) lower proficiency.

Insert Table 1 about here

COLTAS was also administered to the students, 66 valid questionnaire samples were collected. The results show that 16 students had a very favorable attitude, 41 a favorable attitude with some reservation, 6 expressed uncertainty, and 3 expressed an unfavorable attitude with some reservation (Table 2). Table 2 provides a clear picture regarding student attitudes toward CLT. Overall, 24% of participants had a very favorable attitude, 62% a favorable attitude with some reservations, and 14% an uncertain attitude with some reservation.

Insert Table 2 about here

The four domains, consisting of 36 items, in CLT are teacher/student role, pair/group work, grammar, and peer/teacher correction. Of all the statements, half were "negative" because they support the traditional perspective on language teaching, while the other half were "positive" because they reflect the principles of CLT (Table 3). Table 3 itemizes participant response vis-à-vis the positive principles of CLT.

Insert Table 3 about here

According to Table 3, most of the participants have a favorable attitude toward the principles of CLT. As to student/teacher roles, the statistical analysis shows that the majority of them agree that language classes should be student-centered, not teacher-centered (item 1, M=4.21, SD=0.98), allowing for more student-student interaction than teacher-student interaction (item 31, M=3.76, SD=1.09). They affirm that tasks and activities should be designed based on student needs (item 18, M=4.09, SD=1.01), and that teachers should help students develop sociolinguistic competence (item 27, M=3.98, SD=1.03).

Regarding group /pair work, most of the participants agree that it is effective in developing student oral conversational skills (item 6, M=4.01, SD=1.05) because it creates a motivating environment for students to use English (item 7, M=3.79, SD=1.04), promotes a greater amount of student involvement (item 15, M=4.02, SD=0.09), and increases the quantity of oral/aural language practice (item 34, M=3.96, SD=1.02). Moreover, group/pair work helps those students not willing to speak in front of a full classroom (item 16, M=3.95, SD=1.01).

Regarding grammar, most agree that in order to develop communicative skills, explicit grammar teaching is not necessary (item 13, M=3.78, SD=1.04); though grammar may be included in a communicative lesson, it is not the main goal of teaching (item 33, M=3.98, SD=1.12). In addition, most agree that teaching should emphasize language use

rather than language rules (item 14, M=3.99, SD=1.05) and meaning-focused activities rather than form-focused activities (item 22, M=3.67, SD=1.02).

Finally, concerning peer/teacher correction, most agree that teacher correction should be avoided when it interrupts the flow of communication (item 3, M=3.31, SD=1.02); however, it ought to be provided when required for effective communication (item 25, M=3.19, SD=1.17). They agree that feedback should focus on the content of the activities (item 10, M=3.87, SD=1.06) and the appropriateness of student responses rather than on the form of the language (item 20, M=3.54, SD=1.09). Furthermore, most favor allowing student-student correction to take place in the classroom (item 8, M=3.27, SD=1.15).

The results above reveal the select participant attitudes regarding this innovative teaching approach. Most had positive attitudes toward the four domains of CLT, although some expressed a degree of reservation. In addition to understanding participant attitudes, it is also important to gauge their levels of language anxiety in the classroom. Furthermore, it is helpful for students to develop an awareness of the learning process and strategies that lead to success in learning a second language. To achieve this goal, the Foreign Language Classroom Anxiety Scale (FLCAS) and Strategy Inventory Learning Language (SILL) were administered to the participants in April 2009 survey.

The results (Table 4) reveal that the majority suffer from language anxiety in the classroom. Seventeen percent (n=11) of the participants obtained scores between 133 and 165; 73% (n=48) obtained scores between 100 and 132; and 10% (n=7) obtained scores between 67 and 99. Overall, 90% of the participants experienced high levels of anxiety.

Insert Table 4 about here

Weinstein and Mayer (1986) define learning strategy broadly as "behaviors and thoughts that a learner engages in during learning" which are "intended to influence the learner's encoding process" (p.315). Oxford (1992) indicates that language learning strategies are specific actions, behaviors, steps, or techniques that students use to improve their progress in developing L2 skills. These strategies are tools for the self-directed involvement necessary for developing communicative ability.

The results (Table 5) in the present study reveal that Group 1 learners (higher English proficiency) use various learning strategies more frequently than students in Group 2. Item 1: reading aloud (Group 1, M=3.12; Group 2, M=2.79); Item 2: consciously learning new vocabulary (Group 1, M= 3.76; Group 2, M= 3.0); Item 3: making a sentence when learning a new word (Group 1, M=3.55; Group 2, M=2.98); Item 4: using English-English dictionary (Group 1, M= 2.99; Group 2, M= 2.23); Item 5: trying to think in English (Group 1, M= 2.99; Group 2, M= 2.88); Item 6: skimming (Group 1, M=3.28; Group 2, M=3.14); Item 7: predicting or guessing (Group 1, M=3.12; Group 2, M= 2.77); Item 8: learning from mistakes (Group 1, M=3.89; Group 2, M=3.90); Item 9: using synonym or antonym (Group 1, M=3.13; Group 2, M=2.96); Item 10: setting learning goals (Group1, M=3.18; Group 2, M=2.69); Item 11: learning from the teacher (Group 1, M=4.0; Group 2, M=4.16); Item 12: reading newspaper in English (Group 1, M=2.67; Group 2, M=2.35); Item 13: watching TV in English (Group 1, M=4.11; Group 2, M=4.09); Item 14: reading English magazines for pleasure (Group 1, M=3.85; Group 2, M=3.06); Item 15: listening to the radio in English (Group 1, M=3.46; Group 2, M=3.23); Item 16: discussing with classmates (Group 1, M=4.18; Group 2, M=3.75); Item 17: making friends with native speakers (Group 1, M=2.46; Group 2, M=1.59); Item 18: Self-assessment (Group 1, M=2.68; Group 2, M=1.99).

The results above reveal that only two items (item 8: learning from mistakes and item 11: learning form the teacher) in Group 2 obtained higher mean scores than Group 1. Most of the other items in Group 1 have higher mean scores than those in Group 2. Oxford (1992) indicates that successful learners generally employ a larger variety of learning strategies more frequently than do poor learners. To help students learn better, it is important to take into account the language learning strategies in the teaching/learning of English.

Insert Table 5 about here

4. Discussion

Classrooms are not only places where students learn, they are also places where teachers can learn. In the present study, both quantitative and qualitative analyses are applied to help teachers understand better student attitudes and perceptions vis-à-vis learning strategies and language anxiety in the CLT classrooms. Although 86% of participants had a positive attitude, 62% had some reservations. To get a more complete picture of their perception, a 20-miniute interview was given to eight select participants, four male and four female. The eight participants included four freshmen, and four sophomores. Four of them were in Group 1, and whose English proficiency was better than the four in Group 2: F1(Andrew), S1 (Dilan), F2(Mark), S2(Jay) , F3(Mary), S3(Jennifer), F4(Alice), and S4(Doris). The interviews were recorded and then transcribed. The interview questions were mainly from COLTAS, FLCAS, and SILL. The ultimate aim of the interview was to understand their perceptions vis-à-vis learning English in a student-centered, CLT classroom.

Based on the results, the participants in the present study show favorable attitudes toward CLT. The interviews reveal

that traditional grammar-translation teaching methodology and teacher-centered learning offer the select participants little opportunities to practice the target language in the classroom. Most of their time has been spent preparing for tests. Although students are good at memorizing vocabulary and grammatical rules, they indeed have difficulties learning real-life communicative English. They reveal that they seldom use English as a communication medium in their daily life. In their previous learning experience, local English teachers ask them to memorize a lot of vocabulary and phrases, and analyze grammar rules for them. Affected by the pressure of examinations, they seldom communicate in English in the classroom or after class. L1 is used most of the time in the foreign language classroom. That is one of the causes of student reticence. Kouraogo (1993) attributes students' poor English performance to the lack of opportunity, and claims that it is a major factor in poor environments, where English is seldom used outside the classroom. Most of the participants reveal that native teachers prefer adopting a student-centered approach along with more discussion and presentation. Students who are used to traditional teacher-centered model would have difficulties adapting themselves to an innovative learning environment.

Although discussion is a kind of productive language practice, some of the participants regard it as useless. One of the freshmen (Mary) indicates that pair/group activity certainly motivates and inspires them to practice English in the classroom. The outcome, however, fails to meet their expectations.

F3 (Mary): I agree that pair/group work could motivate shy students to be involved in the discussion, and provide us with more chances to practice English. But, L1 is often used more than the target language during the process of our practice (April 11, 2009).

One of the sophomores notes that teacher correction is more efficient than peer correction. One of the main reasons for this is their deficiency in spoken English.

S3 (Jennifer): Although peer correction may increase more interaction between students, I am concerned about its efficiency. The reason is that our English level is not good enough to correct other's mistakes (April 11, 2009).

Another freshman (Andrew) points out that low English proficiency is the cause of their reticence in the classroom, though they are willing to communicate with teachers or their classmates; limited English proficiency becomes one of their major constraints when they are conducting group work or peer correction.

F1 (Andrew): I love to chat with my teachers and classmates, but I feel that I still lack confidence when I use English as the communication medium. I choose English as my major because I have a very strong desire to improve my English proficiency. I am very anxious when I am going to speak in front of the whole class (April 11, 2009).

In addition, most agree that teaching should emphasize language use rather than language rules. Nevertheless, the grammar instruction cannot be completely avoided if it enables students to use English more correctly. F3(Mary) reveals her worry by saying that proper grammatical correction is necessary, because she doesn't know what mistakes she has made.

Learning a foreign language, anxiety is one of the shared experiences, especially for language learners in the EFL context. Communication apprehension, test anxiety, and negative evaluation have impacted language learners profoundly. The interviews reveal that sources of anxiety are often intertwined. For example, teachers, activities, pedagogical practices, and evaluation are plausible anxiety-provoking factors in the language classroom. When asked their perception of native teachers, positive and negative comments co-exist. "Authenticity" or "real model" is said to account for the status of native teachers. Another sophomore (Dilan) notes that native teachers offer them a real model to follow, and a real context to use English, when compared to non-native teachers. But, he adds that native teachers do not perform as well as non-native teachers in terms of grammar knowledge. In addition, native teachers rarely acquaint themselves with the students' native language. Thus, native teachers can hardly anticipate and predict students' difficulties in the learning process. By contrast, non-native teachers usually can foretell students' learning pitfalls and thus provide a good learner model to their students.

S1 (Dilan): I feel more anxious when I speak to native teachers compared to non-native teachers. Fortunately, our native teacher is very kind and humorous. I love to ask questions though my English is very poor. Non-native teachers are also very good, but I prefer being taught by native teachers. When I talk to non-native teachers, I will rely on L1 more. When I talk to native teachers, I can only use English (April 11, 2009).

Medgyes (1994) claims that both native and non-native teachers could be successful EFL/ESL teachers. He states that an ideal native teacher is one who has achieved a high degree of proficiency in the learners' mother tongue; an ideal non-native teacher is one who has achieved near-native proficiency in English (p.348-349).

The role of teachers in the language classroom, suggested by one of the freshmen (Alice), ought to be one who alleviates students' anxiety and provides them with supportive and non-threatening teaching methods.

F4 (Alice): Although I have learned English for over six years, I have problems communicating with native speakers. In the previous learning experience, I have never been taught by native teachers, and most of the local teachers use L1 to

explain a lot about English grammar. I am very nervous when I face to native teacher for the first time in the classroom. I feel very stressful at the very beginning, but now I am more used to chatting with native teachers (April 12, 2009).

One of the freshmen (Mark) notes that it will be difficult for them to learn efficiently in a stressful atmosphere. One of the sophomores (Doris) reveals her frustration and uneasiness when giving a presentation in front of the class. She suffers from stress, mentally and physically. Another sophomore (Jay) notes that a more humorous teacher is usually popular because s/he makes the class more fun or relaxed.

Mark, Doris, Jay: We have to work Monday through Friday, and we have very little time to practice English. We feel very stressful because we have a lot of assignments, such like quiz and presentation. Some of our classmates perform very well in the class because of their occupation. Some of them have to use English almost every day, but we seldom use English in our working place. We are very motivated to learn, but we also suffer from frustration sometimes. In summary, a less anxious learning environment will be very helpful to us (April 12, 2009).

Language learners who are free from pressure show more confidence and willingness to practice in the classroom. In other words, language must be acquired naturally just as a child who picks up her/his first language. Krashen (1985) promotes the Affective Filter Hypothesis to stress the importance of building a classroom environment that is less threatening to anxious students. It is particularly important to reduce anxiety for learners with low proficiency and confidence.

Although most of the participants in this study show positive attitudes toward CLT, they also have a high level of anxiety in the classroom. As shown in Table 4, four male participant and three female participants show more confidence than the rest. Most of the participants experience different levels of anxiety in the classroom. Through interviews, the select eight participants share their opinions on learning strategies and their perception of the relationship between learning strategies and language anxiety. Four of the select participants in Group 1 show more confidence than the other four in Group 2. The findings reveal that those students who have expended much effort and time studying English tend to use a larger variety of learning strategies more frequently and they feel less anxious when they use English. One of the interviewees indicates that he likes to watch movies or TV programs in English every day because he finds it pleasurable to learn English in a more relaxed setting.

F3 (Mary): I usually watch movie spoken in English on TV after work. I try not to look at the Chinese translation, because I want to put myself in an entire English-only environment. On the one hand, I may use it to increase my listening comprehension; on the other hand, I treat it as a relief from pressure after work. Besides, I love to think in English and talk to my friends in English. I feel that the more time I expose myself to the L2 context, the less anxious I will feel (April 11, 2009).

S3 (Jennifer), S4 (Doris), and F2 (Mark) support Mary's arguments in terms of their own learning strategies.

S3 (Jennifer): I usually take advantage of every possible moment to read an English newspaper and take notes. I need to write a report in English, and communicate with my clients outside of Taiwan in English. I feel more and more confident and less anxious because I use the target language every day (April 11, 2009).

S4 (Doris): I am a salesperson in a business company. I have to do a lot of presentations, either in Chinese or in English. It made me feel very nervous at the very beginning, so I spent much time practicing at home. My family members were my audience, and they offered suggestions to make me feel more comfortable and less anxious when giving a presentation in front of a large group of people (April 12, 2009).

F2 (Mark): I consciously learn new English words every day, because it will be very helpful when I read English magazines or listen to English songs (April 12, 2009).

The above four participants who use the target language more frequently are more confident and less anxious. On the contrary, those who use less frequently the target language have higher level of anxiety. One of the participants notes that English proficiency seems to influence his learning strategy.

F1 (Andrew): I have difficulty understanding English programs without the assistance of Chinese captions. I use an English-Chinese dictionary most of the time and seldom use an English-English dictionary when I come across a new word. I really want to improve my English ability, but I don't have enough time to practice (April 11, 2009). The other three participants -- Dilan, Alice, and Jay-- also express their learning problems.

S1(Dilan): I try to think in English, but it is too hard for me. My English is very poor. I speak English only in the classroom (April 11, 2009).

F4(Alice): I never keep a diary in English. I seldom use English to communicate with my colleagues in the office (April 12, 2009).

S2 (Jay): I learn English from my English teachers. I have no foreign friends, so I feel nervous when I talk to native speakers (April 12, 2009).

The results above indicate that motivation, effort, and English proficiency have significant influence on their leaning strategies and levels of anxiety. In addition, factors such as the participants' gender, age, employment status, years of leaning English, time to study English outside the classroom play a major role in mastery of English. In the case of gender, for example, females show higher levels of anxiety than males. Female participants become nervous when asked to answer questions in class, especially when they are singled out or have to give a presentation. They worry about their English proficiency and making mistakes in front of the class. But, they feel less anxious when they are in a pair or group. Regarding age, participants between 24 and 30 years old have lower levels of anxiety than older participants. The finding reveals that participants aged 51 to 60 prefer a teacher-centered teaching model to a student-centered model, while younger participants are more likely to accept an innovative teaching approach. As to employment status, those who work in the business and education fields show lower levels of anxiety in the classroom. When asked about the reasons they feel less anxious in the language classroom, the three participants who got the lowest scores all refer to the importance of environment, especially the frequency of exposure to the target language. Because of their occupation, these three participants have a lot of chances to communicate with people from different cultures. They are more attuned to diverse accents and feel less anxious when English is the main communication medium. In other words, the higher the frequency L2 is used, the lower the anxiety. The results also indicate that participants who have studied English for more than ten years have more confidence, and participants who use English outside the classroom more than 15 hours per week show lower levels of anxiety.

5.1 Pedagogical implication and Suggestion

CLT puts the focus on the learner. The role of the teacher is that of a facilitator, advisor, and co-communicator. The role of the students is to communicate by participating in meaning-negotiation activities and to manage their own learning. CLT will fail if teachers have an unfavorable attitude toward it and do not believe that this approach will work for them. In this study, both native teachers surveyed had a positive attitude to CLT. One of the native teachers notes that he prefers adopting activities such as pair/group discussion as well as peer correction to motivate students' participation and generate more interaction in the classroom.

Luke: I love to teach weekend program students, you know, they are mature and full of motivation. Although their English proficiency is not very good, their attitude is great, compared to my day-time students. I usually try to make them feel comfortable and encourage them to practice English in the class. Most of them perform well, and we have wonderful interaction (April 18, 2009).

Although some of the participants are very anxious and shy when assigned to speak in class, they have a positive attitude and strong motivation to practice English. It is very pleasant to adopt the CLT approach in a reading class, says another native teacher.

Edward: The students in my class are eager to improve their English ability, although some of them are very shy and nervous. I love to do pair or group activities to motivate them to practice English in the class. In the beginning, they are not used to being assigned an activity. After a while, however, they enjoy discussing with each other in class. I try not to correct their mistakes most of the time during their discussion. Fluency is more important than accuracy at the first stage for language learners (April 19, 2009).

Although CLT is one of the popular teaching approaches, there are still some controversies. For example, the word "fluency" in contrast to "accuracy" has been widely used in CLT. In CLT, fluency refers to effectiveness of language use within the constraints of limited linguistic knowledge. The notion of fluency is used to assess how well learners use their knowledge to achieve their linguistic and communicative goals. Fluency is a commonly used notion in foreign language teaching and yet it is a concept that is difficult to define precisely (Chambers, 1997). As to teacher correction, it is a dilemma for teachers when they meet learner errors in CLT. Truscott (1999) advocates total rejection of any type of corrective feedback. Krashen (1985) argues that grammar can only be acquired naturally through exposure to the target language, so that special attention should be given to the meaning, not the form. To bridge the gap, Ellis (1994) suggests the method known as "recast" as a way to reformulate a learner's incorrect utterance while maintaining a focus on meaning. Savignon (1991) reveals that research overwhelmingly supports the integration of form-focused exercises with meaning-focused experience. Grammar is important; and learners seem to focus best on grammar when it relates to their communicative needs and experiences (p.269). Regarding this contradiction, Wu (2008) concludes that CLT should not be conceptualized as a teaching approach that is intended to exclude form but rather one that is intended to include communication. Therefore, any extreme pedagogical practice should be avoided.

As mentioned earlier, non-native teachers offer students a learner model during the learning process. Thus, L1 is used as a useful communication medium when L2 learners have difficulty finding English equivalents. The argument vis-à-vis the use of L1 or L2 has been very heated. Lightbrown (1991) points out that successful learners need as much exposure to the target language as possible and thus L1 should be used sparingly. Swain and Lapkin (2002) show the opposite perspectives, and report that the use of L1 will facilitate learners to achieve linguistic goals. Although there are diverse interpretations and explanations in terms of the efficiency of using L1, it is vital for teachers to take into account the

needs of students and find the most appropriate way to balance the use of L1 and L2.

The interviews with the participants reveal that the role of the teacher is paramount in the language classroom. Savignon (1991) points out the teachers' different feelings about CLT:

Depending upon their own preparation and experience, teachers themselves differ in their reactions to CLT. Some feel understandable frustration at the seeming ambiguity in discussions of communicative ability. Negotiation of meaning is well and good, but this view of language behavior lacks precision and does not provide a universal scale for assessment of individual learners. Ability is viewed, rather, as variable and highly dependent upon context and purpose. Other teachers welcome the opportunity to select and/or develop their own materials, providing learners with a range of communicative tasks. And they are comfortable relying on more global, integrative judgments of learner progress (p.266).

In the EFL context, native teachers in the classroom are regarded as one of the anxiety-provoking factors. Regarding the command of language, native teachers are likely to adopt CLT more smoothly than local English teachers. The number of non-native English speaking teachers, however, is larger than native English speaking teachers. Canagaraiah (1999) points out that 80% of the English teachers in the world are non-native speakers. In the EFL context, native teachers offer language learners a "foreign model" and thus become the preferred choice. On the contrary, non-native teacher provide language learners a "learner model", whose learning experience would encourage learners to learn language more efficiently. In the CLT classroom, both native and non-native English speaking teachers may encounter different problems. Cook (1999) argues that language teaching would benefit by paying attention to the L2 user rather than concentrating primarily on the native speaker. Braine (2005) claims that one group of teachers should not necessarily be superior to the other group. To help learners to learn better, simultaneous team teaching could be one of the choices in the EFL context. The focus is on the cooperation between native and non-native instructors, and its main goal is to assist students to learn the target language more efficiently. It has proved to be effective in international school settings (Pardy, 2004) and has been implemented in TEFL or TESL situations, particularly in Japan (TAJino & Tajino, 2000) and Hong Kong (Lai, 1999).

In addition to teaching strategies, the adaptation of language learning strategies (LLS) to language learners is also necessary and important. LLS are useful for learners because they are tools for active, self-directed involvement, which is essential for developing communicative competence (Oxford, 1990a). It is also crucial for language teachers to use LLS in the classrooms to help L2 learners understand the language learning process to improve their skills. Participants in this study are mature students with working experience; however, many of them still suffer from anxiety in the language classroom. To help them learn better, it is very important to create a more friendly and supportive learning environment. Teachers need to be sensitive to learners' fears and insecurities and help them to overcome those fears. Encouragement and non-threatening instruction are good ways to ease learner anxiety and enhance their motivation. Foreign language anxiety is a distinct and specific state anxiety. Learner self-esteem, language testing, teacher attitudes, peer competiveness, academic levels, the experience of visiting a FL country, gender differences, and work experience are possible sources that contribute to learner FL anxiety. It will be hard for learners to take active roles in class when they have difficulties using the target language. If language learners have fewer problems with language, both in perception and production, they are more likely to take active roles in class. The most important thing that teachers should be concerned about is finding ways to improve their teaching skills and to handle challenges such as professional training, linguistic and sociolinguistic competence, and understanding better the needs of students.

6. Conclusion

The results of this study reveal that both teachers and students hold positive attitudes toward CLT, in spite of reservations. Although there are a lot of difficulties in its implementation, CLT is still feasible teaching approach that can certainly be applied in the EFL context. At the tertiary level, everyone concerned needs to explore strategies for encouraging students to move ahead towards more active roles. Student concerns about active speech roles and teachers' desire for them to move away from passive learning appear to fit well into the learner-centered philosophy. Researchers (Campbell and Zhao, 1993; Eveyik-Aydin, 2003; Hu, 2002; Li, 1998) have warned against total and unbridled adoption of CLT and called attention to the need for considering the socio-cultural milieu of the teaching context where CLT is being implemented. As Hu (2002) contends, "it is important for educational policymakers and teachers to take a cautiously eclectic approach and make well-informed pedagogical choices that are grounded in an understanding of socio-cultural influences" (p. 103). Any teacher who plans to use methodologies which inevitably involve student participation should make sure that the students are familiar with and accept such methodologies.

There are still some arguments about CLT to be considered. For instance, the focus on meaning against form; fluency vs. accuracy; and inclusion vs. avoidance of L1. Although contradictions regarding the feasibility of CLT persist, it is more important to take into account the needs of students. During the learning process, anxiety seems to be an obstacle to English acquisition. The impact of anxiety-provoking causes should be taken into consideration. It is the teachers' duty to create a less threatening atmosphere, to motivate, and to strengthen student confidence. More motivated students tend

to be more successful language learners. More importantly, both teachers and students should be fully aware of the importance of LLS in the CLT classrooms and adopt the most efficient learning/teaching approaches.

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Appendix A

- 2.P air work activities should be avoided as it is difficult for teachers to monitor each student's performance.
- 3. Teacher correction should be avoided when it interrupts the flow of communication via student interaction.
- 4.An orderly teacher centered class is necessary for students to get maximum benefit from teacher input in English.
- 5. Students need to have immediate teacher feedback on the accuracy of the English they produce.
- 6. Pair work develops oral conversational skills in English.
- 7. Group work creates a motivating environment to use English.
- 8. Teachers should allow opportunity for student-student correction in English.

9. The major role of teachers is to transmit knowledge about language to students through explanations rather than to guide them for self-learning.

^{1.}Language classes should be student-centered, not teacher centered.

- 10. Teacher feedback should be mainly focused on the content of the activity not on the form of language.
- 11. It is of great importance that student responses in English be grammatically accurate.
- 12. Teachers should be the initiators of most interactions in English in the class.
- 13. To develop communicative skills, explicit grammar teaching is not necessary.
- 14. Emphasis should be on language use rather than language rules while teaching English in the class.
- 15. Pair work provides a greater amount of student involvement than a teacher-led activity.
- 16. Group work helps those students who are not willing to speak in front of a full class.
- 17. Focus on communicative competence produces linguistically inaccurate speakers of language.
- 18. Teachers should make an analysis of student needs in order to design suitable tasks and activities in English.
- 19. Group work causes a noisy classroom atmosphere which prevents meaningful practice in English.
- 20. .Teacher feedback should be mainly focused on the appropriateness of the student responses rather than the linguistic accuracy of the forms.
- 21. Teachers should not tolerate mistakes in English forms.
- 22 .Meaning focused activities are more effective to develop communicative ability than form-focused activities.
- 23. Students' attention should be drawn to the linguistic system of English through direct teaching of the structures.
- 24. Group work cannot increase the amount of English practice because the students tend to use their native language while working in groups.
- 25. Teacher correction should be provided only when it is required for effective communication.
- 26. Pair work is not an effective means of improving communication skills in English.
- 27. Helping students develop the use of context-appropriate language should be the primary goal of language teaching.
- 28. Students' language performance should be primarily judged by their grammatical correctness.
- 29. To learn how to communicate effectively, a considerable amount of time should be spent on grammatical explanations.
- 30. Since students have little information about the language, they should not be allowed to correct their peers' mistakes.
- 31. Most of the interaction in the class should be from students to students, not from teachers to students.
- 32. A teacher-directed class will motivate students to work productively with English.
- 33. Grammar teaching may be included in a lesson as a means of communication, not as the main goal of teaching.
- 34. Group work increases the quantity of oral/aural language practice.
- 35. Correction should be mainly focused on the mistakes in language structures.
- 36. Pair work cannot create a motivating environment to use English.

Appendix B

- 1. I never feel quite sure of myself when I am speaking English in my class.
- 2. I don't worry about making mistakes in the English class.
- 3. I tremble when I know that I'm going to be called on in the English class.
- 4. It frightens me when I don't understand what the teacher is saying in English.
- 5. It wouldn't bother me at all to take more foreign language classes.
- 6. During my English class, I find myself thinking about things that have nothing to do with the course.
- 7. I keep thinking that the other students are better at English than I am.
- 8. I am usually at ease during English tests in my class.
- 9. I start to panic when I have to speak without preparation in the English class.
- 10. I worry about the consequences of failing my English class.
- 11. I don't understand why some people get so upset over English classes.
- 12. In the English class, I can get so nervous I forget things I know.
- 13. It embarrasses me to volunteer answers in my English class.
- 14. I would not be nervous speaking English with native speakers.
- 15. I get upset when I don't understand what the teacher is correcting.
- 16. Even if I am well prepared for the English class, I feel anxious about it.
- 17. I often feel like not going to my English class.
- 18. I feel confident when I speak English in class.
- 19. I am afraid that my English teacher is ready to correct every mistake I make.
- 20. I can feel my heart pounding when I'm going to be called on in the English class.
- 21. The more I study for an English test, the more confused I get.
- 22. I don't feel pressure to prepare very well for the English class.
- 23. I always feel that the other student speak English better than I do.
- 24. I feel very anxious about speaking English in front of other students.
- 25. The English class moves so quickly I worry about getting left behind.
- 26. I feel more tense and nervous in my English class than in my other classes.
- 27. I get nervous and confused when I am speaking English in class.
- 28. When I'm on my way to the English class, I feel very sure and relaxed.
- 29. I get nervous when I don't understand every word the English teacher says.
- 30. I feel overwhelmed by the number of rules I have to learn to speak English.

- 31. I am afraid that the other students will laugh at me when I speak English.
- 32. I would probably feel comfortable around native speakers of English.
- 33. I get nervous when the English teacher asks questions which I haven't prepared in a advance.

Appendix C

- 1. I usually read English aloud.
- 2. I consciously learn new English vocabulary.
- 3. I usually make a sentence when learning a new word.
- 4. I use an English-English dictionary when I come across a new word.
- 5. I try to think in English.
- 6. I usually skim an article and then read it again carefully.
- 7. I usually use prediction or guessing when I learn English.
- 8. I usually learn from mistakes.
- 9. I usually use synonym or antonym.
- 10. I set learning goals and plans in the process of learning English.
- 11. I usually learn from the teachers.
- 12. I usually read newspaper in English.
- 13. I usually watch TV spoken in English.
- 14. I usually read English magazines for pleasure.
- 15. I usually listen to the radio in English.
- 16. I usually discuss with my classmates in English.
- 17. I make friends with native speakers.
- 18. I usually self-evaluate my learning process.

Table 1. Background of Participants

Characteristic					
Gender	Male (25,38%)	Female (41,62%)			
Age	24-30 (20,30%)	31-40 (23,35%)	41-50 (19,29%)	51-60 (4,6%)	
Employment Status	Soldier (2,3%)	Public servant (14,21%)	Educator (8,12%)	Business (23,35%)	Other (19,29%)
Years of Learning English	1-10 (37,56%)	11-15 (20,30%)	16-20 (9,15%)	More than 20	
Time for studying English outside classroom per week	1-3 hours (8,12%)	4-10 hours (35,53%)	11-15 hours (15,23%)	16-20 hours (8,12%)	More than 20

Table 2. Distribution of the Scores Obtained by the Participants on COLTAS

Participants	180-144 Very favorable attitude	143-109 Favorable attitude with some reservations	108 Uncertain	107-73 Unfavorable attitude with some reservations	72-36 Very unfavorable attitude
Female					
Number of Participants	9(13%)	27(41%)	4(6%)	1(2%)	
Male					
Number of Participants	7(11%)	14(21%)	2(3%)	2(3%)	

Table 3. Participants' attitude toward four domains of CLT

Domain	Item	М	SD	
Teacher/Student Role				
Language classes should be student-centered, not teacher centered.	1	4.21	0.98	
Teachers should make an analysis of student needs in order to design suitable tasks and activities in English.	18	4.09	1.01	
Helping students develop the use of context-appropriate language should be the primary goal of language teaching.	27	3.98	1.03	
Most of the interaction in the class should be from students to students, not from teachers to students.	31	3.76	1.09	
Pair/group Work				
Pair work develops oral conversational skills in English.	6	4.01	1.05	
Group work creates a motivating environment to use English.	7	3.79	1.04	
Teacher feedback should be mainly focused on the content of the activity not on the form of language.	10	3.87	1.06	
Pair work provides a greater amount of student involvement than a teacher-led activity.	15	4.02	0.99	
Group work helps those students who are not willing to speak in front of a full class.	16	3.95	1.01	
Group work increases the quantity of oral/aural language practice.	34	3.96	1.02	
Grammar				
To develop communicative skills, explicit grammar teaching is not necessary.	13	3.78	1.04	
Emphasis should be on language use rather than language rules while teaching English in the class.	14	3.99	1.05	
Meaning focused activities are more effective to develop communicative ability than form-focused activities.	22	3.67	1.02	
Grammar teaching may be included in a lesson as a means of communication, not as the main goal of teaching.	33	3.98	1.12	
Peer/Teacher Correction				
Teacher correction should be avoided when it interrupts the flow of communication via student interaction.	3	3.31	1.02	
Teachers should allow opportunity for student-student correction in English.	8	3.27	1.15	
Teacher feedback should be mainly focused on the appropriateness of the student responses rather than the linguistic accuracy of the forms.	20	3.54	1.09	
Teacher correction should be provided only when it is required for effective communication.	25	3.19	1.17	

Table 4. Distribution of the Scores Obtained by the Participants with FLCAS

Participants	165-133	132-100	99-67	66-34	33
Female					
Number of Participants	7(11%)	23(35%)	4(6%)		
Male					
Number of Participants	4(6%)	25(38%)	3(4%)		

Statements (abbreviated)	Group 1 M	Group 2 M
1: reading aloud	3.12	2.79
2: consciously learning new vocabulary	3.76	3.0
3: making a sentence when learning a new word	3.55	2.98
4: using an English-English dictionary	2.99	2.23
5: trying to think in English	2.99	2.88
6: skimming	3.28	3.14
7: predicting or guessing	3.12	2.77
8: learning from mistakes	3.89	3.90
9: using synonym or antonym	3.13	2.96
10: setting learning goals	3.18	2.69
11: learning from the teacher	4.0	4.16
12: reading newspaper in English	2.67	2.35
13: watching TV in English	4.11	4.09
14: reading English magazines for pleasure	3.85	3.06
15: listening to the radio in English	3.46	3.23
16: discussing with classmates	4.18	3.75
17: making friends with native speakers	2.46	1.59
18: Self-assessment	2.68	1.99

Table 5. Participants' Language Learning Strategy

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A Study on Research Teaching

Limei Yan Department of Mathematics, Dezhou University Dezhou 253023, China E-mail: yanlimei9898@163.com

Abstract

Starting with the significance and the conduction of research teaching, this paper further puts forward and analyzes several patterns of research teaching, discusses the particular role of teachers in these patterns and proposes some strategies as well as suggestions.

Keywords: Research teaching, Pattern, Innovation, Assessment, Problem

In order to improve teaching level, quality and effect, much attention has been paid to the tendency of research teaching being one part of teaching reform in higher education field. However, teachers' dominance mustn't be ignored in our efforts of research teaching reform. Therefore, this paper studies and analyzes the conduction of research teaching and its problems in order to further promote its research, application and perfection.

1. Practical Significance of Research Teaching

Emphasizing the central role of students during the teaching process as well as a combination of teachers' research teaching and students' research learning, research teaching pays much attention to combining academic knowledge and research methods. What's more, teachers' dominance and students' principal status are fully exerted by emphasizing students' practical application of the knowledge and techniques they have learnt and their first-hand experience in the learning process.

1.1 Improving Students' Comprehensive Analysis Ability

Questions involved in research teaching cannot generally be solved by single branch of study but comprehensive application of multi-disciplinary knowledge, hence helping to cultivate students' abilities in interaction and comprehensive analysis and to improve their overall quality. With the traditional teaching pattern changed in which knowledge, instead of ability and overall quality, is over-emphasized, students will learn to find rules and questions through their own research learning and practice, hence grasping basic methods of scientific research and improving their own practical abilities.

1.2 Cultivating Students' Scientific Learning Attitudes and Innovative Learning Ideas

In research teaching, students are expected to have careful exploration, draw conclusions based on facts, respect others' achievements and cultivate innovative quality, hence developing truth-seeking attitudes towards science as well as pioneering spirit.

1.3 Establishing Students' Cooperative Sense

Interaction between teachers and students is relied on in research teaching to teach students how to communicate and share their information, ideas and achievements with each other, hence cultivating their team spirit and improving their comprehensive abilities.

1.4 Cultivating Students' Communication Skills, Self-expression and Innovation Spirit

By creating problem situations, research teaching succeeds in changing the forum into a platform for the interaction between teachers and students in which teachers fully respect students' principle role, establish an equal, loose and harmonious environment to enlighten students and encourage them to raise questions. Through their independent participation in research activities, students gradually develop positive attitudes, such as being ready to ask questions and to explore, having practice and pursuing scientific truth and so on. What's more, their wish for exploration and innovation is also inspired.

2. Understandings of the Conduction of Research Teaching

2.1 Understanding of Teaching and Learning

"Teaching" refers to the process in which students' knowledge is increased, their ability improved and their quality cultivated, while "research" means the process in which old knowledge is utilized to create new knowledge, to develop new ideas and put forward new theories. With the two combined, traditional teaching can be reformed with the opinions, methods and processes of research, hence forming "research teaching", which is characterized by an open teaching

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process, students' principle role in it as well as students' independent exploration in problem solving, knowledge and ability acquisition. Teachers serve students with their teaching which equips students with not only knowledge but ability and quality. Even in the process of knowledge learning, not only conclusions but also the background and the process to draw them need to be learnt. Besides, students are also expected to learn methods to explore the world, to cultivate their innovative sense, to develop their own scientific ideas, to develop truth-seeking attitudes and to establish right values. If we say learning is led by teachers in the traditional teaching, teaching is based on learning in this new pattern. Students should be given more opportunities to participate in teaching as well as learning to experience sense of success during the process of research teaching.

2.2 Understanding of the Subject of Research Teaching

The core idea of research teaching lies in the central role of students to encourage their enthusiasm for learning, to enhance their interest, ability and innovation sense, to develop their potential, enlighten their thinking while conveying knowledge and techniques and therefore to promote the improvement of their knowledge, ability and quality.

2.3 Understanding of the Conversion of Teachers' Concept

In research teaching, the change in teachers' concept is the greatest of all, that is, from emphasizing knowledge to emphasizing students' overall development, from emphasizing teaching result to teaching process, from emphasizing teachers' one-way instruction to the cooperation between both teachers and students. The most important task for teachers isn't to convey knowledge but to help students to cultivate their potential, to encourage their enthusiasm for participation in new knowledge creation and to enhance their independent innovation skills.

2.4 Understanding of the Interaction between Teachers and Students

Research teaching has to involve a large amount of teacher-student interaction to inspire students' enthusiasm. With students being the principle role of the whole teaching and learning process, teachers are expected to share the experience of exploration with students, hence fulfilling their teaching tasks while helping students to acquire knowledge, ability, quality and sense of success. Since teachers may have some mistakes or shortcomings, students will learn from both positive and negative experience. In this sense, the idea of "teaching benefits teachers as well as students" is manifested in research teaching in a better way.

3. Control on Research Teaching

The teaching process involves the interaction between teaching and learning. While strengthening students' principle status, we shouldn't neglect teachers' instructive role, which can be reflected in their grasp over the predictability and gradual steps of class teaching, their ingenious creation of learning circumstances, reasonable allocation of teaching time, coordination of class atmosphere and proper instruction of teaching methods and so on.

3.1 Planning

As the schemer of research teaching, teachers are supposed to select teaching contents which reflect the core idea of this branch. After that, they should design their teaching steps, including how to introduce a topic, what to ponder over, how to inspire students' reflection, in what way to explore, how to draw conclusions and so on. On the whole, all activities should be based on the interaction between teachers and students to reflect students' principal role, to inspire their potential and to exert their innovative abilities.

3.2 Organizing

Here, not only the organization of the whole teaching process but that of certain teaching section should be included. Some inspiring words can be used to organize the teaching process to improve students' thinking, to encourage those inactive students to speak out their opinions and those innovative ones to share their good ideas as well as to eliminate their worry about mistakes, hence helping to produce perfect answers or conclusions through discussion, argument, summery and refinement. In addition, with greater passion for interaction and discussion between teachers and students, a truth-seeking research atmosphere can be created in which most students are good at pondering and brave to express themselves, promoting their research and exploration advancing in the right direction.

3.3 Guiding Students

As a guide, teachers play a significant role in improving students' mode of thinking as well as their trait of thinking. They are expected to create circumstances under which students find, raise and explore questions, to unlock students' potential with their designed words and to encourage students' mutual illumination through their discussion. In addition, they should try to enable students to experience open thinking, divergent thinking, dynamic thinking, overall thinking, difference-seeking thinking, query thinking, critical thinking and creative thinking during research teaching. Actually, it is of particular importance to develop students' habits of breaking the rules and advancing new ideas.

3.4 Training Students

Covering a relatively long period, research teaching calls for students' active coordination. Therefore, spiritual

encouragement in different aspects will exert favorable effects. With proper encouragement of this kind, research teaching will go more smoothly.

3.5 Giving Encouragement

In addition to the above, teachers should also give encouragement in the modes and contents of assessment to make research teaching more popular with both teachers and students. It is very important that teachers should appreciate students' questioning and have discussion with them equally. In addition, some on-the-spot comments on the advantages of research teaching should be made to enable students to recognize and become interested in research teaching, to develop right values, strong thirst for knowledge and truth-seeking attitudes.

3.6 Giving Summary

With many possible questions during research teaching, teachers should be good at pre-setting questions, finding questions, solving questions and summarizing experiences to enable such a teaching pattern to be more impressive and to make greater advance.

4. Main Patterns of Research Teaching

Current research teaching is mainly conducted in the following forms:

4.1 Project Research

This is a practical pattern, in which projects can be given by teachers or designed and conducted by students themselves with some necessary instructions. Emphasizing the cultivation of students' independent exploration and practical operation, this pattern is intended to give students opportunities to explore and find answers, to integrate knowledge and develop innovative abilities independently.

4.2 Cooperative Research

Cooperative research is intended to solve some problems unsolvable for individual students through group cooperation. In this pattern, a teacher is an organizer, a participant and an instructor. Tasks and questions should be challenging enough to inspire students' enthusiasm and passion for group activities. This pattern will help to form a favorable atmosphere in which teachers and students learn from each other and have emotional communication, hence improving students' cooperative spirit and interpersonal communication.

4.3 A Combination of Independent Research and Group work

Based on a topic or a practical problem, some students or an organization conduct research activities together in which individual or united efforts are made to collect materials, to conduct exploratory or design activities, to draw conclusions, form opinions or make achievements, to share elementary achievements with each other, and later to further their study through interaction or draw their research to an end. Such a pattern is suitable for those researches covering a large range because students need some collisions in their thought with others when lacking in an understanding of the nature of a question or failing to form scientific questions.

4.4 Discussion on Questions

This pattern is mainly intended to develop students' sense of finding questions and practical abilities of solving questions in order to raise their comprehensive quality and ability. On one hand, this pattern emphasizes the importance of questions in learning and regarding questions as the motivation, starting point and main stream of the learning process; on the other hand, questions are formed through learning and the learning process should be regarded as a period to find, raise, analyze and solve questions.

5. Some Important Issues on Research Teaching

5.1 Reorienting our Education Idea

Not only the teaching objectives but also the relationship between teachers and students should be reoriented. It has been the main goal for college teaching to cultivate students' scientific spirit, scientific research methods and scientific morality through research teaching. Teachers, the key to our success, need to convert from their traditional role of delivering knowledge to a new one of cultivating students' initiative and innovative abilities, from the educator to the learner and inventor.

5.2 Improving Former Teaching Contents and Methods

Research teaching is a process of knowledge innovation, calling for teachers to introduce the latest achievements into class for students to discuss and raise questions and therefore to form new thoughts, new ideas and theories. Practical teaching sections should be increased by reducing testifying and demonstrating experiments and increasing design and comprehensive ones. The former one-fold teaching pattern should give way to a comprehensive one and the individual teaching pattern should also be replaced by a diversified one. For teachers, this is a reconstruction of their own knowledge and ability as well as a fundamental shift in their teaching method, hence beneficial for cultivating advanced

talents.

5.3 Improving Assessment System

A proper assessment system is expected to fully examine to what degree students have innovative ideas, different opinions, diversified conclusions and coordinated teamwork with more scientific and reasonable evaluation methods. In the assessment on teachers, more emphasis is focused on their organization and instruction in teaching, reasonableness of the number of students they instruct, their participation in class activities, relevance and innovativeness of their project design and so on.

5.4 Exchanging Experiences in Research Teaching

After a term's teaching practice, all the participants should be organized to have a forum, at which every one shares his problems, solutions and suggestions during his research teaching practice. In this way, some good experiences can be spread out, hence promoting research teaching to achieve better and faster development.

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Strategies for School Environmental Management in Nigerian Secondary Schools: A Case of Calabar, Nigeria

Linus Beba Obong (corresponding author) Department of Geography & Regional Planning, University of Calabar, Nigeria E-mail: linusobong@yahoo.com

> Stella-Maris Okey Educational Planning & Administration Cross River University of Technology, Calabar, Nigeria

E. J. Aniah Department of Geography & Regional Planning University of Calabar, Nigeria E-mail: geneaniah@yahoo.com

Lydia A. Okaba Biology Department, Federal College of Education Obudu, Cross River State, Nigeria E-mail: de_lills@yahoo.com

Abstract

This paper on strategies for school environmental management in Nigerian secondary schools was carried out in Calabar, Nigeria. To guide the study three research questions were formulated. This was achieved through administration of structured questionnaires in three randomly sampled schools. Findings show regular grass clearing, sweeping of the school compound and painting, landscaping and planting of flowers, good drainage and refuse disposal are strategies adopted for managing the school environment. While lack of gardeners to keep the school compound clean, erosion, students and teachers not being responsive to environmental issues, difficulties to inculcate in students environmental values due to different home upbringing, lack of funds to procure working tools/implements and waste disposal challenges were some identified challenges in the school environmental management. Three hypotheses were put forward to be tested in the study: 1) There is no significant difference in strategies adopted in the management of school environment 2) Management of school environment has no significant effect on student study/reading habit 3) The challenges of managing school environment have no significant effect on the quality of school environment. Statistical results from tested hypotheses show significant relation and correlation in all. Result for hypothesis one shows that there is significant difference in strategies adopted in the management of school environment. Hypothesis two statistically proved that management of school environment has significant effect on students' study/reading habit; while the last stated hypothesis revealed that the challenges of managing school environment have significant effect on the quality of school environment. For enhanced and better school environment for sound academic exercise, school environmental management team (SEMT), fore-plan for drainage and waste disposal, school location consideration for new schools, employment of gardeners and cleaners, fumigation of schools, terminal orientation programmes, development of curriculum on environmental management, School inspection and competitions and awards were recommended.

Keywords: Strategies, School environmental management, Nigerian secondary schools, Nigeria

Introduction

The current challenge of environmental management is a general one. The quality of environment is crucial in creating a congenial and healthy environment for human welfare and productive life. Man manages his environment by getting rid of all wastes and by-products of different natural and anthropogenic processes introduced into the immediate environment. Environmental management has become one of the greatest challenges facing the world today. Managing the environment for fruitful, healthy and productive living is central to all human activities.

Maintaining a sound and healthy environment has always been a challenge to man (Akintola, 1978). For example, the different inputs from anthropogenic activities include energy generating heat, uncontrolled sound turning into noise, and other land using agencies that causes spoliation of the physical environment. Various human activities that requires planning and coordination demands a comprehensive and deliberate effort to keep the physical environment fit for the total man to function well.

Hence, the management of built environment is determinant to the quality of man at any given time. Where this is undermined, there is bound to be poor physical conditions and the consequence is poor human output. Of particular interest is the school environment. The physical outlook of the school environment is very important in contributing to healthy academic exercise. It forms the fulcrum on which other activities revolve. This is because it creates an atmosphere of the mind for study. The challenge of developing and managing a school environment taking into consideration some parameters is a great one; one of such is the school location.

Where a school is located can determine to a large extent the stability of the student's mind for academic readiness. A school located along air-traffic route, roadside (especially without a fence), in neighbourhood of industrial activities, markets, and so on will constitute a nuisance and interference with the students' learning process. It will generate noise enough to badly affect the study adventure.

As indicated by the National Teachers' Institute (NTI, 2008; Mckay, 1964 in Egim, 2003) school supervision and sanitation. These are capable of affecting the quality of learning environment. This refers to all the strategies adopted by a school system in managing the wastes (noise, water, and other effluents), drainage pattern, and the facilities provided in the school. Equally crucial is the greening of the school environment. Sanitation Connection (2001/2002) maintains that a school management that provides sanitation and planting of flowers, trees and maintaining lawns, well cleared grasses, etc. improves quality of life and study environment.

Aesthetics of a school environment is another aspect of managing a school environment. Regular painting and maintaining the quality of buildings, channeling of sewage, well planned landscape and trimming of flowers, clearing of grasses, proper disposal of refuse, sweeping and removing cub webs among others provides a relaxed atmosphere for the molding of minds.

All these issues above constitute school environmental management strategies that could make a school a place to live and not to leave. In spite of this all-important top burner matter, very little have been done in managing school environments for fruitful academic venture. It becomes necessary to conduct a study on the strategies employed in managing school environment in Nigerian secondary schools.

How a school environment is managed in aesthetics, recreation, waste, drainage pattern, and other physical outlook of the environment has telling effect in the quality of learning environment of children.

This study was therefore designed to investigate the strategies for school environmental management in Nigerian secondary schools; envisioning that the study could provide and enhance the management of school environments in Calabar, Nigeria.

Concept of environment

Environment has been variously conceptualized to include all the natural resources of air, land and water; visible and invisible elements that affect the development of an organism for its lifetime. Environment refers to all the conditions and influences affecting the development of an organism in its lifetime. Man's total environment includes all the living and non-living elements in his surroundings which could be natural or built (man-made), etc. in a complex network of systems (Okaba and Obong, 2006; Edu, 2006). It also refers to all natural resources, joint property of man of which one man's right of use must not adversely affect the right of use of other joint owners (Offiong, 2003; Verla, 2003; Eni, 2005; Obong, 2007b). The current global awareness of the environment and its pivotal role to human endeavours and survival started mounting with the 1972 United Nation's World conference on Human Environment.

As identified by Obong (2007b), three major segments of environment include the natural, built and personal environments. The built and personal environments are what to a large extent determine the conditions of a school environment. The particular concern here is that it is the product of anthropogenic activities.

As posited by Eni (2005), human beings have characteristically lived in two worlds. The first is the natural world of nature consisting of plants, animals, soils, air and water that preceded the existence of man by hundreds of million years of which man is an integral and inescapable part. The second is the world of social institutions and artifacts (built world) that man deliberately creates for himself using science, technology, culture, political organization, and so forth.

As part of the deliberate world created by man is the school environment that constitute the learning atmosphere for the young minds. Neglecting to manage this environment is to undermine the future of any society.

Concept of sustainability and sustainable development

The early research in the area of sustainability is believed to have been championed by Danella and Daniel Meadows in the early 1970s. The Meadow's work involved the use of computer simulations, and predicted that within ten years the

earth would begin to show great strain due to the earth's expanding population and continued development and was titled "Limits to Growth" (Murphy, 1998).

Several other works followed this publication such as the World Conservation Strategy (WCS), in collaboration with United Nations Environment Education Programme (UNEP), the World Wildlife Fund (WWF), the Food and Agriculture Organization of the United Nations (FAO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO). It was prepared by the International Union for the Conservation of Nature and Natural Resources (IUCN) in 1980 (Hall and Lew, 1998). The published document was intended to informing governments about: (a) damaging environmental practices; (b) addressing the problem of overpopulation on a global scale, and (c) formulating a plan to tackle the unsustainable practices that were taking place at that time.

This report was instrumental to the United Nations' Stockholm Conference in 1972 and the Rio Summit in 1992 (Hall and Lew, 1998). In 1987, the United Nations' Commission on the Environment and Development (UNCED), after the World Conference on Human Environment chaired by the Norway's Prime Minister Mrs. Grow Harlem Bruntland came up with a report on the need for sustainable development. The conference defined sustainable development as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs". It came up with five primary principles of sustainability including: (a) holistic planning, (b) preserving ecological processes, (c) protecting human heritage and biodiversity, (d) long-term sustainability of production, and (e) balancing equality between nations. The concept of environmental management is as old as man. It originated with God when He made man. According to the Holy Bible, "Then the LORD God took the man and put him in the Garden of Eden to tend and keep it" Genesis 2:15. The Garden is the environment, while to tend is to manage. Environmental management therefore is the process of keeping the earth in order through controlling, coordinating, planning and ensuring that the surrounding conditions of man are congenial and livable.

Literature review

The physical environment of a school adds a lot of value to the school (Obong, 2007a). Egim (2003) observed in her study on School Environment and Administrator's Role Performance in Cross River State Secondary Schools believes that the physical environment contributes either negatively or positively to the administrator's role performance in the school. The school physical environment includes the buildings, classrooms, furniture, equipment, instructional materials, laboratories, libraries, play grounds, and so on. Others are walls, machinery, decorative objects, play fields, skating rinks, swimming pools, audio-visual equipment (Mckay, 1964 in Egim, 2003). Egim (2003) maintained that in a bid to expand the educational enterprise, educational planners are more interested in issues such as the number of schools, teachers, students' infrastructural facilities like classrooms and school buildings. Little attention is paid to the quality of the environment.

The design and structure of school environment forms the physical appearance of the school which may attract parents and friends of educational institutions in their initial judgments about the quality of what goes on in the school. They have effect on the perception and choice for learning experience desired by parents and students (Mitchell, 2008). Available in the literature on strategies for school environmental management is rather scanty. A web work provides that school environment management plan (SEMP, 2008) should include the schools major environmental objectives; sub-committee recommendations for achieving these objectives through curriculum, school resources, and school grounds; audit results and plans specific for major objectives such as paper, resource use, energy, water; and review actions.

Learning environment has seen been emphasized as an essential requirement for smooth teaching and learning process to take place (National Teachers' Institute, NTI, 2008). This is because students' study habits are to a large extent tied to it. According to Sharon Mitchell, director of Mental Health, Wellness and Safety Promotion (2008), "the environment in which you study can have a big effect on how efficient your study time is". He identified noise, interruptions, lighting, temperature, neatness, comfort and equipment to have potential effect on study habits. This is supported by Sanitation Connection (2005) which posits that as schools provide an important learning environment, the promotion of personal hygiene and environmental sanitation within schools is essential. In addition schools provide ideal environment in which to help children to adopt good habits that will serve for the rest of their lives.

However, managing school environment has posed great challenges over the years to the government, principals and administrators. The challenges range from location, beautification, waste materials, landscaping, sanitation, greening, and so forth. These issues have occupied some studies by researchers such as Sanitation Connection (2002) and Egim (2003); Obong (2007a). It is common to see school environments poorly maintained. They are often strewn with litters of papers, dusty classrooms, poor ventilation, and landscaping for sit-outs during break periods. Such environments as agreed by Ikpaya (1987), deprives rather than stimulating learning and intellectual development. Little attention seems to be given to the quality of learning environment, perhaps because educational planners and administrators have not been adequately informed on the environment's role in enhancing learning and intellectual development. Interruptions

from aircrafts, poor acoustics and spurious sounds have been identified as distractive to the learning process (Mackay, 1964 in Egim, 2003).

Further examined in the literature include library conditions for reading and writing which are often unwelcoming; toilets and urinary systems staring school management with irritating and mind-blighting stench; insect bites and so on (Banuri, et al,1994; Egim, 2003; Obong, 2007a).

Statement of research problem

The deplorable conditions of Nigerian school environments have become a serious worry in recent times. Children are often said to be future leaders. The place to lay a solid foundation, build and equip their lives to be better future leaders is the school environment. It is however, a concern that the school environments in which these young minds are trained have not been adequately managed. Even literature is very scanty or not there at all on this critical issue of school environmental management strategies.

Location of schools has not been a concern to the authorities running them. For instance, it is common to find schools located by commercial and other activities that generate noise such as automobiles, neighbourhood human discussions, discotheques, etc. to the extent that distract the concentration of learners.

Management of waste materials/substances is another problem. Solid waste materials like papers, cellophanes, pack from wrappings, tins, wood, etc littering the environment and class rooms. Where attempts are made to sweep, heaps of refuse are uncontrollably dumped haphazardly and jumbled up together unsorted with both degradable and non-degradable materials which mixes up and causing mind-blighting stench; harboring mosquitoes and pests such as rats, cockroaches, and eyesores.

The buildings on the other hand are another source of worry. Most school environments are not regularly painted. They are dilapidated and often in shambles which make schools dull and unattractive; this tantamount to creating a very hostile study environment not congenial to our children who must take their place as leaders of tomorrow with their counterparts in the developed world.

Aesthetics of most Nigerian schools are almost zero. Beautification of schools in creating lawns landscaping and planting of flowers with regular trimming; planting of shrubs for shade; clearing of grasses, etc are not thought of or of little concern.

The channeling of surface water through drains is another problem. During rains, it is common to see class rooms leaking; school environments flooded with run-off and making the children very uncomfortable. These are what this study fully explored in the school environment of Calabar, Nigeria.

Research questions

The study was guided by the following research questions:

- 1. What strategies are there in managing the school environment?
- 2. What relationship exists between school environment management and students' study habits?
- 3. What problems are there in the school environment?
- 4. Does the managing of school environment have an effect on the quality of school environment?

Research hypotheses

Tested in the study were the following hypotheses:

- 1. There is no significant difference in strategies adopted in the management of school environment
- 2. Management of school environment has no significant effect on student study/reading habit

3. The challenges of managing school environment have no significant effect on the quality of school environment. **Significance of the study**

Planning is future oriented and embraces a comprehensive consideration of different aspects of a project, programme or scheme. This is normally done at the drawing board as a pre ante/prerequisite to the desired programme/project. At this level, anything that is not considered and included in the plan (master plan) at the end of the day may become difficult to integrate.

Over the years, however, the Nigerian secondary school environment have suffered neglect in consideration of issues of planning secondary schools. This is obvious in the way drainage patterns are designed, waste disposal systems/practices, sanitary location and general outlook of Nigeria secondary schools.

This study will be relevant in providing some strategies for planners, administrators, policy and decision makers with respect to education in creating a more healthy and productive learning environment.

It will add to the body of literature on school environmental management strategies.

The work will equally awaken and create awareness on both the teachers and the students on the need for teaching and learning how to manage the environment.

Methods

This study adopts the survey and inferential method in investigating strategies for school environmental management in Nigerian secondary schools. The reason is because it uses representative sample from which findings were made with reference for the whole population. Three secondary schools were randomly sampled (West African Peoples' Institute (WAPI), Calabar; Holy Child Secondary School, Marian Hill Calabar; and Government Science School, Akim, Calabar) for on-the-spot assessment/observation and questionnaire administration.

A total of 100 senior secondary students - senior secondary one, two and three were randomly administered with copies of structured questionnaire; while a total of 30 questionnaires were administered to the teachers which were all properly filled and returned. Out of the 100 questionnaire administered to students, 2 were poorly filled hence discarded. Those properly filled and returned were what constitute the primary data for analysis. Respondents for this study made up of males and females. The simple random sampling technique was used to select 33 students each from the two selected schools and 34 for the other school. Descriptive statistics was used in describing the data gathered from the field at 0.05 level of significance. Data was presented in tables, charts, graphs and simple percentages. This was to make findings clearer and more understandable.

Data presentation and Results

Table 1 shows the various ways by which school environment is managed. A total responses of 38.8 per cent (a) said that the school environment is managed through regular grass clearing, sweeping of the school compound and painting, 23 respondents representing 23.5 (d) indicated others, 21.4 per cent. Others as indicated include lessons, orientation and debates. (c) have landscaping and planting of flowers, while 16.3 per cent (b) are of the view that good drainage and refuse disposal is the strategy in school environmental management.

As revealed in Table 2, figure 1 the management of school environment do not have any effect at all on the reading/study habit of about 20.4 per cent of respondents (c), 8.2 per cent says it has effect on their reading/study habit (a), 17 responses representing 17.3 per cent of respondents find managing school environment affecting their concentration in class during lessons (b), while 54.1 per cent represent others.

However, a total of 40.0 per cent of teachers from table 3 shows that students, school Gardeners and Cleaners are involved in school environmental management. 16.7 per cent of the respondents are of the view that students and gardeners alone are involved, 10.0 per cent shows that only school gardeners and cleaner play the role, while 20.0 per cent have a different opinion specifying that teachers, students, parent teachers, school gardeners and cleaners all play roles in managing the school environment.

As shown in Table 3, the challenges of managing school environment have serious effect on the quality on the school environment with 6.6 (a) per cent responses, while 46.7 per cent (b) are of the opinion that they do not have any serious effect on the school environment, 20 (c) per cent rather feels that the challenges have no effect at all on the quality of the school environment, and 26.7 (d) per cent indicated others.

As revealed in table 4 the prominent problem in the school environment to the students is noise from moving vehicles disturbing during lessons. This item has total responses of 26 persons making up 26.5 per cent. It is followed by sanitation problems/safe water supply with 21.4 per cent, littering with papers, wrappings, dust and uncollected refuse with 14.3 per cent and erosion/flooding with 13.3 per cent. Waste disposal had 11 responses with a percentage of 11.2, snake bites, scorpion stings, and other insect bits had a response of 6.1 and others 7.1 per cent (Figure 2).

Test of hypotheses

Hypothesis 1

H_o: There is no significant difference in strategies adopted in the management of school environment

H1: There is significant difference in strategies adopted in the management of school environment

In testing this hypothesis Table 1 was used.

Degree of freedom $(df) = (2-1)(4-1)$		= 3
Table value of X^2 at 0.05 significant leve	1	= 7.815
X ² calculated	= 20.1	

Decision: From the statistical result in observation Table 5, the calculated X^2 value of 20.1 was greater than the critical X^2 value of 7.815 at 0.05 level of significance with 3 degrees of freedom. By this result, the null hypothesis (H_o) is

rejected and the alternate (H_1) which states that "There is significant difference in strategies adopted in the management of school environment", accepted.

Hypothesis 2

H_o: Management of school environment has no significant effect on students' study/reading habit.

H1: Management of school environment has significant effect on students' study/reading habit.

Tables 1 (X) and 2 (Y) were used to test the hypothesis.

Degree of freedo	m =	= 2	
Table value of t	at 0.05 significant level	= 4.303	3
r calculated	=	= 2401	

Decision: From the statistical result, the calculated t value of 4021 is greater than the tabulated/critical t value of 4.303 at 0.05 level of significance with 2 degrees of freedom. By this result, the null hypothesis (H_o) is rejected and the alternate (H_1) which states that "Management of school environment has significant effect on students' study/reading habit" accepted.

Hypothesis 3

H_o: The challenges of managing school environment have no significant effect on the quality of school environment.

 H_1 : The challenges of managing school environment have significant effect on the quality of school environment. Table 4 was used to test this hypothesis.

Degree of freedom $(df) = (2-1)(5-1)$		= 4
Table value of X^2 at 0.05 significant leve	el	= 9.488
X ² calculated	= 9.93	

Decision: From the statistical result in observation Table 7, the calculated X^2 value of 9.93 was greater than the tabulated/critical X^2 value of 9.488 at 0.05 level of significance with 4 degrees of freedom. By this result, the null hypothesis (H_o) is rejected and the alternate (H₁) which states that "The challenges of managing school environment have significant effect on the quality of school environment", accepted.

Discussion

Generally, findings reveal regular grass clearing, sweeping of school compound and painting as major management strategies of school environment. Others include landscaping and planting of flowers, and good drainage and refuse disposal. Management of school environment was identified to have effect on the reading/study habit of some students, while to some it has no effect as tabulated in Table 2. It is obvious that it is not just a notion that when management of school environment is glossed over or neglected, it will eventually have adverse effect on the quality of school environment. It agrees with the findings of Ikpaya (1987) that such challenges deprive rather than stimulating learning and intellectual development. Concerted efforts must be put in place to check such challenges like noise from moving vehicles disturbing during lessons, sanitation problems/safe water supply, littering with papers, wrappings, dust and uncollected refuse, snake bites, scorpion stings, and other insect bits.

Answering the research question, "What problems are there in the school environment?", Table 4 and as depicted in Figure 2 revealed noise from moving vehicles disturbing during lessons. This item has total responses of 26 persons making up 26.5 per cent. It is followed by sanitation problems/safe water supply with 21.4 per cent, littering with papers, wrappings, dust and uncollected refuse with 14.3 per cent and erosion/flooding with 13.3 per cent. Waste disposal had 11 responses with a percentage of 11.2. Another problem noted in the school environment is snake bites, scorpion stings, and other insect bits with a total response of 6.1. Earlier studies such as Egim (2003) have shown that ensuring a sound school environment enhances the performance of even the administrator's role, let alone the students. These problems are capable of crippling the performance of all academic activities in general, hence, the need to address them.

Three hypotheses were stated to be tested and results shows significant relation and correlation in all (see Tables 5, 6, and 7). Statistical result for hypothesis one shows that calculated chi-square (X^2) value of 20.1 was greater than the critical chi-square (X^2) value of 7.815 at 0.05 level of significance with 3 degrees of freedom. The implication of this is that there is significant difference in strategies adopted in the management of school environment.

Whereas some schools adopt regular grass clearing, sweeping of school compound and painting, others use landscaping and planting of flowers, drainage and refuse disposal as well as teaching students to manage their environment.

Hypothesis two statistically proved that management of school environment has significant effect on students' study/reading habit. With 2 degrees of freedom at 0.05 level of significance, calculated t-value of 4021 was greater than

the tabulated/critical t-value of 4.303. It therefore becomes important that management of school environment be a concern as it will enhance many students' study with consequence of performance.

Every stakeholder of education should contribute their quota in providing a comfortable study atmosphere of the students in Nigeria secondary schools. The last stated hypothesis revealed that the challenges of managing school environment have significant effect on the quality of school environment. It is obvious that it is not just a notion that when management of school environment is glossed over or neglected, it will eventually have adverse effect on the quality of school environment.

This was observed by Banuri et al (1994) that toilets and urinary are not given adequate attention in keeping with the health of students in the bid to develop their mental faculties. It agrees with the findings of Ikpaya (1987) that such challenges deprive rather than stimulating learning and intellectual development. Concerted efforts must be put in place to check such challenges like noise from moving vehicles disturbing during lessons, sanitation problems/safe water supply, littering with papers, wrappings, dust and uncollected refuse, snake bites, scorpion stings, and other insect bits had a response, and so on.

Conclusion and recommendations

From the findings of this study, the following conclusions were drawn: since a good and clean school environment enhances effective teaching and learning as well as promotes healthy living in the school, the need for proper management of the school environment cannot be over-emphasized. There is need for every available strategies and persons to be used in keeping the school environment clean and beautiful.

In the light of the above the following recommendations are put forward for better management of the school environment:

1. School environmental management team (SEMT): School management should constitute a team with a duty of managing school environment. Members of this team should include the Principal or his/her vice, representatives from the teachers, a student representation, representatives from the parent-teacher association (PTA), and the cleaners/gardeners. This team will keep surveillance while ensuring that school environmental problems are properly managed.

2. Fore-plan for drainage and waste disposal: Drainage considerations and how refuse, trash or waste materials will be evacuated from school environment. This can be effective and efficient when sitting a school is contemplated. It should be part of the plan right from start.

3. School location consideration for new schools: Location of schools should be given prime place. Places or location away from noisy neighbourhoods is more advisable. Disturbance from automobile noise and other unhealthy distractions affect students' concentration in studies.

4. Fumigation of schools: Use of pesticides and insecticides in treating offices and school environment will remove insect bites and infestation from insects and pests from the environment. When done it will provide for a safe study milieu.

5. **Employment of gardeners and cleaners:** Some schools do not have gardeners and cleaners. Students alone cannot effectively keep the school environment tidy. Government should employ these staff for the tidying of the school compounds.

6. **Terminal orientation programmes:** Schools should introduce orientation programmes at the beginning of every term. This will reorient the students' mindset for managing the study environment.

7. **Development of curriculum on environmental management:** A curriculum should be developed on school environmental management for Nigeria secondary schools and should be made compulsory.

8. **School inspection:** Inspection of various aspects of school environment should be made part of the seasonal school inspection and supervision. In both private and public schools.

9. **Competitions and awards:** Introduction of competitions and awards to best schools with best environmental practices in school environmental management should be encouraged. These will give a better school environment for a more fruitful academic endeavour; while teachers, gardeners and students should be encouraged to contribute their quotas to the management of school environment.

10. **Development of uniform strategies for the management of school environment:** The government should collaborate with schools and proprietors of private schools to develop uniform strategies in managing school environment.

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Strategies	Number of Respondents	Percentage (%)
a	38	38.8
b	16	16.3
с	21	21.4
d	23	23.5

Table 1. Strategies for management of school environment

Source: Fieldwork, 2009.

a - regular grass clearing, sweeping of the school compound and painting

b – good drainage and refuse disposal

c – landscaping and planting of flowers

d-others

Table 2. Effect of school environmental management

Strategies	Number of Respondents
a	8
b	17
с	20
d	53

Source: Fieldwork, 2009.

a - it has effect on their reading/study habit

b - find managing school environment affecting their concentration in class during lessons

c - management of school environment do not have any effect at all on the reading/study habit

d-others

Table 3. Effect of the challenges of managing school environment

Challenges	Number of Respondents
a	2
b	14
с	6
d	8

Source: Fieldwork, 2009

Table 4. Problems in school environment

Problem	Number of respondents (%)	Percentage (%)
Waste disposal	11	11.2
Safe water supply	21	21.4
Moving vehicles	26	26.5
Erosion and flooding	13	13.3
Insect bites, stings, etc	6	6.1
Dust and uncollected refuse	14	14.3
Others	7	7.1

Table 5. summary of observation Table 1

X ² Calculated	X ² Tabulated	Degree of freedom (df)	Confidence level
20.1	7.815	3	0.05

Table 6. summary of observation Table for hypothesis 2

r	T-calculated	T-tabulated	Degree freedom (df	of)	Confidence level
2401	0	4.303	2		0.05

Table 7. summary of observation Table for hypothesis 4

X ² Calculated	X ² Tabulated	Degree of freedom (df)	Confidence level
9.93	9.488	4	0.05



Figure 1. Showing effect of school environmental management



Figure 2. Prominent environmental problems in schools



The Inspiration Given by the Successful Practice of Development of Higher Vocational Education in the Developed Countries

Gaoling Wu

Huazhong University of Science and Technology, Academy of Educational Sciences, China Wuhan 430074 E-mail: xhw@zjnu.cn

Abstract

Higher vocational education is the product of economic development, scientific and technological progress. If the country does not have a well-developed vocational education, it is impossible to make a good advanced science and technology into productive forces, it is also impossible to achieve economy development in a high speed. In turn, powers the global economy, there must be a successful higher vocational education as a support .Study on the successful experience of the development of higher vocational education in the United States, Japan, Germany, Australia and other developed countries can give us useful lessons.

Keywords: Developed Countries, Higher Vocational Education, Inspiration

1. Introduction

From the end of the last century to the beginning of this century, the United States, Japan, and Germany have been ranked the world's top three economic powers. Especially the United States is not only a major economic power, but also science and technology, education, etc. superpower. Just a few decades, Japan and Germany, defeated fellow in World War II, have become the forefront of the world's economic power. In recent years, Australia has also made the world afresh with heritage of pride in the field of higher vocational education. Stones from other hills may serve to polish jade. What are features of higher vocational education in these Western developed countries? What are the success stories? What are the implications for us? In Western developed countries, higher vocational education development is of great significance to China's higher vocational education.

Higher vocational education is the product of economic development, scientific and technological progress. A country has only developed general education but not well-developed vocational education, it is impossible to make advanced science and technology well into productive forces, it is also impossible to make the fast economy development. In turn, powers the global economy, there must be a successful higher vocational education as a support.

Below is a brief introduction of advanced Western economic powers higher vocational education sessions.

1.1Higher Vocational Education in the United States

Vocational and technical education system in the United States, was founded in the beginning of the last century, formed a nationwide general vocational and technical education system in the 60's. One of them was recognized as the most successful is the community colleges (Community college), it aims at serving the community, sets university education, vocational education and adult education together; Community colleges can be said to be a major undertaking in American higher education.And in the eyes of the world, community college is considered as the unique contribution made by United States in the field of higher education.

The creation of U.S. community colleges can be traced back to the activities of the Junior College (Junior college movement) in the late 19th century and early 20th century. University of Chicago president ($W \cdot R \cdot$ Harper) established the first two-year junior college in 1892. Community college educational goals primarily for transporting high school students into undergraduate institutions did not form its own characteristics in the initial stage. The need for higher education became more urgent with America's economic output surge after World War II. Especially the millions of veterans facing pre-employment training, for that Congress passed the "Veterans Employment Law", the bill funding 2 million veterans to college. With the social and economic development, community colleges transformed its functions rapidly, shifting from transferring education to vocational and technical personal training which is much-needed by regional economic development.

The 20th century, 80 years, as the "third" industrial revolution, the U.S. economy is in a turning point. After President Reagan took office, he proposed "economic recovery plan." It was the need to adapt to the new technological revolution and maintain U.S. economic supremacy; the U.S. introduced the "Vocational Training Cooperation Act" in 1982.

Most of the public community college offers three kinds of services. First, Careers Education. For the purpose of

continuing their studies in university after graduating, this part of students accounted for about 30%. Second, Occupations (subsistence) Education. Students for the purpose of obtaining a credentials and employment through vocational training, accounting for about 50%. Third, the Community Service. Including adult continuing education and business training and retraining programs, students for the purpose of updating their knowledge and enriching rising, accounting for about 20%. NOW United States has 1200 Community Colleges, more than 1000 million students studying in each year. Community college students accounted for 44% of the total number of American college students, freshman accounting for 50% of the total number of American university students.

1.2 Higher Vocational Education in Japan

There are many higher vocational education institutions in Japan. From the perspective of industry and occupation, higher specialized schools, including vocational ability development's university which belongs to Ministry of Labor, mainly meet need of the secondary sector services, recruiting male in large measure. While the Junior College, mainly meet need of the tertiary-industry, recruiting female in large measure. Before World War II, the form of vocational education is "Industrial Education" in Japan. After the Second World War, the form of vocational education is mainly as "industrial education." Taking the U.S. education system as a model, Japan formed "6334" system in the postwar. Based on the concept of democratization of education, equal opportunities in education, it carried out some reform of the University of Unitary higher education. It did not set up specifically schools only have the university in the field of higher education. As the needs of social development, the Junior College was approved to be established in 1950 (one year later than the new system of the University). In 1952, The Japan Business Federation which is on behalf of Japanese business managers (Referred to as Japan's Nikkei Alliance) put forward that "the new requirements of further discussion on the education system," and vehemently criticized the new university system. Nikkei Union further proposed "On the current educational reform requirements", "Make the University have their own focus and characteristics in academic research, vocational special education, teacher training etc. Abolition of a national uniform ", shorten part of the new system the University's fixed number of years, or by integrating some short-term universities and vocational high schools, establishing five-year junior college career."

The first batch of 12 the National College of Technology were established in 1962. Short-term university system achieved the permanency in 1964, Japan College of Technology had reached 54 in 1965, it basically has remained stable at around 64 since1970. Specialist Schools' institution was introduced in 1975, "Specialist Schools Act," was born in 1976, the benchmark for setting Specialist Schools was published. Then there were 893 different types of schools converted or upgraded to Specialized Schools. The number of Specialist Schools soared to 1941 in the following year, the number of Japan Specialist Schools had reached 3441 by 2006, 213,000 high school graduates were enrolled, the number of students up to 75 million. Its scale was far beyond Junior College and National College of Technology.

1.3 Higher Vocational Education in Germany

Germany has embarked vocational training for a long history, as early as the 13th century, there were training in the form of "masters train an apprentice". After industrialization replacing the craft and the guild system in 19th century, then "Industrial Code" has made explicit stipulations on vocational education. The implementation of higher vocational education institutions were mainly by Fachhoch schule, and Berufs a kademie in Germany. German states reached agreement on the establishment of Specialist University in 1968, the federal government passed the "Vocational Education Law" in August, 1969; Under the agreement, from 1969 to 1971, the original Federal French engineer school (three years), college and Senior College of Industrial Design, social welfare class school, High-Level Economic College were rebuild into Specialist university to meet higher demands of Professional Talent made by the scientific, technological progress. Vocational College is a higher vocational education institutions which is Germany typical "dual system" model, is as another type of higher education in addition to universities, specialized non-university.

1.4 Higher Vocational Education in Australia

The development of vocational education in Australia can be divided into three stages after World War II. The first phase is of the start-up from 20th century 50s to 70s, the second phase is of adjustment and reform from the 20th century, 70 years to 90 years, the third is the formative stages of system since the 20th century 90s. Australia's vocational and technical education and training well received by the world's attention in recent years; in particular the TAFE system of vocational education which was created at the age of 70. TAFE is the abbreviated as "Technical and Further Education", TAFE is an important pillar of Australia's vocational education system. It is a high-quality education and training system which is under the framework of a nation, as an industry driving force and customer-centric, limberly running schools, with an effective interface between secondary schools and universities.

The above-mentioned countries have a set of vocational education system (model) suited to their national conditions. China's development paths of Higher Vocational Education only rely on our own to explore. But "stones from other hills may serve to polish jade", higher vocational and technical education system in advanced countries, was developed

with the process of industrialization. Their success is worth of learning and emulating.

2. Carry out Open Learning and effectively improve vocational education's function which service the regional economy and society

America's Community College has been able to be eternity for more than a century, and the fundamental reason is that she was to integrate itself into the community providing a full range of education and training services for the community's residents, businesses and employees. Yet many local governments in our country take higher vocational colleges as a "financial" burden, keen on GDP and industry's promotion, put inadequate attention on the skilled expertise. As a vocational institution, is not out of the traditional "ivory tower", habitually engaged in a quasi-elite teaching. The school policy "for the purpose of service" only remains in the slogans, the purpose of service for area economic and social development is overlooked frequently. What is more, this purpose is left side remotely. They know little of Local government's economic and social development, and do not have any reaction to the regional industrial structure adjustment; they even know nothing about Key pillar industries and enterprises in the region. Some of Vocational-Technical leadership aren't aware of taking the initiative to serve on regional economic and social development, while others who have this consciousness, not willing to do or do not know how to do. The resulting situation is this: On the one hand, the economic and social development needs of a large number of highly skilled personnel. On the other hand, a large number of graduates from higher vocational institutions have difficulty in employment every year.

From the government's view, the number of China's vocational schools has reached 1200 currently, achieving the goal of each prefecture-level cities at least have one Vocational Colleges basically, but this is only the first step. Local government should bring Vocational Colleges into the overall planning of local economic development; making Vocational Colleges act as the base of training and producing regional economic high-skilled personnel and reserve labor force. The vocational college must make the most of the advantage in their human resources, science and technology information resources, and other areas, take the initiative to serve the local regional economy and social development, provide information consultation for the Government and technology services for enterprises, and offer the best possible educational and vocational training services to the region. Deeply into factories, workshops and field, turndown, provide services for the front-line workers and farmers. Therefore, Vocational Colleges should keep in mind the school policy "for the purpose of service ", ascertain their own service targets, make the vocational colleges socially oriented. In particular, be a center of regional economic and social, open, multi-vocational education and training, providing a full range of services for the region's students, businesses, employees.

3. Meet the dual needs of the industry and further education, conscientiously do a good job of employment and recruitment markets

Japan, as the world's second largest economic aggregate among the developed countries, is known as one of the most successful countries in vocational education market. The key lies in its better suited to the dual needs of industry and further education, and its implementation of the Japanese Vocational Education marketization and diversification. In the whole higher education, Japan takes a suppressive policy to blind expansion of higher academic, while expands and gives guide policy to vocational education. The development of Junior College and Specialist Schools, which are greatly needed, is determined by the market, for the development of industries, especially the manufacturing which is the post-war Japan's base industry, the Government set up National College of Technology and Vocational Ability Development University. Take Specialized Training College for example, Japan jointly set up 893 in 1976, covering almost every job in society. and more than 93% of these schools are private, the government made two major events, first, checking the condition of setting schools and approval the standard ,second, set the scale and standard quota of staff in accordance with conditions.

4. Intensify education and teaching reform and innovation, and carry out the combining work and study personnel training mode

On earth, how to conduct China's Higher Vocational Education Reform Innovation? Practice has proved that "compression of the undergraduate" is unworkable. Two issues involved here: First, what to teach, and second, how to teach. Australia's TAFE system gives us a useful inspiration. I think that the core of China's higher vocational education building and reform is to exploit and develop the "training package" in line with China's national conditions and industry, enterprise features, abandoning the traditional "syllogism" teaching mode as soon as possible. "training package" should be formulated by government rather than school taking the lead. According to industry standards and professional positions (group) requirements, organizing labor departments, industries, enterprises, including schools, and other relevant departments to develop the "training package." so as to solve the problem of what to teach.

With regard to "how to teach", the success of German "dual system" is that the students learn and practice variety of professional job-related skill in a real enterprise environment. In China, except for few in our industry, enterprise-run vocational schools have this condition, it is very difficult to do this to the majority of schools. However, we must

actively promote and implement the learning pattern which combines labor and social practice, emphasis on consistency of students' campus learning and practical work, take " the combining work and study " as higher vocational basic personnel training mode. Extensively carrying out a variety of teaching mode like working and learning alternation task-driven, project-oriented, Ding Gang internships and so on, melting of "teaching, learning, doing" was one. Trying to make students to master the technology and skills "physically", adopting a variety of effective measures to enhance the students hands-on ability and practical operation abilities.

5. Establish the concept of lifelong education, and build a modern vocational education system for everyone

America's Community College are flourishing long time. One of the key reasons is its introduction of lifelong education for all. Less than 4% of high school graduates and vocational graduates, can be further studies, yet the majority can not receive continue studies in our country. The state has identified that Vocational Education is a type of higher education currently, but it is only specialist level, with the economic development and technological advances, it may offer undergraduate or graduate level of higher vocational education. At the same time vocational education and general education should communicate and coordinate with each other. On the other hand, now vocational colleges are almost engaged in full-time academic education, it should widely carry out variety of training in the future. Providing a full range of education and training services for the transfer of migrant workers, laid-off workers, reorientation and re-employment training.

6. System design for the structure of vocational education

China's higher vocational education is the result of economic development of a certain stage, objectively socio-economic diversity requires the diversification of types of vocational schools. The types and levels of vocational dispute seem to have a clear answer after the introduction of high-paper No. 16 since 2006. In fact, the country has not a clear-cut policies and measures on the entire system design for the structure of higher vocational education system. As we all know, the existing system of vocational education system is based on "level" to design, vocational colleges only have one level- vocational school. New students are the last batch of college entrance examination in terms of admission. These are reasons for that vocational colleges' attraction is not strong, and barriers which constrain the further development of vocational colleges. The file of education department has confirmed that higher vocational education. There is no ranking point. Higher vocational education may do undergraduate or graduate education in needs of economic and social development.

All in all, China's vocational education has made a historic breakthrough development with 30 years of reform and opening up. China's higher vocational education reform is at a critical period at present. Finding out the characteristics of vocational education in developed countries, drawing lessons from their successful experience, and extracting the lessons of others, can help new higher vocational education effectively avoid the detours, give great positive significance to the sustainable ,healthy and scientific development of China's higher vocational education.

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