

## **A Study on the Relationship Between Teaching Style and Teaching Experiences of Professors in Higher Institutions**

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The purpose of this study was to determine the teaching styles of professors who teach adult students in selected higher institutions. It also identified whether professors' teaching styles were teacher-centered or learner-centered and examined the relationship between instructors' teaching styles and such instructor demographic variables as gender, years of teaching experience, and taught level of courses. This study used The Principles of Adult Learning Scale(PALS) (Conti,1983) to measure instructional preferences. Demographic characteristics were collected through a personal data inventory. The analysis of variance (ANOVA) and multivariate analysis of variance (MANOVA) tests were used to analyze the data. The data were examined for significance at the .05 level of confidence by means of analysis of variance. The dependent variables in this study were teaching styles of full-time professor, as represented by the seven subscores from the standardized instrument on the PALS. The seven subscores were: (1) learner-centered activities, (2) personalizing instruction, (3) relating to experience, (4) assessing student needs, (5) climate building, (6) participation in the learning process, and (7) flexibility for personal development. The study established that there was a significant difference in mean scores on the PALS between participants when examined by the number of years of teaching experiences.

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Teaching style is defined by Darkenwald and Merriam as “various identifiable sets of classroom behaviors by teachers which are consistent even though the content that is being taught may change” (1988). Malcolm Knowles (1980) stated that the behavior of the teacher probably influences the character of the learning climate more than any other single factor. An educator’s teaching style is by definition “the behavior of the teacher” which influences the character of the learning climate or environment created in the adult education classroom.

Teaching style is described as being the overall characteristics, attitudes, traits, and qualities that a teacher displays in the teaching and learning encounter (Galbraith, 1998). The goal of effective teaching is to facilitate a learner’s personal growth and development that impact the professional and social aspects of learners. Knowing one’s teaching strengths and teaching style preference and how to adapt them to maximize adult student learning should be goal of every adult educator (Carr, 1998).

According to Rita Dunn (1984), a learning style is the way people concentrate when they have something difficult to learn. The concept of learning style developed from the cognitivist theory of teaching and learning (Bonham, 1988). Bonham (1987) explained, “Learning style theories are so numerous and diverse that no single theory has come to dominate.”(p.171). According to Garcia (1992), a teaching style can be thought of as the manner in which a teacher facilitates learning. An instructor’s style reflects his/her personality and judgment about how best to facilitate learning environment. Learning is not a simple task; socioemotional factors are believed to play into the learning process, as well as personality and culture. By investigating these factors from a cognitive psychologist/educator’s point of view, perhaps one can see how learning styles, and for that matter, teaching styles relate to learner performance.

### Theoretical Rationale

Knowles (1970) stated that andragogy is the “art and science of helping adults learn.” This study was based on Knowles’ theory which proposed that teaching adults is a unique area of education that merits specialized training (Wegge, 1991). Andragogy requires a new definition of the role of the teacher in the learning-teaching relationship. Thus, in an andragogical setting the instructor is a “facilitator of knowledge” (Knowles, 1970). Brookfield (1986), Cervero and Wilson (1994), Caffarella (1994), and Houle (1996), have all suggested that andragogy can be beneficial as a teaching style for use in adult learning

environments.

Knowles (1998) further stated that whether adult educators need to provide andragogical facilitation or traditional instruction depends on the adult learners' personal autonomy and their experience with a subject matter. Rachal (2002) emphasized that the very nature of the adult in a learning setting demands, with few exceptions, andragogical or at least quasi-andragogical methods.

Brookfield (1986) suggested six principles of effective practice in facilitating adult learning. He noted that these principles apply to teaching –learning transactions or to curriculum development and instructional design activities: (1) participation in learning is voluntary; (2) effective practice is characterized by a respect among participation for each other's self-worth; (3) facilitation is collaborative; (4) praxis is placed at the heart of effective facilitation; (5) facilitation aims to foster in adults a spirit of critical reflection; (6) the aim of facilitation is the nurturing of self-directed, empowered adults (pp.9-11).

Conti (1985) developed the Principles of Adult Learning Scale, (PALS) to measure whether instructors were more teacher-centered or learner-centered in their teaching styles. He explained, "despite the existence of divergent teaching styles, a significantly large portion of adult education literature supports the collaborative mode [learner-centered] as the most effective and appropriate style for teaching adults." (Conti, 1985).

Adult educators are faced with the complex task of adjusting teaching style to learning process, often with little or no training in how to teach. Brookfield (1990) stated that flexibility can facilitate learning by better meeting the needs of the adult learners.

### Statement of Purpose

The primary purpose of this study was to determine the teaching styles of college and university professors who teach adult students. It also identified whether professors' teaching styles are teacher-centered or learner-centered and examined the relationship between instructors' teaching styles and such instructor demographic variables as gender, years of teaching experience, and taught level of courses.

### Limitations of the Study

The limitations of this study were:

1. The group studied was limited to currently teaching faculty at selected institutions.
2. The sample of teaching faculty in this study was relatively small and may not be generalizable to all professors in colleges and universities.

### Design and Variables

The analysis of variance and multivariate analysis of variance tests were used to analyze the data. The independent variables were gender of teaching faculty, years of college teaching experiences, and courses areas taught. The dependent variables were the educational orientation of the instructors as measured by the Principles of Adult Learning Scale (PALS).

## Teaching Styles

There are many prescriptions for improving instruction. One is that when teachers better know their own abilities and limitations, they are positioned to improve their classroom performance (Myers and Myers, 1988). The idea of teaching style is quite different from methods of instruction used by a teacher. Teaching style theory is closely related to learning style theory. Smith (1982) referred to teaching style as a sister to learning style.

As the contributions to the literature regarding teaching style are not aligned with the more developed learning style discussions, a definition of teaching style is necessary.

A teaching style is a set of complex behavioral preferences on the behalf of the instructor. Garcia (1982) stated teaching style as the manner in which a teacher facilitates learning. A teacher's style reflects his or her personality and judgment about how to best facilitate classroom learning. Dunn and Dunn (1979) identified teaching style as "the attitude teachers hold toward various instructional programs, methods, and resources as well as they prefer working with" (p.241). Huelsman (1983) operationally defined teaching styles as consisting "of a complex of personal attitudes, traits, and behaviors, and the media used to transmit to or receive data from the learners" (p.15).

### Teaching Style Models

There are many specific methods employed by teachers to structure learning. One

explanation for predilection in teaching style is that an educator has preference for various teaching methods to garner specified learner outcomes. Simply knowing that different methods are suggested does not guarantee that different methods are used with equal skill by an educator. There are models for assessing teaching styles as there are model for assessing learning styles.

### ***Dunn and Dunn Model***

Dunn and Dunn (1979) suggested that no teaching style or learning style is better than another, only that there are levels of appropriateness related to content and situation. Dunn and Dunn (1978) defined nine elements of teaching style by which teachers may assess themselves:

1. Education Philosophy. This involves the why of education, personal, community, and national values of education.
2. Student Preferences. Students preferences refer to the student personality types and behaviors that are important factors in how a teacher handles a class.
3. Instructional Planning. Instructional planning refers to the process of diagnosing, prescribing, and evaluating student needs.
4. Student Grouping. Students grouping refers to the way a teacher permits sociological learning to take place.
5. Room Design. This indicates how a teacher uses instructional areas to meet the needs of students.
6. Teaching Environment. The teaching environment refers to the teacher's scheduling of class activities and student mobility.
7. Teaching Characteristics. The degree of flexibility and the amount of direction and supervision given to the student by the teacher is included in this area.
8. Teaching Methods. The methods of delivery and levels of student participation are the concerns in this are.
9. Evaluation Techniques. The concern in this area is to know whether a teacher is formal or informal in the assessment of student experience. (pp.46-47)

### ***Ellis Model***

In an attempt to arrive at a description of teaching style, Ellis (1979) identified seven styles:

1. The teacher emphasizes concepts from simple to complex.
2. The teacher provides the basic structure of the class and negotiates some of it with the students.
3. The teacher selects the parameters of the subject matter and allows the students to select some of the material within the parameters.
4. The teacher seeks to participate with the feelings and ideas of the student.
5. The teacher encourages participation in group discussion and activities.
6. The teacher teaches through the scientific method of formulating and testing hypotheses.
7. The teacher encourages independent study.

There are several significant changes that higher education institutions can make to improve the learning environment for adult learners. According to Apps (1981), the first thing that should be changed is administrative procedures and rules; The second change that institutions can make is scheduling. Traditionally, the schedule is developed based on teaching faculty's convenience, and it can not meet the needs of adult students; Third, support systems should be developed to meet adult's needs; Fourth, the curriculum should be redesigned; The fifth change that can be made is financial aid; Finally, instructors should change their teaching approaches to adjust for adult students.

Especially, Apps (1981) suggested nine teaching principles when teaching adult learners:

1. Learn to know your students.
2. Use the students' experiences as class content.
3. When possible, tie theory to practice.
4. Provide a climate conducive to learning
5. Offer a variety of formats
6. Offer a variety of techniques
7. Provide students feedback on their progress.
8. Help students acquire resources.
9. Be available to students for out-of-class contacts (p.145-146).

### **The Principles of Adult Learning Scale (PALS)**

The PALS (The Principles of Adult Learning Scale) instrument is a device that measures

the various things that a teacher or trainer does when working with adult learners.

The Principles of Adult Learning Scale (PALS) instrument is a 44 item, self-reported summative rating scale from a modified Likert scale developed by Conti, 1978. It is based on the teaching and learning principles that are advanced in the adult education literature. Although a teacher-centered approach is widely practiced in adult learning, the learner-centered approach is strongly supported in the field's literature.

The PALS instrument was designed to measure several constructs in the cognitive and affective domains including (1) identification and assessment of elements involved in teaching style, and (2) evaluation of the effect that such traits have on student learning. The PALS instrument was devised by Conti (1979, 1983, 1985) to measure the extent to which practitioners support the collaborative mode of teaching-learning.

Conti stated that there are two fundamental teaching styles: the collaborative or learner-centered mode and the controlling or teacher-centered mode. According to Conti, PALS gives an indication of the teachers' preference for learner-centered or teacher-centered teaching style. The learner-centered approach incorporates the assumptions of andragogy.

A high score on the PALS's each factor have been designated to reflect a learner-centered approach to the teaching-learning transaction. While a low score on the PALS indicates a preference for the teacher-centered approach in which the authority resides with the instructor. Scores near the mean indicate a preference for mixed approach to teaching which draws elements from both the learner-centered and the teacher-centered approach. Self-reported scores on PALS have been positively correlated with the actual classroom behaviors of the teachers according to the Flanders Interaction Analysis Categories (Conti, 1983).

The Principles of Adult Learning Scale (PALS) instrument provided seven factors. Each factor contains a similar group of items that make up a major component of teaching style. The support of the collaborative mode in the adult learning literature is reflected in the names of the factor titles. The seven subscore are: (1) learner-centered activities, (2) personalizing instruction, (3) relating to experience, (4) assessing student needs, (5) climate building, (6) participation in the learning process, and (7) flexibility for personal development.

The Principles of Adult Learning Scale (PALS) instrument has been used in many investigations and studies in the field of adult education. Some studies have used PALS to identify the teacher's individual teaching styles.

## **Methodology**

Based on three independent variables and seven dependent variables, a factorial design was used in this research. Borg and Gall (1989) stated that the effect of one independent variable on the dependent variable is called a main effect; the effect of two or more independent variables on one dependent variable is called an interaction effect.

For the purpose of this study, three independent variables were investigated for their possible effects on teaching styles of teaching faculty. These variables were: (1) gender of instructors, (2) years of teaching experiences of instructors, (3) type of courses taught. The dependent variables were the seven subscores from the standardized instrument on the Principle of Adult Learning Scale (PALS). The analysis of variance (ANOVA) and multivariate analysis of variance (MANOVA) tests were initially used to analyze the relationship between the instructors' years of teaching experience and total PALS score as well as the seven factor scores of the PALS instrument.

### **Research Instrument**

This study was designed to determine the teaching styles of college and university faculty members who teach adult students using the Principle of Adult Learning Scale (PALS).

The overall PALS score can be broken down into seven factors. These factors are the basic elements that make up an adult instructor's general teaching mode. A high score in each area represent support for the concept implied in the factor name. Low scores indicate support for the opposite concept. Scores near the mean of 146 for the instrument indicate a combination of teaching behaviors that draw elements from both the learner-centered and teacher-centered approaches. Factor scores are calculated by adding up the points for each item in the factor.

### **Analysis of Data**

Frequency distributions and population percentages were calculated for demographic and descriptive data. The respondent demographics that were to collected for this research were the independent variables. These categorical independent variables were: gender of



instructors, years of teaching experiences of instructors, and the type of courses taught. The dependent variables in this study were on teaching style of full-time teaching faculty, as represented by the seven subscores from the standardized instrument on the Principle of Adult Learning Scale (PALS). The relationship between the full-time teaching professors' gender, years of teaching experiences, and the type of courses taught and the seven instrument subscores were explored by use of research questions. In general, the purpose of analysis of variance (ANOVA) was to test for significant differences between means (for groups or variables) for statistical significance.

Due to more than one dependent variable, the results were subjected to a multivariate analysis of variance (MANOVA). MANOVA was a statistical technique for determining whether several groups differ on more than one dependent variable (in this case up to seven dependent variables). The purpose of MANOVA was to determine if there are statistically significant differences between the centroids of different groups. MANOVA was quite similar to the *t*-test and to analysis of variance. MANOVA was a useful statistical technique because it helps the researcher see the data in a multivariate perspective (Borg & Gall, 1989, p.557-560). ANOVA and MANOVA tests were performed to assess the relationship between the instructors' years of teaching experience and total PALS score as well as the seven factor scores of the PALS instrument.

## **Findings and Results**

### **Data Collection**

The survey sample consisted of the 439 full-time teaching faculty of four year colleges and universities. A two part questionnaire was sent to each of these professors. Of these questionnaires, 210 of them were returned. Twelve of these returned questionnaires were determined to be non-useable because participants were not full-time teaching faculty. Eight surveys were returned long after the data had been analyzed; they were not included in the analysis. The remaining 229 respondents did not reply. A total of the 190 usable responses were received. 67.9% of the respondents were male while the remaining 32.1% were female.

Table 1. Years of Teaching Experience of Participants

Years of Teaching Experience	Number of Participants	Percent of Participants
(1) 0 – 10 years	69	36.3
(2) 11 – 20 years	62	32.6
(3) 20 – 30 years	34	17.9
(4) 30 years over	25	13.2
Total	190	100.0

Table 1 shows data concerning the years of teaching experience of the participants. Level 1 (0-10 years) was the largest group with 69 participants representing 36.3% of the sample. Level 2 (11-20 years) had 62 participants which represented 32.6% of the sample. Level 3 (20-30 years) and level 4 (30 years over) had the smallest number of participants represented 17.9% and 13.2% of the total sample respectively. This research survey indicated that most respondents had up to ten years of teaching experience. Since the demographic questionnaire did not ask where the teaching experience occurred, it is assumed that their teaching experiences came from either a college or public school setting. Some respondents volunteered detailed written descriptions of their teaching experiences on returned papers.

Table 2. Level of Courses Taught of Participants

Level of Courses Taught	Number of Participants	Percent of Participants
(1) Undergraduate only	139	73.2
(2) Graduate only	12	6.3
(3) Both Undergraduate & Graduate	39	20.5
Total	190	100.0 %

Table 2 presents data concerning the level of courses taught of participants. The most respondents have taught only undergraduate course at their college or university. The proportion of level 1 (undergraduate only) respondents 139 (73.2.9%) was slightly higher than that of level 2 (graduate only) respondents and level 3 (both undergraduate and graduate) respondents. Level 2 had the smallest number of participants represented 6.3% of the total sample.

PALS Findings

The overall scores and the seven factor scores on the PALS along with frequency distributions and population percentages were calculated for demographic and descriptive data. The mean and standard deviation of PALS scores and the seven factor scores were also determined. The analysis of variance(ANOVA ) and the multivariate analysis of variance(MANOVA) tests were performed to assess the relationship between gender, years of teaching experience of respondents, and the level of course taught and the total PALS scores as well as the seven factor scores of the PALS instrument.

The data were examined for significance at the .05 level of significance by mean of a one-way level of variance using the ANOVA procedure.

Table 3. Distribution Mean Scores by Category of Years of Teaching Experience on PALS

Years of Teaching Experience	Mean	Std. Deviation	N
(1) 0-10 years	2.6472	.2347	69
(2) 11-20 years	2.6668	.2623	62
(3) 21-30 years	2.6825	.2317	34
(4) 30 years and over	2.4964	.3074	25
Total	2.6401	.2583	190

Table 4. Analysis of Variance for Data in Table. 3

Source of Variation	Sum of Squares	Df	Mean Square	F	P
Between Groups	.625	3	.208	3.235	.023

Table 5. Tukey HSD Post Hoc for Data in Table. 4

Years of teaching experience	(1) .6472	(2) .6668	(3) .6825	(4) .4964
1 (1)		.971	.911	.053
2 (2)	.971		.992	.024
3 (3)	.911	.992		.028
4 (4)	.053	.024	.028	

There was a significant difference, at a level less than the .05 level of significance, between the mean PALS scores according to the number of years of teaching experience at colleges. In order to determine which cells were the source of variation, the Tukey HSD for Unequal Sample Sizes was performed.

Looking at row 2, column 4, an interaction can be found between groups 2 and groups 4 at the .024 level. Group two consists of professors who have been teaching for 11 to 20 years, and group 4 consists of professors who have been teaching for 30 over years. The mean for group two is 2.6668, and the mean for group four is 2.4964. The higher the mean score on PALS, the more collaborative the instructor's teaching-learning transaction. Therefore, it can be concluded that professors who have been teaching 11 to 20 years are more collaborative or learner-centered mode than professors who have been teaching 30 years over.

The interaction, which is displayed in row 3, column 4, is significant at .028. It is an interaction between group 3 and group 4. Group three is comprised of professors who have taught between 20-30 years and group four is professors who have taught 30 years over. The mean for group three is 2.6825 (see Table 3), and the mean for group four is 2.4964 (see Table 3). The greater the mean, the more collaborative the instructor's teaching-learning transaction. Therefore, the professors who have taught 20-30 years are more collaborative or learner-centered mode than professors who have taught 30 years over. Because of the high level of confidence ( $p=.023$ ), that significance exists between the length of teaching experience and the professor's collaborative stance.

This study used fixed factors. The first factor, gender of the subjects had two levels: male and female. The second factors, years of teaching experience had four levels: (0-10 years), (11-20years), (21-30 years) and (30 years and over). The third factor, the different course taught had three levels: undergraduate only, graduate only and both undergraduate and graduate. The dependent variables were the seven subscores on the PALS as completed by full- time professors.

As stated previously, the Principles of Adult Learning Scale(PALS) consists of seven subscales. For purpose of this study, the researcher has treated each of the subscales as a dependent variable. Therefore, a multivariate analysis of variance was utilized to explore the overall main effects and interactions of the independent variables in the data. It is important to note, that when looking the seven dimensional MANOVA model, the significance for the main effects are usually difficulty to analyze and interpret. Basically,

many variables are confounding one another that it is nearly impossible to sort out how one variable influences another.

## **Conclusion and Recommendations**

The purpose of this study was to survey the teaching styles of college and university faculty members who teach adult students. This survey has provided data about current trends in professors' teaching styles of higher institutions. Specifically, the survey and analysis determined if there are any significant differences in professors' teaching style based on the gender, their years of teaching experience, type of course they teach.

Surveys were sent to 439 professors, and 190 were included in the analysis of data which generated a return rate of 43.3%. The categorical independent variables were gender, years of teaching experiences, and level of course taught. The seven dependent variables from the Principle of Adult Learning Scale (PALS) provided interval data: (1) learner-centered activities, (2) personalizing instruction, (3) relating to experience, (4) assessing student needs, (5) climate building, (6) participation in the learning process, and (7) flexibility for personal development.

### **Findings and Conclusions**

According to Knowles (1970) and Darkenwald & Merriam (1982), there is growing body of research being done which examines the differences between teaching adult and pre-adults. All these adult educators believe that many of these adult continuing education specialists with very little training in how to teach adult learners. Many of these instructors continue to use the pedagogical model of instruction. However, the andragogical model still represents the best way to teach adults, especially when adult education is compared to youth education. The survey questionnaire represents the basic assumptions that make up the philosophical foundation of the andragogical model and collaborative mode of instruction. High mean scores in the majority of the seven factors indicated that full-time teaching faculty adopted the andragogical model in adult education. However, the low mean scores in factors confirmed Knowles et al.'s 1998 research. According to their views, whether adult learning professional need to provide andragogical facilitation or traditional

instruction depends on adult learners' personal experience with a subject matter.

### Years of Teaching Experience

There was a significant difference the mean score of PALS and the number of years of teaching experience at colleges. As shown by this research and analysis, full-time professors who have been teaching for 0-10 years, 11-20 years and 21-30 years scored higher than those who have been teaching for 30 years and over. Conti(1983) stated there were two fundamental teaching styles: the collaborative or learner-centered and the controlling or teacher-centered mode. The learner-centered approach incorporates the assumptions of andragogy. According to Conti, a high score on the PALS have been designated to reflect a learner-centered approach to the teaching-learning transaction. While a low score on the PALS indicates a preference for teacher-centered approach in which the authority resides with the instructors. Therefore, this seems to indicate that professors who have been teaching for 30 years and over supported a teacher-centered approach to teaching. Years of teaching experience were influenced the overall outcome on the Principles of Adult Learning Scale.

Based on the above findings, the following conclusions were reached:

(1) College full-time professors who have been teaching for 0-30 years were significantly more collaborative teaching mode than professors who have been teaching for 30 years and over. Therefore, this seems to indicate that professors who have been teaching for 30 years and over supported a teacher-centered approach to teaching. The number of years of teaching experience has taught influences his/her teaching stance.

(2) There was a significant difference for interaction of different level of courses taught by gender on participation in the learning process. The females tended to score higher than the males. Therefore, female professors who have taught undergraduate courses were more collaborative or learner-centered mode than male. However, there was no significant difference for interaction of different genders by years of teaching experience.

There were no noticeable differences between any of the other independent variables. Gender, educational background regarding adult learning, degree obtained, graduation from Christian colleges and universities, different gender by years of teaching experience, level of taught courses were all not significant factors.

## Recommendations

There are other issues yet to be resolved. Based on the findings of this study, the following recommendations for additional research offered:

(1) The experimental variables of gender, years of teaching experience, and level course taught were used in the general linear model of this study. It is recommended that other experimental variables such as age, class size, and type of institutional setting be investigated.

(2) The research population was limited to full-time teaching faculty members in colleges and universities. Results cannot be generalized beyond this population. Studies utilizing different populations in other adult educational settings should be conducted to determine if results are similar.

(3) Conduct additional research with the Principle of Adult Learning Scale (PALS) instrument using academic rank, years of teaching experience, class size, and age across additional academic department

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