Exploring College Students' Cultural View from a Knowledge Creation Perspective

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Abstract

The purpose of this study is to investigate college students' cultural views. To this end, an exploratory study was implemented, and data mainly came from students' essay writing (via individual reflective activities) and focused group discussion (via collective reflective activities). The participants were 176 college students taking a culture-related course. Content analysis was employed to analyze data, and a coding scheme highlighting three general cultural views (i.e. transmission, exchange, and innovation) was developed. Findings indicate that college students typically hold a more conservative, transmission-oriented view that sees culture mainly as a legacy left by previous generations. They did not also see culture as something that should be further improved or innovated (an innovation-oriented view). In addition, students' discussion also showed that they had a superficial understanding of why culture is important for the overall progress of a society. Some implications for curricular and instructional designs for promoting cultural awareness and multiculturism were discussed.

Keywords: cultural awareness, cultural views, cultural innovation, college students

1. Introduction

1.1 Introduce the Problem

The importance of enhancing multicultural awareness and cultural creativity in our society has been increasingly recognized (Baker, 2011; Byram, 2012; Elliot & Nakata, 2013; Malewski, Sharma, & Phillion, 2012; Wham, Barnhart, & Cook, 1996). Culture is a way of living shared by members of a population (Harvey & Stensaker, 2008; Kroeber & Kluckhohn, 1952, 1963; Williams, 2011), and is in great part shaped and created through constant interaction between human activities and the environment they live in (e.g. Eskimo culture is to an extraordinary extent shaped by an extremely cold physical environment). Having a deeper understanding of how culture is dynamically formed and developed from a creational standpoint is thus very important as this can improve multicultural awareness or understanding between different cultures.

Helping people improve their cultural awareness and cross-cultural understanding has also been recognized as an important survival skill in knowledge-based societies (Drucker, 1992, 1998; MOE, 2001, 2010; Trilling & Hood, 1999; UNESCO, 2005). As our society is entering into a knowledge age, the creation of new knowledge, such as knowledge about different cultures, has become even more critical for addressing many pressing social and cultural issues between countries (UNESCO, 2005). All over the world, many countries have been actively promoting cultural innovation and knowledge creation in different industries, particularly cultural industry and creative industry. These countries have also committed to enhancing the quality of education for the purpose of developing the more competent and competitive culture and knowledge workers needed in the coming knowledge-based society.

To this end, higher education plays a critical role while serving as a major source for cultivating effective culture and knowledge workers. Yet, university students in general are being criticized for their lack of cross-cultural understanding, international perspectives, and creative-thinking capacity (MOE, 2010). To address this concern, Taiwan's Ministry of Education (MOE) has reformed its curricula, aiming to enhance students' cultural creativity, with the long-term goal of transforming the Republic of China (R.O.C.) (i.e. the official title for Taiwan) into a "Republic of Creativity (R.O.C.)" (MOE, 2001, 2010). However, the extent to which Taiwanese

college students are aware of the importance of cultural creativity for overall social advancement remains unclear.

The main purpose of this exploratory study is to examine college students' cultural awareness and views, and the questions focused on what college students' cultural view is, whether they understand the importance of cultural innovation and possess multicultural awareness. The significance of the present study lies in its provision of some basic information regarding college students' views of culture as a reference for developing more effective instruction and curricula pertaining to cultural creativity and awareness.

1.2 Literature Review

Culture is a complex psychological construct to be precisely defined (Benedict, 2005) as it denotes different things in different disciplines (Kroeber & Kluckhohn, 1952, 1963). This may be due to challenges in specifying the diversity of the enormous cultural content, especially from a multicultural perspective. A conventional view of culture has treated it as a combination of stable, static artifacts and concepts in relation to many accumulated and observable social mores. An alternative cultural view, on the other hand, sees culture as dynamic changes in and development of all material and conceptual artifacts combined within a given social context. While members in a cultural group typically learn a great range of behaviors and values, the meaning of these behaviors/values is also continuously being constructed and reconstructed through interactions and communications (Paige, Jorstad, Siaya, Klein, & Colby, 2003). In particular, the dynamic nature of culture may be broadly understood from three different but related cultural views transmission, exchange, and innovation.

1.2.1 Cultural Transmission

The concept of cultural transmission has been commonly discussed in different disciplines (such as archeology, anthropology, and biology). Examples of culture transmission can even be observed among animals (e.g. through behavioral imitation). A few widely cited cases of cultural transmission in animals include the opening of milk bottles (Fisher & Hinde, 1949, as cited in Lefebvre, 1995), cowbirds' courtship patterns (Freeberg, 1998), and stone handling and sweet potato washing behaviors among Japanese macaques (Whiten et al., 1999). The implications from these examples are that animals' behavioral patterns mimic the distinct behavioral variants also seen in different human populations, with cultural transmission being a widely observed phenomenon (Biro et al., 2003).

In human society, cultural transmission is even more critical. It represents the accumulative wisdom passed down from generation to generation. In a sense, cultural values are like biological "genes" being genetically passed down to next generations with important values, behaviors, and knowledge embedded in the process of transmission. So, cultural transmission can also be regarded as cultural learning (Boyd & Richerson, 1985; Cavalli-Sforza & Feldman, 1981; Lehmann, Feldman, & Kaeuffer, 2010) as it enables the transformation and evolution of relevant knowledge, skills, attitudes, and values in a society. Without transmission there will be no social transformation and evolution (Dawkins, 1976, 1989; Mesoudi & Whiten, 2008). During cultural transmission, parent generation will pass down what they value the most (such as concepts, behaviors, and artifacts) to child generation by means of socialization (Bisin & Verdier, 2001; Boyd & Richerson, 1985; Cavalli-Sforza & Feldman, 1981). Anthropological research has indicated that the learning environment of children is fundamentally shaped by cultural value and the transmission of culture is learned through experiences and conventions (Dawkins, 1976, 1989; Laland & Janik, 2006; Levine, 1974). Knowledge about cultural transmission is therefore important for understanding cultural change. Transmitted cultural concepts and practices help the formation of a unique national spirit and characteristics.

From an educational viewpoint, cultural transmission means direct teaching of cultural knowledge and values, which in turn affect the ways learners think and act. As a driving force for social progress, education plays an important role in deciding what students need to learn and what traditional cultures need to be preserved, especially those universal cultural values passed down from the previous generations (Huang Chun-chieh, 2008). In turn, the succeeding generations continue to further develop their traditional culture literacy.

1.2.2 Cultural Exchange

Cultural transmission represents a vertical way of thinking about culture. However, culture can also flow interactively from one culture group to another (Benedict, 2005; Kato, 1956). Cultural exchange thus sees culture horizontally shaped through interaction between two distinct cultures (e.g. two ethnic groups or countries). Cultural exchange or diffusion (i.e. the spread of cultural items of thoughts, styles, religions, technologies, languages from one culture to another) has been a well-attested phenomenon incultural anthropology and cultural geography, as evidenced by Kroeber (1940) in his influential paper "Stimulus

Diffusion". In the process of cultural interaction, one culture group starts to experience different material artifacts, social institutions, behavioral traditions, beliefs, and/or languages from another culture group. When one cultural group with different cultural values experiences some foreign cultural artifacts, cultural exchange becomes more likely. This diffusion or exchange usually occurs when two cultural groups are geographically close to each other (direct diffusion), or when one culture conquers or enslaves another cultural group (forced diffusion), or when traits are passed from one culture through a middleman to another culture (indirect diffusion) (Kroeber, 1940). Being influenced by foreign cultures indicates that a foreign cultural group offers something new that is not yet seen or used by the receiving cultural group, which makes the content of a culture group more complex and rich (Kato, 1956). For instance, in 1543, a Portuguese ship drifted near the shores of Tanegashima Island in Japan, bringing guns to Japan. Consequently, the use of guns changed the way Japanese fought wars afterwards. As another example, when Spanish explorers brought horses to North America, it also had an unintentional impact on Native Americans. As a result, people could travel and hunt faster and farther. The coming and use of horses changed social roles and produced new social and cultural practices.

Like transmission, knowledge about cultural exchange is also important because in the process of exchange and interaction, foreign cultures, with the imported artifacts, can make the receiving culture group change its way of living dramatically. Hatch (1973) indicated that most of the cultural inventory of a society was the cumulative result of diffusion from neighboring cultures. For instance, the concepts of "loyalty" and "filial piety" were originally coined in China, but were imported and adopted by the Japanese, and the adoption of the concepts gave new elements to Japanese society (Benedict, 2005).

1.2.3 Cultural Innovation

As another cultural paradigm, cultural innovation represents the essence of cultural change (Barnett, 1953). Innovation could be defined as an idea, a practice, or an object/artifact that is perceived as novel by an individual or a group for potential adoption or adaption (Rogers, 2003). Innovation differs from invention in that innovation refers to the use of a better and novel idea or method, whereas invention refers more directly to the creation of the idea or method itself. Innovation also differs from improvement in that innovation refers to the notion of doing something different (Lat. innovate: "to change") rather than making the same thing better. The purpose of innovation is to build new knowledge (Bereiter, 2002; Hong, Chen, Chai, & Chan, 2011; Hong & Lin, 2010; Hong & Sullivan, 2009; Scardamalia, 2002).

In the processes of cultural innovation, new ideas or concepts are required to change cultural content, form, and mechanisms that can best satisfy a society's spiritual and material needs. Cultural innovation is essential for cultural progress; without innovation, improvement of a cultural group will be less likely (Lehmann et al., 2010). Innovation is therefore essential for transforming existing culture into a new cultural era as it can help realize what is culturally possible in the future. It is important to note, however, that innovation does not mean creating something out of nothing. Culture and knowledge always exist. If a society fails to examine existing knowledge or its culture, the chances to innovate will be minimal (Lee, 2011; Pen, 2013).

The important role of cultural innovation is that it encourages people to think beyond the ordinary, and to come up with new cultural ideas while working with these ideas in a persistent manner. But it is even more important to note that without a proper understanding of the critical role played by cultural innovation, it is also unlikely for someone to become the change agents and contribute to the overall progress of a society. Therefore, if we are to educate students to become more creative and innovative cultural knowledge workers, it is essential to first understand their cultural views, especially from a knowledge creation perspective.

2. Method

The purpose of this study was to explore college students' cultural awareness using the above-mentioned three views as examination criteria. Based on the questions highlighted above, two different but related analysis phases for exploring college students' cultural views were conducted: (1) individual reflective activity: this analysis investigated the general cultural view of college students based on personal reflection, and (2) collective reflective activity: this analysis further probed into college students' cultural views by using group discussion that requires more social reflection and elaboration as a method. In particular, phase 1 analysis employed essay writing as a tool to induce introspective reflection activity, and phase 2 analysis used group discussion as a tool for interpersonal reflection activity.

In phase 1, the participants were 176 college students (with their age ranging from 18 to 22) recruited from a technology-oriented university in Taiwan. The students were from middleclass families, and their majors included international commerce, accounting, business design, information management, finance, applied English, etc. The university is located in central Taiwan and is ranked in the third tier of the four tiers of all

technology-oriented universities nationwide by reputation. The participants were asked to complete an essay that required them to address the following key concerns: "What is culture?" "Where does culture come from?" and "Why is culture important?" Using content analysis (Strauss & Corbin, 1990), all the students' essays were coded sentence by sentence, and categorized into the three different cultural views as discussed above. Table 1 shows the coding scheme. Students' overall cultural view was determined based on the majority of statements being coded under a given coding theme. An inter-coder agreement was calculated to be .95 by determining the extent to which both coders assigned the same statements to the same theme. One-way ANOVA was computed to determine whether there were statistically significant differences among the three cultural views.

Table 1. Coding scheme for analyzing different cultural views

View	Example
Transmission-oriented	- "Culture is heritage." (Yen)
	- "Culture comprises habits, customs, and other activities passed down from generation to generation." (He)
	- "Culture is the accumulation of human behaviors, customs, and language/vocabulary." (Hsu)
Exchange-oriented	- "Japan started learning about Chinese culture from the Tan Dynasty and was strongly influenced by China." (Tsao)
	- "After the Meiji Restoration (1868), Japan was influenced by Europe." (Chang)
	- "Japan absorbed American popular cultural artifacts such as professional sports and movies." (Gon)
Innovation-oriented	- "By improving other countries' cultures, Japan gradually created its own cultural forms and practices." (Chen)
	- "In the process of cultural innovation, paradoxes may exist, but eventually new cultural practices are established and old practices combined." (Lee)
	- "Japanese culture means cultural ideas plus innovation." (Zwo)
	- "Japanese take things from other countries and then modify them, making them their own. Japanese language and foods are two examples of this innovating process." (Hung)
	- "Japanese people accept new cultures; this is good because they can make foreign things theirs." (Yo)

Phase 2 analysis focused on students' group discussion. This alternative method of analysis was used not only to guide students into deeper reflection on what culture means to them but also to validate findings. The participants in this phase were 33 students who were selected from the same pool of 176 participants in the same grouping. Discussion was implemented with each group containing about five or six students. The average discussion time was 30 minutes or so. Before discussion, a moderator was appointed in each group. The moderator was trained to do the following: introduce discussion topics and close discussion, manage turn-taking, and elicit and acknowledge responses (Myers, 1998). Topics discussed by students included: "What is culture?" "What do you think of multiculturalism?" "Where does culture come from?" "Why is culture important?" No explicit hints or keywords concerning the three cultural views (transmission, exchange, and innovation) were provided in the discussion to avoid bias. The whole group discussion was analyzed by having the content of the discussion divided into sections. A section is defined as a complete theme being discussed at one time by a group; when the group moved to discuss another theme, it marked the start of another discussion section. The data from the group discussion were audiotaped, transcribed, and then content-analyzed using a method called "key-theme-in-context" (Morgan, 1998; Onwuegbuzie, Dickinson, Leech, & Zoran, 2009). It was used to check whether any key cultural themes/concepts emerged from the group discussion. The purpose of doing this was to determine how themes/concepts were covered and developed in the group discussion context. Then, constant comparison analysis (Strauss & Corbin, 1998) was used to identify differences among the three different cultural views. Similar to phase 1, statistics were computed to see whether there were differences among the three cultural views.

3. Results and Discussion

3.1 Phase 1: Cultural Views Identified from Students' Essay Writing

Table 2 summarizes the investigative results of the three cultural views identified in students' essay writing. As it shows, the three different cultural views were mentioned altogether 410 times in a total of 176 essays analyzed. The cultural transmission view was mentioned 310 times (75.60%), the cultural exchange view was mentioned 42 times (10.24%), and the cultural innovation view was mentioned 48 times (11.71%). Respectively, the mean number of times the cultural transmission, cultural exchange, and cultural innovation view were referred to in student essays was 1.76 (SD=1.29), 0.24 (SD=0.53), and 0.27 (SD=0.55). An ANOVA test further showed that there was a significant difference among the three views (F=161.3, p<.001). A post hoc test indicated that the mean number of times of the cultural transmission view being brought up in essays was significantly higher than that of the cultural exchange view (p<.001) and that of the cultural innovation view (p<.001).

As it may be biased to use number of times for statistics (i.e., a participant might repeatedly mention a given cultural view a great number of times), additional investigation using "person" as unit of statistical analysis was conducted. The purpose of doing this was to triangulate the finding above. As shown in Table 3, it was found that among all 176 students, the majority of them (84.10%; 107/176) referenced a cultural transmission view, whereas only 18.75% (33/176) and 21.59% (38/176) of all participating students ever referenced cultural exchange and cultural innovation views. It is important to note that the percentage does not add up to 100% because students could discuss about two or three views in the essay at the same time. The results of the descriptive statistics (using person to count) confirm the results of the inferential statistics (using number of times to count). Overall, the participating students seemed to be more accustomed to a transmission-oriented view of culture, in contrast to the other two alternative views. This, however, does not imply that students' cultural view should be considered monolithically. Rather, it only suggests that students were more likely to reflect on the nature of culture from transmission perspective rather than from exchange or innovation perspective. Below are a few examples of the transmission-oriented cultural view statements excerpted from students' essay writings.

Table 2. Comparison of the three cultural views (using total number of times each view was referred to as unit of analysis)

View	Percentage (Frequency)	M	SD	F value
Transmission-oriented	75.60% (310/410)	1.76	1.29	161.3***
Exchange-oriented	10.24% (42/410)	0.24	0.53	
Innovation-oriented	11.71% (48/410)	0.27	0.55	

*** p<.001

Table 3. Comparison of the three cultural views (using number of students as unit of analysis) (N=176)

View	Percentage of students who referred to a given cultural view	Percentage of students who did not refer to a given cultural view
Transmission-oriented	84.10% (148/176)	15.90% (28/176)
Exchange-oriented	18.75% (33/176)	81.25% (143/176)
Innovation-oriented	21.59% (38/176)	78.41% (138/176)

Culture is important to pass down. It allows us to understand why our culture exists, to understand its meaning, and teach us about our ancestors' lifestyles and economic situations. So, cultural transmission is very important. We can draw wisdom from our ancestors. (Chen)

Culture consists of lifestyles, social mores and activities (including beliefs, manners, etc.). Culture is like history which is passed down from generation to generation…since ancient time…. Culture finally becomes customs, and has significant influence on us. (Ma)

It [culture] is some meaningful things our ancestors handed down… If culture and our ancestors' wisdom are not preserved, we cannot make further progress in our society… [culture is] the wisdom and experiences of our predecessors and because of its importance, culture was passed down through written form or oral narration. (Yen)

3.2 Phase 2: Cultural Views Identified from Students' Group Discussion

Essay writing is clearly based on individual reflection (i.e. a personal thinking activity). Socio-cognitive learning theory (Brown, Collins, & Duguid, 1989; Bruner, 1990; Lave, 1988; Vygotsky, 1978), however, argues that deeper collective reflection can be aroused by social learning activities. So, we wondered whether, if we put students in an interactive discussion mode (with more cognitive resources available for students to draw from other peers), they may be able to talk more deeply about different cultural views. So, additional analysis on students' discussion was conducted. As a result, it was found that although students occasionally talked about cultural exchange and innovation, most group discourse was still highly focused on topics related to cultural transmission. Their discussion showed only a superficial awareness of the other two alternative cultural views, as well as the relationships among the three different cultural perspectives. This further suggested that students tended to think more about, perhaps have more understanding of, the culture transmission view than the other two views.

To elaborate, first, it was found that the occurrence of discussion about the transmission view appears to be much more frequent than the other two cultural views. As shown in the following example (#4), in discussing how culture is developed and formed, student Hung said: "I think it is mainly formed by means of accumulation." Also, student Tsai thought: "…this kind of pattern or culture will be passed down" and "…we eat moon cake in the Mid-Autumn Festival. That is a tradition passed down from and influenced by the ancient time..." In another example (#5), student Chen described culture as "something that passed down from past till present." Student Chiang considered culture as "specific habits and knowledge passed down from a long time ago"; and student Yeh referred to culture as "some things…kept and then handed down till now". Further, in example #6, students talked about culture artifacts and activities that were inherited from ancient times such as festivals, Confucius's teaching, and they thought that those that can be kept till now are important tradition. The results showed that students typically hold a transmission-oriented culture view, which confirms the results found in phase 1 analysis.

Example 4:

Hung: *Where does culture come from? How does culture develop? I think it is mainly formed by means of accumulation. And its selection and development are also decided by the ruler of a dynasty.*

Tsai: *Yes, the ruler has ultimate power to decide whether certain culture should be preserved. So, the people in a nation developed their own pattern of living and this pattern becomes so-called culture. And, this kind of pattern or culture will be passed down.*

Wang: *So, what's the conclusion?*

Hung: *Yes, what is tradition after all?*

Tsai: *Tradition is affected by such patterns or customs. For example, we eat moon cake in the Mid-Autumn Festival. That is a tradition passed down from and influenced by the ancient time.*

Li: *So, tradition won't change.*

Tsai: *Yes, traditional culture is inherited from the past and it barely changes.*

Example 5:

Chen: *Culture is something that passed down from past till present.*

Chiang: *I think culture is…specific habits and knowledge passed down from a long time ago, isn't it?*

Ma: *I don't know for sure, either. But, I think culture is just like what you said, a way of living…*

Chiang: *Will other people say some things? What do you think about culture?*

Yeh: *Culture is…some things…kept and then handed down till now. I guess that is probably culture.*

Example 6:

Lin: *Tradition!*

Fan: *Culture is tradition that is inherited from...*

Lin: *(from)…a lot of things.*

Fan: *Yes, always passing down from generation to generation.*

Tu: *Like Taoism. When they pray, they hold incense with their hands. This later becomes a part of our culture. Language is the same. They were passed down from older generations.*

Huang: *Anyway, it is handed down from the old time to the present time and after a long while, everyone takes it for granted and thinks it is a part of our culture.*

Fan: *It then becomes habit.*

Huang: *Yes, then, it becomes a tradition. So, tradition is related to culture.*

In contrast, it was found that there were only a very few cases in which students mentioned cultural exchange and innovation during their discussion. Two examples were excerpted from student discussion as follows: First, in example #7, student Gon said: "… in different areas, different cultures were formed. Once interaction has happened, there will be different culture…"; and student Tzen said: "Culture begins from interaction." Also, student Iao stated: "Various cultures interact to form new cultures." Furthermore, in terms of an innovation view, as can be seen in example #8, student Zhang said: "people in the past created the culture…" while student Yo also mentioned the word "innovation!" in group discussion.

Example 7:

Tray: *Culture is a group of people living together while developing their own unique way of living.*

Gon: *Human beings can use languages and scripts. Thus, they gradually used these tools to develop their own history within which culture was formed. And in different areas, different cultures were formed. Once interaction happens, there is more diverse culture, and this is wonderful.*

Chan: *Culture happens when people meet, or interact with other people. Suppose I share the same habit with him, he has the same habit with her, 100 people are sharing this same habit, then more and more people have the same habit, then, culture will be formed in the circle of those people.*

Iao: *Various cultures interact to form new cultures…So, culture could be formed anytime.*

Tray: *If a group of people have shared habits and then everyone identifies with the habits, habits will be handed down to the next generation and become culture.*

Example 8:

Zhang: *Most important of all, people in the past created the culture and later it became a tradition; and if people in the past accepted such tradition as their culture, we should do so too.*

Hsu: *But, it does not mean we have to agree with what people have done in the past.*

Zhang: *That is…*

Yo: *Innovation…*

Zhang: *I mean culture and tradition. We just talked about it. That is part of tradition…, traditional culture. Traditional culture was kept intact and we must respect it and identify with it.*

Hsu: *Tolerance!?*

Zhang: *Yes, like tolerance and respect for it.*

However, on closer examination, it can be seen that the discussion topics always quickly returned to transmission, and then went on without further and deeper explanation about or elaboration on what cultural interaction or innovation really means, why they are important, and how they are related to people's lives, etc. It is possible that because the students have only a trivial understanding of cultural exchange and innovation they were not able to discuss more deeply the meaning and importance of cultural exchange and innovation for the overall progress of a society. Moreover, since the participating students only discussed cultural exchange and innovation superficially, they were not able either to interpret the relationships among the three different cultural views. As noted in the literature, the purpose of transmission is to preserve our cultural legacy and civilization. But exchange and innovation are also constantly happening in refining and redefining our culture, and further advancing our civilization. Therefore, understanding the relationships among the three cultural views is also important. But the students clearly lacked such a relational understanding. In short, although the students' discussions related to exchange and innovation are mentioned at times, the discussions lacked depth, not to mention the fact that they were not able to deeply explain the relationships among the three cultural views.

Building on the above discussion, it may be inferred that the reason students hold tightly to a transmission-oriented cultural view may have to do with their study experiences in a technology-oriented university. It is perhaps because they rarely have chances to experience or participate in any cultural exchange and/or creating activities. Even though there may be some possible textbook knowledge in their general core courses relevant to cultural literacy, perhaps without more intensive instructional intervention and/or some real experiences of cultural exchange and creating activities in learning, it is still difficult to have students attain more in-depth understanding regarding the importance of cultural exchange and innovation. As a result, they were not able to elaborate on the meaning of cultural exchange and innovation either in their individual or collective reflective activities.

4. Conclusion and Limitations

Culture cannot be separated from human experiences (Williams, 2011) and there are different ways of experiencing and seeing culture as the literature suggested. Of these, three general types of cultural views identified in literature in this study are: cultural transmission, cultural exchange, and cultural innovation. Using these three lenses to examine cultural activities, this study explored what view or views are commonly possessed by college students from a Taiwanese technology-oriented university. To this end, a complementary two-phase analysis that involved individual and collective reflective activities was conducted. In summary, the analysis results, based on student essays, suggested that the participating students hold tightly onto a transmission-oriented cultural view. More detailed examination of group discourse further showed that while students occasionally mentioned cultural exchange and innovation, their discussion was quite superficial as they did not show any deep understanding of what cultural exchange or innovation really mean and why they are important, etc. Further, they did not explain the relationships among the three different cultural views either.

Two suggestions are made based on the analyses. First, from a cultural exchange point of view, enhancing college students' cultural literacy and providing them with learning opportunities for more diverse cultural experiences may be necessary to help them broaden their cultural views. Moreover, from a knowledge creation perspective, enhancing students' understanding of the importance of cultural innovation should be taken into serious consideration as an important part of college students' formal or informal learning experiences. Traditional education basically sees cultural learning as an activity directed towards enhancing the acquisition and accumulation of cultural knowledge (Polanyi, 1967), whereas enhancing learning for promoting cultural exchange or innovation requires a different kind of curricular and instructional design that encourages students to explore diversified cultural experiences or to learn from other cultures, as well as to learn to build new cultural understanding.

As noted earlier, the purpose of cultural creation and innovation is to build new cultural knowledge. Indeed, the development of all cultures is a knowledge-building process under which culture is continuously innovated, exchanged, and transmitted in a broader cultural context. This knowledge-building process and the outcomes it entails (e.g. cross-cultural understanding) has been conceptually and empirically contested to be an important learning experience that is essential for twenty-first-century learning (Bereiter, 2002; Hong et al., 2011; Hong & Lin, 2010; Hong & Sullivan, 2009; Scardamalia, 2002). For this reason, instructional and curriculum design should consider the inclusion of more learning activities that encourage students to engage in cultural knowledge-building activities. And one way to do so is perhaps to provide students with more learning

opportunities to experience and appreciate multiculturalism. As found in recent studies, exposing students to multicultural experiences can enhance their creative capacity (Leung, Maddux, Galinsky, & Chiu, 2008). As traditional instruction tends to highlight knowledge telling or knowledge delivery in class teaching, it may only reinforce students' culture transmission view. To address this issue, instruction needs to be transformed to become more student-centered and discovery-oriented, by allowing students more autonomy to explore various cultural exchange and creation activities themselves. Doing so might help students construct and develop a more informed view that sees cultural artifacts and institutions as improvable objects while also valuing highly their multicultural learning experiences. Because the participants of this study are confined within Taiwanese students with technology background who are interested in Japanese culture, it is suggested that future study could include participants from general universities. Regarding the social and cultural context of this study, perhaps, a more systematic design of a longitudinal study is needed to further examine whether the cultural views of college students can be sustained over time.

Cultural literacy is essential to a productive knowledge society (Trilling & Hood, 1999). It is thus very important for school education to promote a more informed cultural view and awareness among students, so that they do not just see culture as heritage from a more transmission-oriented cultural view, but also understand the importance of cultural diversity and cultural evolution from other cultural perspectives for the genuine prosperity of a society.

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