

Learner-Centeredness vs. Teacher-Centeredness: How Are They Different?

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Abstract

This study describes the teaching style behaviors that differentiate between learner-centered and teacher-centered approaches to teaching. The Teaching Style Assessment Scale, which measures teaching style, was completed by 1,261 nursing faculty in Japan. Discriminant analysis and cluster analysis revealed that the distinctive characteristic distinguishing the learner-centered approach from the teacher-centered approach is Personalizing Instruction. Personalizing Instruction recognizes and utilizes the uniqueness of each student's strengths. Personalizing Instruction can facilitate students' interpersonal understanding and self-awareness. By implementing Personalizing Instruction, teachers can facilitate the metacognitive process in their students, which is healthy for the individual and productive for meaningful learning. Learner-centeredness embraces Personalizing Instruction, while teacher-centeredness rejects it. Teachers practice learner-centered and teacher-centered styles nearly equally. Personalizing Instruction is the most critical teaching style element and the indispensable definitive factor separating these styles.

Keywords: teaching style, learner centered, personalizing instruction, Teaching Style Assessment Scale (TSAS), individual differences, multivariate procedures, Japan

1. Introduction

The focus of any learning episode should be on the learner. After all, the purpose of a learning activity is for the learner to learn. This may sound obvious, but it needs to be addressed in teaching-learning transactions. This is so much so that an entire body of literature has developed in education called "student-centered learning." Indeed, "the term student-centered learning most likely arose in response to educational decisions that did not fully consider what students needed to know or what methods would be most effective in facilitating learning for individual students or groups of students" (Edglossary, 2013, para. 3).

Although various terms have been used to describe student-centered learning and teaching, "learner-centered" has become the preferred term because it applies to a wide range of learners across all levels of education (Shah, 2020a, p. 46). Regardless of the precise term used, there is general agreement in the literature on the concept of learner-centered learning (Lea, Stephenson, & Troy, 2003). It is accepted that learner-centered learning focuses on the learners' needs, abilities, interests, and learning styles, with the teacher as a facilitator of learning (Weimer, 2002). With learner-centered learning, the planning, implementing, and assessing of learning activities are based on the needs and abilities of the students, and the teacher's function is to facilitate student growth by utilizing each student's interests and unique needs. As a result, the focus is on the needs of the learners rather than the teacher and more on learning than teaching. With learner-centered learning, students are actively engaged in the learning process, encouraged to reflect and think analytically about what they are learning and how they are learning it, motivated by having some control over their own learning, and encouraged to collaborate with others in the learning process (Weimer, 2013). Consequently, learner-centered learning involves meeting students where they are and meeting the needs of each student individually.

Learner-centered learning has a long historical tradition that can be traced back more than 2000 years (Shah,

2020a, 2020b). This approach to the learning process is associated with the works of John Dewey, Jean Piaget, Carl Rogers, and Malcolm Knowles (Abdullah, Osman, Shamsuddin, Yusoff, & Ismail, 2012, p. 5; Shah, 2020a, p. 46). Although the traditional teacher-centered learning approach has been the most pervasive pedagogical model worldwide, the paradigm shift related to the importance of learning rather than teaching is increasingly being encouraged, boosting the power to be moved from the teacher to the student (Shah, 2020a, p. 45). There have been strong educational movements to shift away from an importance on teaching to an emphasis on learning during the past century. This paradigm shift encourages the movement of power from the teacher to the student (Abdullah et al., 2012, p. 5). This learner-centered process creates “a style of instruction that is responsive, collaborative, problem centered and democratic in which both learners and the instructor decide how and when learning occurs” (Shah, 2020a, p. 46).

Nursing education in Japan is undergoing a profound change due to its paradigm shift toward learner-centered learning. Nursing education in Japan is offered at nursing universities that offer 4-year a Bachelor of Science in Nursing, at a small number of junior nursing colleges offering a 3-year Associate of Science in Nursing, and in nursing schools offering 3-year diplomas. Of these three sources, universities and nursing schools are the major sources of nursing education in Japan. Nursing professionals are expected to have the ability to create nursing care that responds to the diversity and complexity of the target population. Educational strategies allowing students to learn independently are indispensable for developing this capability. Critical thinking is essential to the practice of evidence-based nursing of respecting patient preferences, and a learner-centered approach is necessary to develop this skill (Chipas, 1995; Schaefer & Zygmunt, 2003).

Nurse educators in Japan need to make a significant shift in their teaching philosophy and teaching style to promote problem-solving and critical thinking because teacher-centered approaches may not prepare graduates for the ambiguities and uncertainties in healthcare systems that demand flexibility and an ability to think critically (National League for Nursing, 2003). Instructors’ teaching style needs to foster the development of critical thinking, clinical reasoning, and critical appraisal (Papathanasiou et al., 2014; Parkes et al., 2011).

Consequently, nursing education in Japan has seen increased efforts to implement learner-centered teaching. The Central Council for Education, which regulates the curriculum of the colleges and universities, proposed a learner-centered education to shift from “what you taught” to “what learners have learned and acquired” (MEXT, 2018, Shifting to Learners-Oriented Education section, para. 3). Teachers must develop skills to stimulate students to think about what needs to be done for and with their patients (Ito et al., 2021, p. 47). In nursing education, the curriculum rules have been revised nationwide to apply to students entering in 2022 because learner-centered education is necessary for people with diverse values to collaborate and contribute to society and the world. However, if the educational perspective of teachers does not change, learner-centered teaching will be difficult and ineffective, no matter the methods used.

With these changes, nursing educators in Japan have recognized that they “can no longer afford to move along our current outdated teaching trajectory” with a focus on merely content delivery (Patterson & Forneris, 2023, p. 139). Worldwide, “there has been increasing emphasis in recent years on moving away from traditional teaching toward student-centered learning” (TEAL, 2010). With the demand for creating critical thinkers and lifelong learners, there is a need throughout education to “reframe the teaching-learning process and move away from a sole focus on content delivery” (Patterson & Forneris, 2023, p. 139). Students need to be actively engaged to enable learning. To accomplish such a change, teachers in all areas of education must recognize their teaching style and the implications of implementing their style.

Teachers are the most crucial aspect for student achievement in education (Opper, 2019). Indeed, the teacher’s behavior may be the most influential variable in the classroom (Knowles, 1970, p. 41). Research supports that “teaching does make a difference Teaching is the human connection between the content and the environment and the learners” (Heimlich & Norland, 1994, p. 109). Consequently, the teacher’s actions are vital to the teaching-learning interaction. These actions are labeled as *teaching style*. “Teaching style refers to the distinct qualities displayed by a teacher that are persistent from situation to situation regardless of the content” (Conti, 2004, pp. 76–77). These qualities can be classified as the instructor having either a teacher-centered or a learner-centered teaching style.

The teacher-centered approach is closely related to the ideas of B. F. Skinner. This approach to learning assumes that learners are passive and that they become active by reacting to stimuli in the environment. Learning is defined as a change in behavior with the desired behavior defined in overt and measurable terms in behavioral objectives. Evaluation of student learning is based on either criterion-referenced or norm-referenced tests. Elements that exist in this environment are viewed as reality. With the teacher-centered approach, motivation is

from external stimuli. In this teacher-centered approach, the teacher's role is to design an environment that stimulates the desired behavior and to discourage those that have been determined to be undesirable (Conti, 2004, pp. 77–78).

The learner-centered approach has been informed by the work and writings of Carl Rogers, and many of its assumptions were based upon his conception of client centeredness based on his work as a non-directive counsellor (Shah, 2020b, p. 13). In the classroom, education focuses on the individual learner rather than on a body of information. The learner-centered approach assumes that the learner's potential for individual growth is unlimited. Reality and behavior result from personal perceptions as the learners interpret and react to their surroundings as they interact with them. In the learner-centered approach, motivation is internal, with the learner's experiences playing an essential role in learning. Learning is a highly personal act. Therefore, evaluation is often more formative than summative, utilizing self-evaluation and constructive feedback from the teacher and other learners. Consequently, the role of the teacher is as a facilitator for proactive learners who take responsibility for their actions (Conti, 2004, p. 79).

Thus, the teacher-centered and learner-centered approaches differ fundamentally in their basic assumptions about learning and philosophical underpinnings. While educational philosophy and teaching style are directly related, the process that differentiates groups in this relationship is the educator's view of the role of the teacher in the teaching-learning process (Conti, 2004, p. 77; O'Brien, 2001, pp. 172–174). In order to precisely distinguish between these two approaches, the purpose of this study was to describe the teaching style behaviors that differentiate between a learner-centered and a teacher-centered approach to teaching.

2. Methodology

Research related to teaching styles in the field of Adult Education has focused around the Principles of Adult Learning Scale (PALS). PALS has been used in various ways in numerous studies (Byrd, 2010, pp. 90–98) and has been recognized for measuring teaching style in significant texts in the field of Adult Education (Brookfield, 1986, pp. 34–36; Heimlich & Norland, 1994; Merriam & Bierema, 2013, pp. 59–60). PALS measures teaching style in English. A derivative, The Teaching Style Assessment Scale (TSAS), was developed to measure teaching style in Japanese (Yoshida, Conti, Yamauchi, & Iwasaki, 2014).

The Teaching Style Assessment Scale (TSAS) is a 30-item summated rating scale that measures the frequency with which one practices teaching-learning principles described in the adult education literature. TSAS uses a 6-point Likert-type scale with the following options: 0 = *Never*, 1 = *Almost Never*, 2 = *Seldom*, 3 = *Often*, 4 = *Almost Always*, and 5 = *Always*. Consequently, scores range from 0 to 150. The mean for TSAS is 81, with a standard deviation of 15. Scores above the mean of 81 indicate a tendency toward the learner-centered mode, while scores below 81 imply support for the teacher-centered approach.

One thousand two hundred sixty-one participants completed TSAS. An anonymous, self-administered questionnaire survey was sent to nursing faculty in Japan. The list of schools was created using the list posted on the Ministry of Health, Labor, and Welfare website. Faculty representatives at 265 institutions that consented to participate in the study distributed a materials file to teachers willing to participate. Each file contained (a) a research participation request form for the teacher, (b) a copy of the TSAS questionnaire, and (c) a self-addressed, stamped envelope. All forms were anonymous, and all survey forms were received by postal mail. A total of 2,595 questionnaires were sent, and 1,261 (48.6%) were returned; 783 were from nursing schools, and 478 were from nursing universities. This data collection was conducted by the postal method from September to November 2017 after ethics review approval from the institution where the principal investigator is affiliated.

The mean for the sample was 86.04, with a standard deviation of 14.57. The scores were normally distributed with 22 who were under 2 standard deviations below the mean (51 and below) and 46 who were over 2 standard deviations above the mean (111 and above). These two groups represent the most extreme instructors in their commitment to their teaching style. The group of 22 is firmly committed to a teacher-centered approach, while the group of 46 overwhelmingly practices a learner-centered approach.

3. Discriminating Between Teaching Style Approaches

Knowing precisely what separates these two groups would be insightful to understanding teaching styles better. Out of the 30 items in TSAS, which items drive the 22 to one end of the scale and the 46 to the other end? In addition, what is the degree of difference between the two groups on each of these items? Discriminant analysis was used to explore these questions to uncover what teaching style variables account for the difference between learner-centered and teacher-centered instructors.

The items in TSAS were examined as a group to determine if they could be used to help describe the differences

between those who supported a teacher-centered style and those who favored a learner-centered style. Discriminant analysis was used for this analysis because it is a statistical procedure interested in the interaction of the variables in the analysis (Conti, 1993, pp. 90–91). Discriminant analysis is a statistical procedure that simultaneously examines the difference between groups on several variables (Klecka, 1980, p. 5). This process identifies the relationship between groups and the predictor variables (Kachigan, 1991, p. 216), thereby revealing the interaction between the predictor variables and the groups. As a result, discriminant analysis can explain a person's placement in a group (Conti, 1993, p. 90).

Thus, discriminant analysis is used to (1) “discriminate” between the groups based on some set of characteristics, (2) tell how well these characteristics discriminate, and (3) determine which characteristics are the most potent discriminators (Klecka, 1980, p. 9). The predictor variables in the analysis calculate the accuracy of the discriminant function in correctly classifying people into their proper group (Conti, 1993, pp. 91–92; Kachigan, 1991, pp. 218–219; Klecka, 1980, pp. 8–14).

The discriminant analysis procedure produces three essential statistics to help interpret the results. These are the discriminant function, the classification table, and the structure matrix. The discriminant function is a formula for placing people in the groups (Conti, 1993, p. 91). The accuracy of the discriminant function in placing people in their proper groups is shown in the classification table (p. 91). This accuracy should be judged in relation to the likelihood of placement by chance in the group.

The third and most important statistic is the structure matrix. The structure matrix is a table. The correlation coefficients show the relationship between the individual predictor variables and the discriminant function (Conti, 1993, pp. 93–94). The structure matrix is used to “name” the discriminant function (Klecka, 1980, p. 31). This naming describes the groups and suggests how the process separates the groups (Conti, 1996, p. 71). In essence, this name explains the interaction between the variables in distinguishing between the groups (p. 91).

Discriminant analysis was used to identify the process that separated or discriminated between the group that supported a teacher-centered style and the group that backed a learner-centered style; each group scored over 2 standard deviations from the mean of 81 on TSAS. The 30 items in TSAS were used as the discriminating variables. Discriminant analysis was used to determine whether an *interaction* existed among these discriminating variables in correctly distinguishing a respondent's group membership. The Wilks' Lambda method was used to select the inclusion variables in the discriminant function.

The discriminant function was 100% accurate in placing respondents in their correct group of either supporting the teacher-centered or learner-centered styles. The discriminant function had equal accuracy in predicting membership in each group (see Table 1). This accuracy was the maximum possible 50% improvement over the chance placement of 50% for the two groups, and it left none of the variance unexplained.

Table 1. Accuracy of discriminant analysis in classifying group membership

Group	Predicted Group Membership		Total
	Teacher	Learner	
Number in Each Group			
Teacher-Centered (51 and Below on TSAS)	22	0	22
Learner-Centered (111 and Above on TSAS)	0	46	46
Percent of Placement			
Teacher-Centered	100	0	100
Learner-Centered	0	100	100

The structure matrix was used to name this process that separated the two groups. The items with the highest correlation in the structure matrix are the strongest in describing the process. Six items had correlations at .2 or above (see Table 2). The three most robust items are in TSAS's Factor 1—Participation in the Learning Process. The fourth and fifth most substantial items are in Factor 3—Climate Building (Create Learning Climate), and the sixth item is in Factor 2—Relating to Experience. Collectively, the items deal with the concept of *Personalizing Instruction*. Notably, the label for this concept contains the verb “personalizing” because it involves “action” by the teacher. The label is not in a noun form to imply “a thing.” Instead, as a verb form, it announces and describes the actions and behaviors of the teacher to implement the preferred teaching style.

Learner-centered teachers embrace Personalizing Instruction, while teacher-centered instructors reject it. The average score on the six items for the teacher-centered instructors was 1.4, indicating that they *Almost Never* or

Seldom engage in Personalizing Instruction. Indeed, their average for the four most substantial items of the six was 0.95, meaning they *Almost Never* engage in these aspects of Personalizing Instruction.

Conversely, learner-centered teachers strongly support all elements of Personalizing Instruction. Their average score on the six items was 4.5, indicating that they *Always* or *Almost Always* implement Personalizing Instruction in their teaching.

Personalizing Instruction in relationship to teaching style is a comprehensive concept. It begins with recognizing the uniqueness of each student and starting with these strengths. It rejects the idea that students come to the learning experience with their minds as *tabula rasa* (blank slate). Instead, it recognizes that each learner has a vast array of prior experiences that can serve as a reservoir and catalyst for future learning. Personalizing Instruction focuses on the psychological state of *becoming*, a transition toward possible change, rather than on the state of *being*, which is how one exists in the present form. Thus, the thrust of Personalizing Instruction is on the learner to develop to become even better.

Table 2. Items from TSAS that discriminate learner-centered and teacher-centered groups

Corr.	No.	Item	Item Mean	
			Teacher	Learner
0.38	26	I have my students identify their own problems that need to be solved.	0.68	4.46
0.27	23	I gear my instructional objectives to match the individual abilities and needs of the students.	0.59	4.22
0.25	25	I allow a student's motives for participating in continuing education to be a major determinant in the planning of learning objectives.	0.91	4.33
0.24	14	I utilize the many competencies that most adults already possess to achieve educational objectives.	1.64	4.44
0.23	7	I arrange the classroom so that it is easy for students to interact.	2.50	4.78
0.21	8	I plan learning episodes to take into account my student's prior experiences.	2.36	4.72

Above all else, Personalizing Instruction is an active condition. It is dynamic and not passive. Learners are actively involved in identifying their own problems that need to be solved and their motives for participating in the learning activity. They are consciously building on their prior experiences; this involves identifying those experiences, assessing those experiences, and then building on these experiences. In this process, they also actively identify their abilities, competencies, strengths, and needed areas for development. They do this in an environment where they interact with both the teacher and other learners.

Overall, the primary difference between teacher-centered and learner-centered styles is Personalizing Instruction. This Personalizing Instruction consists of many facets. With the learner-centered style, Personalizing Instruction energizes the learner to take an active, dynamic role in personalized learning, focusing on developing and becoming a better person. The teacher-centered style rejects this concept of Personalizing Instruction. While learning environments are complex involving numerous variables, the dominant factor distinguishing teacher-centered and learner-centered instructors is their approach to Personalizing Instruction.

4. Naturally-Occurring Groups

4.1 Cluster Analysis

Discriminant analysis uses a deductive approach to analyzing the data. That is, the teachers were placed in groups and analyzed based on the researchers' preconceived notions concerning scores on TSAS. However, cluster analysis can be used to inductively explore and describe naturally-occurring groups that exist in the data. Cluster analysis identified the naturally-occurring groups that exist among the respondents based on their responses to the individual TSAS items. Then, discriminant analysis was used to determine and name the process that separated these groups.

Cluster analysis is a statistical procedure that groups participants based on their similarities (Kachigan, 1991, p. 261). Cluster analysis uncovers naturally-occurring groups within the data set by placing people into homogenous clusters in which those in the cluster are more similar than those in different clusters (Sheskin, 2007, p. 1635). Thus, for the social sciences,

Cluster analysis is a powerful multivariate tool for inductively making sense of quantitative data. Its power lies in its ability to examine the person holistically rather than as a set of unrelated variables. Cluster analysis can be used to identify groups that inherently exist in the data. (Conti, 1996, p. 71)

The 30 items in TSAS were used to determine if the respondents formed any natural groups based on their teaching styles. In this process, cluster analysis forms groups sequentially in a hierarchical order using all people in the data set (Kachigan, 1991, p. 269). In this study, the statistical program examined all 1,261 respondents and, at each step, combined the two groups of individuals that were the most alike on TSAS's 30 items. It put them into a new group and combined their characteristics. It is essential to realize that cluster analysis examines the person as a whole. Therefore, the items on which they were very similar became strong characteristics for the new group, while the ones upon which they differed became weak.

This cluster analysis started with 1,261 cases. At each step in the hierarchical order, the cluster analysis grouped either individuals, individuals and groups, or groups and groups until it was down to one group, representing the entire data set. At each step, either one individual or one existing cluster was combined with another individual or existing cluster. This sequential process was repeated 1,261 times.

Two factors are essential in determining how clusters are formed in the hierarchical clustering process. These are the similarity of the individuals in the cluster and the distance between the clusters. Similarity refers to the resemblance, proximity, and association of items within a cluster (Aldenderfer & Blashfield, 1984, p. 17). The squared Euclidean distance is the sum of the square of the differences over all variables (Conti, 1996, p. 69) and is commonly used to measure the similarity between two cases (Kachigan, 1991, p. 265).

There are several methods to determine how cases will be combined into clusters in cluster analysis (Aldenderfer & Blashfield, 1984, p. 35). Ward's method is widely used in many of the social sciences for linking the clusters in the analysis (p. 43). Ward's method tends to find clusters that are relatively equal in size (p. 43). After the cluster analysis is run, the researcher then determines the best number of groups for the analysis (Aldenderfer & Blashfield, 1984, p. 53).

4.2 Clusters of Teachers

Cluster analysis was used to explore for naturally-occurring groups based on the 1,261 responses to the 30 items in TSAS. The clusters were formed using hierarchical cluster analysis and the squared Euclidean distance to measure the distance between the cases. Ward's method was used for linking cases into clusters.

Based on these parameters, a 4-cluster solution was judged as the best explanation of the data heuristically (see Figure 1). At the 4-cluster level, the size of the groups is distributed almost equitably at the 2-cluster level: 662 (52.5%) and 599 (47.5%). Each of these groups further divided into two groups, with one group considerably larger than the other. The group of 662 divided into groups of 514 and 148, and the group of 599 divided into groups of 391 and 208. Consequently, each of these divisions resulted in one smaller group and one larger group that was either 3.5 or 1.9 times larger. As a result, the four groups vary in size (see Figure 1). Although the largest group is 3.5 times bigger than the smallest group, each group is substantial, and all groups are large enough to avoid extreme within-group differences.

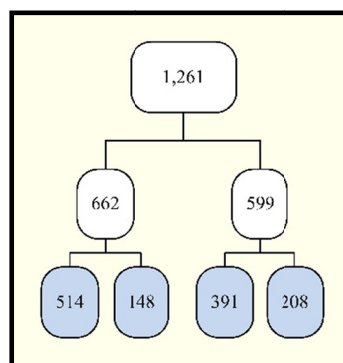


Figure 1. Cluster Formation for Teaching Style

4.3 Naming the Clusters

Once the clusters are identified, they must be described to be helpful. The clusters can be named by comparing them based on the variables used for their formation. An interactive way of comparing the groups on the variables is to use discriminant analysis (Conti, 1996, p. 71; Kachigan, 1991, p. 269).

When discriminant analysis is used to name the groups from the cluster analysis, the discriminant analysis uses

the variables from the cluster analysis as the predictor variables and the groups produced by the cluster analysis as the grouping criterion. The classification table and the structure matrix from the discriminant analysis are used for naming the process that separates the clusters (Conti, 1996, p. 71). After the classification table confirms the high accuracy of correct placement in the groups, the structure matrix is used to name the process separating the groups.

For this discriminant analysis, the groups from the 4-cluster level of the cluster analysis were used, and the 30 items from TSAS were used as predictors or discriminating variables. The discriminant function produced by this analysis was 88.5% accurate in placing the participants in their correct group. It was 91.7% accurate for the group of 599 and 85.6% for the group of 662. The structure matrix contained 11 items that correlated with the discriminant function at .4 or above, and these items were used in naming the process that separated the two groups (see Table 3).

Table 3. Items from TSAS that discriminate groups of 599 and 662

No.	Item	Corr.	Item Mean	
			599	662
25	I allow a student's motives for participating in continuing education to be a major determinant in the planning of learning objectives.	0.63	3.57	2.25
26	I have my students identify their own problems that need to be solved.	0.63	3.69	2.64
23	I gear my instructional objectives to match the individual abilities and needs of the students.	0.56	3.17	1.92
16	I have individual conferences to help students identify their educational needs.	0.51	3.05	1.84
17	I let each student work at his/her own rate regardless of the amount of time it takes him/her to learn a new concept.	0.50	2.70	0.90
18	I help my students develop short-range as well as long-range objectives.	0.47	3.09	1.97
22	I plan activities that will encourage each student's growth from dependence on others to greater independence.	0.46	3.86	3.04
14	I utilize the many competencies that most adults already possess to achieve educational objectives.	0.42	3.89	3.14
11	I use different techniques depending on the students being taught.	0.41	3.60	2.81
9	I allow students to participate in making decisions about the topics that will be covered in class.	0.41	3.00	2.04
12	I encourage dialogue among my students.	0.40	4.12	3.40

The 11 items in the structure matrix with the highest correlations deal with individualizing the teaching-learning process. The seven items with the highest correlations are from TSAS's Factor 1—Participation in the Learning Process. In addition, one of the remaining four items is from Factor 1. Two items are from Factor 3—Climate Building, and one is from Factor 5—Personalizing Instruction. Collectively, the 11 items deal with the teacher addressing and creating an environment of individual differences among the students. However, the two groups differ meaningfully in how much they engage in this Personalizing Instruction. The group of 599 either *Often* or *Almost Always* supports this Personalizing Instruction. Their average mean score for these items is 3.43, which is midway between *Often* (3) and *Almost Always* (4) on TSAS.

In contrast, the group of 662 *Seldom* pursue these practices. Their average mean score for these items is 2.36, near *Seldom* (2) on TSAS. Thus, the fundamental difference that separates the four naturally-occurring groups related to teaching style is the degree to which they address individual differences. The large group of 599, which contains the groups of 391 and 208, regularly focuses on individual differences among their students. The large group of 662, which includes the groups of 514 and 148, *Seldom* pursue the unique differences they encounter among their students. Lesser differences exist between the subdivisions of the two larger groups and reflect the degree to which the teachers in each of the four groups commit themselves to this predominant difference in support of addressing individual differences.

The large group of 599, which regularly focus on individual differences among their students, was comprised of two groups. The group of 391 was nearly twice as large as the group of 208. Discriminant analysis using the 30 items from TSAS was used to uncover how these two groups differed in their focus on individual differences. The discriminant function produced by this analysis was 87.6% accurate in placing the participants in their correct group. It was 89.3% accurate for the group of 391 and 84.6% for the group of 208. The structure matrix contained six items that correlated with the discriminant function at .35 or above. These items were used in naming the process that separated the two groups (see Table 4).

While both groups focus on recognizing individual differences, the group of 208 is more substantial in

supporting students identifying their own problems and educational motives and objectives. They are more apt to allow their students to work at their own rate and participate in their evaluation as they gear their instructional objectives to the student's individual needs and abilities. This group averages approximately three-fourths of a point higher in these areas than the group of 391. While the group of 391 tends to *Often* individualize in this manner, the group of 208 nearly *Almost Always* does. Thus, while both groups are committed to Personalizing Instruction, the group of 208 is most consistent in practicing Personalizing Instruction.

Table 4. Items from TSAS that discriminate groups of 391 and 208

No.	Item	Corr.	Item Mean	
			391	208
26	I have my students identify their own problems that need to be solved.	0.45	3.46	4.13
17	I let each student work at his/her own rate regardless of the amount of time it takes him/her to learn a new concept.	0.42	2.44	3.18
25	I allow a student's motives for participating in continuing education to be a major determinant in the planning of learning objectives.	0.38	3.34	4.23
18	I help my students develop short-range as well as long-range objectives.	0.37	2.84	3.54
1	I allow students to participate in developing the criteria for evaluating their performance in class.	0.36	2.24	3.22
23	I gear my instructional objectives to match the individual abilities and needs of the students.	0.35	2.93	3.64

The large group of 662, which *Seldom* addressed differences among their students, was composed of two groups. The group of 514 was nearly three-and-a-half times as large as the group of 148. Discriminant analysis using the 30 items from TSAS was used to discover how the group of 148 differed from those in the group of 514. The discriminant function produced by this analysis was 90.3% accurate in placing the participants in their correct group. It was 91.1% accurate for the group of 514 and 87.8% for the group of 148. The structure matrix contained five items that correlated with the discriminant function at .35 or above. These items were used in naming the process that separated the two groups (see Table 5).

While both groups *Seldom* expand on the unique differences among their students, the group of 148 is much more extreme in recognizing individual differences. They *Almost Never* consider students' learning objectives and matching instructional objectives to the student's individual needs and abilities. In addition, this group *Almost Never* considers students' learning motives when planning learning objectives. Likewise, students *Almost Never* are allowed to participate in making decisions about learning topics. While the group of 514 tends to utilize the existing competencies of the students *Often*, the group of 148 does it less. Overall, the group of 148 averages almost one point lower in these areas than the group of 514. As a result, the group of 148 is the most teacher-centered group among all four groups of teachers and tends to avoid Personalizing Instruction in several critical areas.

Overall, four naturally-occurring groups exist among teachers. These groups differ in how they address individual differences and how they create an environment of individual differences among the students. While the groups differ in the degree to which they apply Personalizing Instruction, two groups either *Often* or *Almost Always* support Personalizing Instruction, while two groups *Seldom* practice Personalizing Instruction. Some minor differences exist between the subdivisions of the two larger groups related to the amount of support for addressing individual differences. However, Personalizing Instruction is the fundamental decisive factor separating these groups.

Table 5. Items from TSAS that discriminate groups of 514 and 148

No.	Item	Corr.	Item Mean	
			514	148
18	I help my students develop short-range as well as long-range objectives.	0.43	2.21	1.11
23	I gear my instructional objectives to match the individual abilities and needs of the students.	0.41	2.15	1.12
25	I allow a student's motives for participating in continuing education to be a major determinant in the planning of learning objectives.	0.38	2.47	1.49
9	I allow students to participate in making decisions about the topics that will be covered in class.	0.35	2.24	1.32
14	I utilize the many competencies that most adults already possess to achieve educational objectives.	0.35	3.32	2.54

5. Discussion of Findings

The distinctive characteristic discriminating the learner-centered approach from the teacher-centered approach is Personalizing Instruction. Collectively, four naturally-occurring groups exist among teachers, differing in the degree to which they practice Personalizing Instruction. Personalizing Instruction recognizes the uniqueness of each student and capitalizes on these strengths. Psychologically, Personalizing Instruction focuses on the dynamic state of *becoming* rather than on the static state of *being*. Consequently, Personalizing Instruction is an active condition with a focus on the personal development of the learner. In this enlivening process, learners actively build on their prior experiences. This involves analyzing and expanding on these experiences. In this way, the learner's previous experiences serve as a reservoir and catalyst for future learning.

The paramount factor distinguishing teacher-centered and learner-centered instructors is their approach to Personalizing Instruction. Teacher-centered instructors reject Personalizing Instruction and rarely engage in Personalizing Instruction. In sharp contrast, learner-centered instructors embrace Personalizing Instruction and *Always* or *Almost Always* implement it in their teaching. Learner-centered teachers view their role as facilitators to actively assist the learners in their personal growth and development.

Personalizing Instruction can develop trust and stimulate the student's self-awareness. This process can convey a feeling to the students that they are prized for their feelings and opinions and as a person (Rogers, 1969, p. 109). For the teacher, Personalizing Instruction "is an acceptance of this other individual as a separate person, having worth in his own right" (p. 109). Moreover, this fundamental trust developed through this interactive process can create a climate that fosters "how deeply appreciative students feel when they are simply *understood*--not evaluated, nor judged, simply understood from their *own* point of view, not the teacher's" (p. 112).

This understanding can support the student's personal development by furthering awareness of their own motivations. This knowledge can highlight the student's strengths and challenges and clarify how to use and adjust them. This knowledge and understanding can assist students in better accepting and appreciating themselves, contributing significantly to their learning.

Overall, four naturally-occurring groups exist among teachers. These groups differ in how they address individual differences and how they create an environment of individual differences among the students. While the groups differ in the degree to which they apply Personalizing Instruction, two groups either *Often* or *Almost Always* support Personalizing Instruction, while two groups *Seldom* practice Personalizing Instruction. Small differences exist between the subdivisions of the two larger groups concerning the degree to which they support and practice addressing individual differences, yet they differ based on their practice of Personalizing Instruction.

6. Implications for Practice

6.1 Increasing Self-Awareness

Personalizing Instruction can facilitate students' interpersonal understanding and self-awareness. Interpersonal understanding for the student can include two of the Multiple Intelligences that Gardner (1983) referred to as Interpersonal Intelligence and Intrapersonal Intelligence. Interpersonal Intelligence is an individual's proficiency in perceiving others' moods, aims, motivations, and emotions (pp. 237–276). Intrapersonal Intelligence involves having a positive self-concept and life direction which is intrinsically grounded. It also includes having competency in knowing oneself and modifying oneself based on that knowledge (pp. 237–276). This understanding can assist them in developing, regulating, and monitoring their learning patterns. This awareness of one's own thinking patterns can help a learner become self-directed and self-regulated (Shetty, 2014, p. 43).

This approach to reflection is healthy for the individual and productive for meaningful learning (Ozturk, 2021, p.

55). By Personalizing Instruction, educators will be better able to help students with self-understanding and with making thoughtful individual choices. Coupled with the student's increased self-awareness, educators practicing Personalized Instruction can effectively help students make meaningful daily choices and develop more comprehensive learning plans.

6.2 Metacognition

Personalizing Instruction can promote metacognition. Metacognition is the study of how learners monitor and direct their learning. Metacognition is knowing about and directing one's own thinking and learning process. Flavell introduced the concept into cognitive psychology in the 1970s and emphasized self-regulatory tactics to ensure success in the learning endeavor.

Metacognition is a dialogue between the learner and his/her thought processes that results in monitoring and regulating learning. It is thus an ability to plan strategies for producing what information is needed, to be conscious of one's own steps and strategies during problem-solving, and to reflect on and evaluate the productivity of one's thinking. (Shetty, 2014, pp. 44–45)

Therefore, metacognition is the awareness of one's own thinking patterns that helps a learner become self-directed and self-regulated (Shetty, 2014, p. 43). This awareness allows students to engage in their learning consciously, reflect on their learning process, gain insights from their direct learning experiences, enhance their analytical and critical thinking, assume greater responsibility for their learning, and prepare for lifelong learning. Here, Personalizing Instruction can foster the metacognitive capabilities of all learners because metacognition is a critical ingredient to successful learning (p. 8). This knowledge can then assist students in developing, regulating, and monitoring their learning patterns related to their potential success and satisfaction with various settings and environments. This use of Personalizing Instruction can also send subtle messages to students. One of the most important is that it indicates to them that they are respected as individuals; this respect has the positive benefit of dramatically increasing the individual's sense of self-worth (Larkin-Hein & Budny, 2000, p. 13). This respect can foster more significant student self-direction, thereby increasing the motivation for learning (Rogers, 1969, p. 341). As a result, learning is an internal process that is not always visible and is a pervasive state of being rather than merely a behavior change (Kittredge, 1998, pp. 21–22).

In this metacognition process, the students can become aware of their tactic and strategy knowledge, will be able to monitor their cognition, and will be able to organize this knowledge. Thus, they will be aware of their thinking procedures and be able to change and organize their thinking. This metacognition requires awareness and high-level thinking/critical thinking and is, essentially, thinking about thinking (Ozturk, 2021, p. 55). As a result, this metacognitive approach to reflection is healthy for the individual and productive for meaningful learning. By implementing Personalizing Instruction, teachers can facilitate this metacognitive process in their students.

7. Conclusion

The primary conclusion from this study is that it is possible to describe the differences that separate the learner-centered teaching style from the teacher-centered teaching style. Using multivariate statistical procedures, the study first deductively described the process with discriminant analysis that separates these two approaches to teaching style. Then cluster analysis inductively uncovered four groups of teachers that apply this separating process to varying degrees. Notably, the groups were nearly evenly distributed, with 47.5% of the teachers supporting the separating process while 52.5% opposed it. *Personalizing Instruction is the indispensable definitive factor separating these groups.*

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