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By Gary J. Conti

Assessing teaching style in adult education: How and why

Introduction

Recent sessions at the National Adult Education Conference, Commission on Adult Basic Eduction Conference, and Adult Education Research Conference indicate a growing interest among practitioners and researchers in the area of teaching style. While past emphasis has been on the characteristics of the adult education teacher (e.g., Mocker, 1974), the current focus is on the actual behavior that the teacher demonstrates in the classroom. These "distinctive qualities of behavior that are consistent through time and carry over from situation to situation" (Fischer & Fischer, 1979, p. 245) are referred to as teaching style. Style is a pervasive quality that persists even though the content that is being taught may change. A variety of terms and behavior have been identified and labeled as teaching styles (Dunn & Dunn, 1979; Fischer & Fischer, 1979). While behaviors in each style are not mutually exclusive, each style emphasizes a dominant mode of the teacher. This teaching style label is a hypothetical construct which is associated with various identifiable sets of teacher behavior and which is a useful tool "to understand and perhaps explain certain important aspects of the teaching-learning process" (Fischer & Fischer, 1979, p. 254).

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Teachers display a wide variety of behaviors in the classroom. These differences in classroom practices have been referred to by terms such as initiating and responsive behavior (Flanders, 1970), progressivism and traditionalism (Bennett, 1976; Kerlinger & Pedhazur, 1968), and andragogy and pedagogy (Knowles, 1970). Despite the existence of divergent teaching styles, a significantly large portion of the adult education literature supports the collaborative mode as the most effective and appropriate style for teaching adults. The collaborative mode refers to a learner-centered method of instruction in which authority for curriculum formation is jointly shared by the learner and the practitioner. Key contributers to the adult education literature address this concept and the elements that operationalize the collaborative mode. Strong arguments can be found in the literature to support the concepts that (a) the curriculum should be learner-centered, (b) learning activities should be related to the learner's experiences, (c) adults are self-directed, (d) the learner should be involved in entrance and exit assessments, (e) adults are problem-centered, and (f) the teacher should function as a facilitator.

The Collaborative Mode

The collaborative mode is a process-oriented approach to teaching. The emphasis is upon what the learner is doing. The teacher's primary task is to organize and maintain an environment which facilitates student learning. In this way adult education is a cooperative venture in which the learner is a full partner (Bergevin, 1967, p. 168). It is assumed in this venture that adults are seeking increased self-direction (Knowles, 1970, p. 39) and that they have the inherent ability to control their own lives (Freire, 1970). The curriculum is built around the particular problems and life situations of the learners rather than around a predetermined set of subjects for the classification of knowledge (Lindeman, 1926/1961, p. 6). Its content is problem-centered with subjects used as examples and vehicles of learning. Adult education, thus, occurs within the democratic process (Bergevin, 1967, p. 35) as the learners take responsibility for their own learning (Kidd, 1976).

The collaborative mode depends on active student participation. The learner is involved in needs diagnosis, goals formation, and outcomes evaluation. To achieve this, the student's experiences are utilized. Learning activities are related to life experiences to help students become more aware of significant events in their lives (Lindeman, 1926/1961, p. 109). Experiences serve as a constantly growing resource for learning (Knowles, 1970, p. 39) and can stimulate adult engagement in learning (Kidd, 1976, p. 271).

Major figures argue a forceful and comprehensive case in favor of the collaborative mode. Their conclusions are based upon the findings of psychology and adult learning. Yet, questions remain; are adults taught differently than children, and does teaching style make any difference? Recent studies have attempted to address these questions. Beder and Darkenwald (1982) found that those who teach both adults and children or pre-adults teach them differently. Most of the variance in this study was associated with the teacher's perceptions related to learner characteristics such as intellectual curiosity, openness, and degree of self-direction (p. 153). In a check on the predictive validity of the Principles of Adult Learning Scale, Conti found that a group of 80 secondary education teachers in Texas scored 1.67 standard deviations below the average for adult educators on the instrument. This group overwhelmingly supported a teacher-centered approach to education. Both of these studies indicate a distinct difference in the teacher's behavior in the adult setting.

Teaching style can affect student achievement. The relationship of teaching style to student achievement was investigated in an adult basic education program in southern Texas (Conti, 1984b). The teaching style of 29 part-time teachers was assessed with the Principles of Adult Learning Scale, and the achievement of their 837 students was analyzed. Analysis of covariance indicated that the teacher's style had a significant influence on the amount of student academic gain. Contrary to the adult education literature base, students of the teacher-centered instructors showed the greatest gains. However, the results changed when the total hours of student attendance were controlled. In this situation, the students of the collaborative, learner-centered instructors achieved the most.

These conflicting results stimulated an analysis of the data which was broken down by the three types of classes in the program. In addition to having basic level classes, the program also offered preparatory courses for the General Educational Development (GED) test and courses in English as a Second Language (ESL). A significant interaction was found between teaching style and the nature of the course. The teacher-centered approach was the most effective in the GED class. On the other hand, the learner-centered approach helped students learn more in the basic level and the ESL class settings. This study adds situational specificity to the adult education literature. Instead of broadly stating that the collaborative mode is the most effective approach for all students in an adult basic education setting, it indicates that the goals of the learner need to be considered. For the GED student whose sights are clearly set on the short-term task of passing the predefined GED examination, a teacher-centered approach is efficient. However, basic level and ESL students are concerned with the long-term process of acquiring skills related to reading, mathematics, and English proficiency. This process involves the student's self-concept, and the teachers can play a crucial role in developing a supportive environment in which the learners can take risks, experiment with their new learning, and discover things about themselves (Fellenz, 1982, p. 82). These findings switch the general argument from a combative stance of which style is best to a more practical position of when is each style most appropriate.

Assessing Teaching Style

While researchers are probing for a better understanding of the effectiveness of different teaching styles in various settings, the individual practitioner is ultimately responsible for improving the delivery of services to the adult learner. In order to relate to the teaching style research, to internalize its findings, and to make decisions for future practice and staff development, instructors must be able to assess their own teaching style. A variety of factors will influence a teacher's personal style. Educational philosophy will be a critical factor. Also, increased support of the collaborative mode is noticeable with additional academic training and with increased age (Conti, 1984a; Pearson, 1980). Experiential background may also influence style. A knowledge of one's own style can allow the teacher to better understand how each of these has contributed to his/her overall behavior in the classroom. It can also identify areas of strength and areas of future development. Elias and Merriam (1980) have suggested that the difference between those who are just practicing a profession and professionals is an awareness of the causal factors behind their basic behavior (p. 9). Therefore, the assessment of teaching style can be an important step in the development of a professional teacher.

Practitioners can assess their teaching style with the Principles of Adult Learning Scale (PALS). This 44-item instrument is a summative rating scale using a modified Likert scale. Respondents indicate the frequency with which they practice the action described in the items. Scores may range from 0 to 220. The mean for the instrument is 146 with a standard deviation of 20. These normative scores for PALS remain consistent across various groups that practice adult education (Conti, 1983). This instrument can be completed in approximately 10 to 15 minutes and can be self-scored (see Figure 1).

PALS is based on the principles that are advanced in the adult education literature (Conti, 1978, 1979, 1982). The total score on PALS gives an indication of a practitioner's overall preference for teaching behavior in an adult education setting. Since the literature supports the collaborative teaching-learning mode in which authority for curriculum formation is shared by the learner and the practitioner, high scores on PALS have been designated to reflect a learner-centered approach to the teaching-learning transaction. A low score on PALS indicates a preference for the teacher-centered approach in which authority resides with the instructor. Scores near the mean indicate a combination of teaching behaviors which draw elements from both the learner-centered and the teacher-centered approach. Thus the score indicates the overall teaching style and the strength of teacher support for this style.

Experiential evidence from counseling with practitioners after taking the PALS indicates that scores near the mean reflect the practice of conflicting behaviors. While these teachers practice some actions that are congruent with one mode, others are antithetical. Although some seek to argue that this indicates an eclectic approach to diverse classroom situations, an analysis of the factors making up the scale often uncovers basic conflicts in the practitioner's classroom behavior. Such conflicts can send confusing messages to students, undermine the student's ability to predict teacher actions, and demonstrate the lack of a comprehensive understanding of an educational philosophy as an organizing force for a personal credo to direct classroom behaviors.

Factors in PALS

The overall PALS score can be broken down into seven factors. These factors are the basic elements that make up an instructor's general teaching mode. The support of the collaborative mode in the adult education literature is reflected in the factor titles. High scores in each area represent support for the concept implied in the factor name. Low scores indicate support of the opposite concept. For example, a high score on the first factor indicates a learner-centered approach to teaching; a low score represents support of a teacher-centered approach. Factor scores are calculated by adding up the points for each item in the factor (see Figure 2).

The main factor in PALS is Learner-Centered Activities. This factor is made up of 12 of the negative items in the instrument. These items relate to evaluation by formal tests and a comparison of students to outside standards. Those who support a teacher-centered mode favor formal testing over informal evaluation techniques and rely heavily on standardized tests. They encourage students to accept middle-class values. They exercise control of the classroom by assigning quiet deskwork, by using disciplinary action when needed, and by determining the educational objectives for each student. They tend to practice one basic teaching method and support the conviction that most adults have a similar style of learning. However, those who support the collaborative mode reject these teacher-centered behaviors. Their opposition to these items implies that they practice behaviors which allow initiating action by the student and which encourage students to take responsibility for their own learning. The classroom focus is then upon the learner and learner-centered activities.

Factor 2 is Personalizing Instruction. This factor contains six positive items and three negative items. Teachers who score high on this factor do a variety of things that personalize learning to meet the unique needs of each student. Objectives are based on individual motives and abilities. Instruction is self-paced.

Figure 1
Principles of Adult Learning Scale

Directions: The following survey contains several things that a teacher of adults might do in a classroom. You may personally find some of them desirable and find others undesirable. For each item please respond to the way you most frequently practice the action described in the item. Your choices are Always, Almost Always, Often, Seldom, Almost Never, and Never. On your answer sheet, circle 0 if you always do the event; circle number 1 if you almost always do the event; circle number 2 if you often do the event; circle number 3 if you seldom do the event; circle number 4 if you almost never do the event; and circle number 5 if you never do the event. If the item *does not apply* to you, circle number 5 for never.

Always	Almost Always	Often	Seldom	Almost Never	Never
0	1	2	3	4	5

1. I allow students to participate in developing the criteria for evaluating their performance in class.
2. I use disciplinary action when it is needed.
3. I allow older students more time to complete assignments when they need it.
4. I encourage students to adopt middle class values.
5. I help students diagnose the gaps between their goals and their present level of performance.
6. I provide knowledge rather than serve as a resource person.,
7. I stick to the instructional objectives that I write at the beginning of a program.
8. I participate in the informal counseling of students.
9. I use lecturing as the best method for presenting my subject material to adult students.
10. I arrange the classroom so that it is easy for students to interact.
11. I determine the educational objectives for each of my students.
12. I plan units which differ as widely as possible from my students' socio-economic backgrounds.
13. I get a student to motivate himself/herself by confronting him/her in the presence of classmates during group discussions.
14. I plan learning episodes to take into account my students' prior experiences.
15. I allow students to participate in making decisions about the topics that will be covered in class.
16. I use one basic teaching method because I have found that most adults have a similar style of learning.
17. I use different techniques depending on the students being taught.
18. I encourage dialogue among my students.
19. I use written tests to assess the degree of academic growth rather than to indicate new directions for learning.
20. I utilize the many competencies that most adults already possess to achieve educational objectives.
21. I use what history has proven that adults need to learn as my chief criteria for planning learning episodes.
22. I accept errors as a natural part of the learning process.
23. I have individual conferences to help students identify their educational needs.
24. 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.
25. I help my students develop short-range as well as long-range objectives.
26. I maintain a well-disciplined classroom to reduce interferences to learning.
27. I avoid discussion of controversial subjects that involve value judgements.
28. I allow my students to take periodic breaks during class.
29. I use methods that foster quiet, productive deskwork.
30. I use tests as my chief method of evaluating students.
31. I plan activities that will encourage each student's growth from dependence on others to greater independence.

32. I gear my instructional objectives to match the individual abilities and needs of the students.
33. I avoid issues that relate to the student's concept of himself/herself.
34. I encourage my students to ask questions about the nature of their society.
35. I allow a student's motives for participating in continuing education to be a major determinant in the planning of learning objectives.
36. I have my students identify their own problems that need to be solved.
37. I give all students in my class the same assignment on a given topic.
38. I use materials that were originally designed for students in elementary and secondary schools.
39. I organize adult learning episodes according to the problems that my students encounter in everyday life.
40. I measure a student's long term educational growth by comparing his/her total achievement in class to his/her expected performance as measured by national norms from standardized tests.
41. I encourage competition among my students.
42. I use different materials with different students.
43. I help students relate new learning to their prior experiences.
44. I teach units about problems of everyday living.

Various methods, materials, and assignments are utilized. Lecturing is viewed as a poor method for presenting subject material to the adult learner. Cooperation rather than competition is encouraged.

Factor 3 is Relating to Experience and consists of six positive items. Teachers who support this factor plan learning activities that take into account their student's prior experiences and encourage students to relate their new learning to experiences. To make learning relevant, learning episodes are organized according to the problems that the students encounter in everyday living. However, this focus is not just on coping with current problems or accepting the values of others. Instead, students are encouraged to ask basic questions about the nature of their society. When it is screened through experience, such consciousness-raising questioning can foster a student's growth from dependence on others to greater independence.

Factor 4 is made up of four positive items related to Assessing Student Needs. For those teachers who score high in this area, treating a student as an adult is finding out what each student wants and needs to know. This is accomplished through a heavy reliance on individual conferences and informal counseling. Existing gaps between a student's goals and the present levels of performance are diagnosed. Then students are assisted in developing short-range as well as long-range objectives.

Factor 5 is Climate Building, and it also contains four positive items. Knowles (1970) lists setting a friendly and informal climate as the first step in his andragogical model (p. 41). Dialogue and interaction with other students are encouraged. Periodic breaks are taken. Barriers are eliminated by utilizing the numerous competencies that adults already possess as building blocks for educational objectives. Risk taking is encouraged, and errors are accepted as a natural part of the learning process. Such an environment is a microcosm of the total society. In it learners can experiment and explore elements related to their self-concept, practice problem-solving skills, and develop interpersonal skills. Failures serve as a feedback device to direct future positive learning.

The four positive items in Factor 6 relate to Participation in the Learning Process. While Factor 1 focuses on the broad location of authority within the classroom, this factor specifically addresses the amount of involvement of the student in determining the nature and evaluation of the content material. Those who score high in this area have the students identify the problems that they wish to solve and allow the students to participate in making decisions about the topics that will be covered in class. Encouraging an adult-to-adult relationship between teacher and students, they also involve the students in developing the criteria for evaluating classroom performance.

Factor 7 contains five negative items which do not foster Flexibility for Personal Development. Those who oppose the collaborative mode view themselves as providers of knowledge rather than facilitators. They determine the objectives for the students at the beginning of the program and stick to them regardless of the idiosyncrasies that may arise from divergent student needs to situations. A well-disciplined classroom is viewed as a stimulus for learning. Discussions of controversial subjects that involve value judgments or of issues that relate to a student's self-concept are avoided. Supporters of the collaborative mode reject this rigidity and lack of sensitivity to the individual. They view personal fulfillment as a central aim of education. To accomplish this, flexibility is maintained by adjusting the classroom environment and curricular content to meet the changing needs of the students, and issues that relate to values are addressed in order to stimulate understanding and future personal growth.

Conclusion

Through an analysis of these seven factors a teacher can gain a clearer understanding of his/her classroom behavior. This analysis should also reveal that the philosophical roots of the collaborative mode lie in humanism and progressivism. Humanism assumes that man is naturally good, that the potential for individual growth is unlimited, that behavior is the result of personal perceptions, and that each individual has a unique self. Human beings are proactive. They can influence and take responsibility for their actions (Elias & Merriam, 1980, pp. 115-121). By utilizing trust, adult educators can help students move in the direction of freedom and dignity. Progressivism views education as having a dual function. In addition to promoting individual growth, its aim is to maintain and/or promote the good of society (Darkenwald & Merriam, 1982, p. 50). Democracy, freedom, experience, responsibility, and participation are key words for progressives. Each of the titles of the seven factors indicates elements that operationalize these philosophies.

Actions antithetical to the collaborative mode are compatible with the behaviorist position that:

Figure 2
Scoring PALS

Positive Items

Items number 1, 3, 5, 8, 10, 14, 15, 17, 18, 20, 22, 23, 24, 25, 28, 31, 32, 34, 35, 36, 39, 42, 43, and 44 are positive items. For positive items, the following values are assigned: Always = 5, Almost Always = 4, Often = 3, Seldom = 2, Almost Never = 1, and Never = 0.

Negative Items

Items number 2, 4, 6, 7, 9, 11, 12, 13, 16, 19, 21, 26, 27, 29, 30, 33, 37, 38, 40, and 41 are negative items. For negative items, the following values are assigned: Always = 0, Almost Always = 1, Often = 2, Seldom = 3, Almost Never = 4, and Never = 5.

Missing Items

Omitted items are assigned a neutral value of 2.5.

Factor 1

Factor 1 contains items number 2, 4, 11, 12, 13, 16, 19, 21, 29, 30, 38, and 40.

Factor 2

Factor 2 contains items 3, 9, 17, 24, 32, 35, 37, 41, and 42.

Factor 3

Factor 3 contains items 14, 31, 34, 39, 43, and 44.

Factor 4

Factor 4 contains items 5, 8, 23, and 25.

Factor 5

Factor 5 contains items 18, 20, 22, and 28.

Factor 6

Factor 6 contains items 1, 10, 15, and 36.

Factor 7

Factor 7 contains items 6, 7, 26, 27, and 33.

Computing Scores

An individual's total score on the instrument is calculated by summing the value of the responses to all items. Factor scores are calculated by summing the value of the responses for each item in the factor.

Factor Score Values

Factor	Mean	Standard Deviation
1	38	8.3
2	31	6.8
3	21	4.9
4	14	3.6
5	16	3.0
6	13	3.5
7	13	3.9

> humans are controlled by their environment, the conditions of which can be studied, specified and manipulated. An individual's behavior is determined by the events experienced in an objective environment. (Elias & Merriam, 1980, p. 83)

In this teacher-centered view, the instructor has a responsibility for determining and reinforcing the fundamental values necessary for the survival of the individual and the society (p. 86). Although the students play an active role, the teacher is a "contingency manager, an environmental controller, or behavioral engineer who plans in detail the conditions necessary to bring about desired behavior" (p. 88). The teacher actions which are not congruent with the factor titles can be associated with this philosophy.

The assumptions of humanism and progressivism underpinning the collaborative mode are obviously different from those of behaviorism which can be associated with the noncollaborative mode. The assumptions within each school are related and are supportive of each other. Collectively they form a synergistic whole which is referred to as a philosophy. When this philosophy serves as a guide, the numerous classroom behaviors of the teacher are consistent. Although these behaviors may vary somewhat due to the teacher's degree of commitment to the philosophy, to the situation, or to institutional restraints, any variance should be within a small range. When the teaching behaviors vary beyond this range, it is likely that the teacher does not have a firm commitment to a definitive teaching style. This indicates a lack of an appreciation of the correlation of the assumptions within a basic approach to teaching and thereby leads to a violation of some of these assumptions. Worse yet, it may signal either that the teacher has no understanding of the philosophical assumptions at work in the educational process or that the teacher does not recognize the inherent contradictions in his/her teaching behaviors.

Knowles (1970) has suggested that the teacher is the most important variable influencing the nature of the learning climate (p. 41). If those entrusted with this crucial position are to function as professionals, they must be aware of what they do and why they do it. Self-assessment can be a professional development technique to accomplish this. The Principles of Adult Learning Scale offers a quick and reliable means of doing such an assessment. In addition to identifying a general teaching style, it produces scores in seven factors which operationalize the general teaching style. By analyzing these factor scores, the teacher can identify specific teaching behaviors and can take steps to learn about and make decisions about modifying inconsistent behaviors (Conti, 1984a). Although all teachers of adults may not decide to support the collaborative mode which is suggested in the literature, they will be able to adopt a personal credo which contains internally compatible assumptions and which communicates consistent patterns of teacher behavior to expectant students. **AAACE**

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Women Professor

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Teaching Style

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Good Practice

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guished adult educators, while advocating self-directed learning for adults, are really selling us out to the experts of pedagogy who have been putting out puerile lists of stipulations like *Principles* for over half a century. We deserve better.

At a recent adult education conference, an experienced Francophone continuing education administrator from Quebec who had taken up full-time graduate work was sharing with colleagues the excitement she felt about her research and theoretical studies. However, she added that she is appalled by the way so much of adult education literature "infantilizes" adults. It turns out there is no such word as "infantilize" in the English lexicon, but it is clear what our Francophone colleague means by the term. A great deal of effort has gone into producing the *Principles* document, but it serves to "infantilize" us.

Surely, adult educators have moved beyond the need for prodding by long lists of formal stipulations (whether we want to call them standards, or criteria, or principles). Such stipulations to guide the experts—or "providers"—of adult continuing education imply that adults are not capable of making relevant decisions about the direction and nature of their own learning experiences. *As the kind of approach to professionalization characterized by Principles gains ascendancy, the possibilities for self-directed learning, and adulthood itself, surely decline.* This is not the way to lay out the parameters of a vocation. **AAACE**

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variety of areas important for teachers of adults in a wide range of continuing education programs. The first two chapters stress the priority of teacher self-understanding as an initial step in developing appropriate teaching styles. In Chapter One, Gary J. Conti describes a means for teachers to gain more insight about elements of their own teaching style and describes research that explores the effectiveness of various styles given different student and contextual variables. In Chapter Two, Jerold W. Apps presents an approach that teachers can use to clarify the values and assumptions that underlie their instructional practices.

In the next chapters, the focus shifts to the potential significance of various aspects of the teaching-learning situation. In Chapter Three, L. Adrianne Bonham discusses learning style as a factor to consider in selecting appropriate teaching strategies. Barbara M. Florini provides an overview of new communications technology in Chapter Four and identifies ways to successfully integrate these new resources into the instructional process. Chapter Five explores the implications of current perspectives on women as learners and describes feminist pedagogy as an alternative instructional model.

The last chapters pull together varied elements and ideas. Gordon G. Darkenwald introduces the concept of classroom social environment in Chapter Six and describes the role of the teacher in shaping an optimal environment for adult learners. Daniel D. Pratt provides an overview in Chapter Seven of several views of teacher competence, suggesting that multiple perspectives may be a valuable means to broaden our understanding of effective teaching. The final chapter identifies resources to further assist both beginning and experienced teachers in efforts to enhance their instructional practices with adult students.

Elisabeth Hayes
Editor

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How can continuing educators identify effective teaching styles?

Assessing Teaching Style in Continuing Education

Gary J. Conti

The teaching-learning transaction is a dynamic venture in which bot
the teacher and learner are active participants. While much attention i
adult education has focused on the learner side of this transaction, it
difficult to dispute Knowles's (1970, p. 41) long-standing assertion th
"the behavior of the teacher probably influences the character of th
learning climate more than any other single factor." A growing body
research is developing that supports the beliefs of most who have taugh
adults that the way the teacher approaches the learning situation mak
a difference in the way students learn. The overall traits and qualiti
that a teacher displays in the classroom and that are consistent for variou
situations can be described as *teaching style.* A knowledge of teachin
style can make a difference in how teachers organize their classroom
how they deal with learners, and how well their students do in learnin
the content of the continuing education class.

Although there has been a great deal of interest among educato
about the concept of teaching style during the past decade, there ha
been very little agreement about what actually constitutes teaching styl
Most who discuss the concept avoid defining teaching style. Instead
they tend to talk about the elements that make up a teacher's styl
Many focus on teaching style as an external teacher characteristic tha

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an be manipulated in reaction to student behaviors. Some in this roup hold that teaching style is related to how the teacher learned but hat it can be modified if the instructor understands how to respond to aried student learning styles (Dunn and Dunn, 1979). Others view eaching style as a set of models from which various teacher behaviors an be selected based upon the types of student outcomes that are esired (Ellis, 1979). Still others link teaching style with learning style. This group ranges from those who narrowly restrict their considerations f learning style to cognitive style (Kuchinskas, 1979) to those who elieve that "each dimension (of teaching style) is directly comparable to an equivalent dimension on Learning Styles" (Canfield and Canfield, 1976, p. 1).

Those who support this concept of teaching style as a student-driven phenomenon have two common concerns. First, much of their attention is directed toward seeking the best possible match between learning styles and teaching styles. Second, they tend to equate teaching style with teaching methods and strategies. A better knowledge of teaching style is sought so that style, methods, or strategies can be adjusted to better meet the needs of the learners.

An alternative view conceptualizes teaching style as defined by the internal qualities of the teacher that affect classroom behaviors. The teacher enters the teaching-learning transaction with a definite set of values (Brookfield, 1986). These values influence the teacher's beliefs about such things as the nature of the learner, the purpose of the curriculum, and the role of the teacher (Darkenwald and Merriam, 1982). While a teacher may vary teaching techniques from day to day or from activity to activity in order to accomplish specific learning goals for a specific content area or situation, the beliefs remain relatively stable over the period in which a teacher interacts with a group of learners. The philosophical beliefs are translated into action in the classroom through the teacher's individual teaching style.

Thus, in this perspective, teaching style is differentiated from methods (Fischer and Fischer, 1979). Instead, teaching style might best be viewed as a range of behaviors in which the teacher can operate comfortably according to a certain value system. Specific contexts and learning materials require certain kinds of responses. While personal philosophy provides an overall basis for decisions about appropriate actions, the teacher's behavior will vary in addressing each of these unique classroom situations. The amount of this variance will be limited by tenets of the teacher's educational philosophy and by the strength to which the teacher adheres to that educational philosophy. The way in which the teacher consistently functions within this range defines the teacher's teaching style.

Teaching Style in Adult Education

While a number of ways exist to conceptualize teaching style in this more global manner, much theory and research suggests that there are two fundamental teaching styles: a responsive, collaborative, learner-centered mode and a controlling, teacher-centered mode. A large portion of the literature in the field of adult education supports a collaborative mode as the most effective and appropriate style for teaching adults. Several common themes supporting the collaborative mode can be traced from seminal works in the field by such authors as Eduard Lindeman ([1926] 1961) to current award-winning books by such authors as Stephen Brookfield (1986) and Laurent Daloz (1987). Collectively, these works point out that the key word for working successfully with adults is *participation*. Ideally the learner should be an active participant in a learning activity that is a cooperative venture. One way to engage learners in these activities is through the use of their experience. Adults have a rich reservoir of experiences that are intense in scope and that provide them with a background for evaluating new situations, relationships, and content. Continuing education activities can provide either a mechanism for gaining a better understanding of their experiences or an opportunity to apply their experiences to new learning.

To a great extent, adults learn about things to solve the particular problems they face in life. By being active in the learning process and by relating their experiences to the problem under study, they are able to take responsibility for their own learning. To solve problems, adults must have more than knowledge. In terms of educational objectives (Bloom, Krathwohl, and Masia, 1973), they must be able to apply, analyze, synthesize, and evaluate the material being learned. These higher-level cognitive skills can only be achieved by actively involving the learner in the learning process.

The role of the teacher in this process is to organize and maintain an environment that facilitates student learning. The teacher brings ideas, values, and experiences to the learning transaction and is charged with the task of drawing ideas, opinions, and values out of learners. In this transaction, teacher and learners are mutual partners. Thus, the collaborative mode as professed in the adult education literature is a learner-centered approach to education. The emphases are upon what the learner is doing and upon how the teacher is facilitating that process. The curriculum is problem centered, and the entire process is very democratic.

Although the adult education literature supports the collaborative mode as the most appropriate way to teach adults, many adult educators do not totally accept or utilize this approach. While these major tenets are based upon "at least three reasonably cogent foundations: informed professional opinion; philosophical assumptions associated with humanistic psychology and progressive education; and a growing body of research and theory on adult learning, development, and socialization" (Beder and Darkenwald, 1982, p. 143), they are general in nature and do not take into consideration the unique situations in which many adult educators find themselves. Do these findings apply equally to adult educators who are conducting training in business and industry, to those who are doing continuing professional education, or to teachers who are instructing in the military?

They probably do not, because the teaching situation is influenced by four interacting variables: the nature of the learner, the teacher, the situation, and the content. Both the learners and the teacher have different needs and styles. Situational factors, such as the mission of the sponsoring agency, the available facilities, and the allotted time, regulate what can be done. Finally, different types of content require different strategies for teaching them effectively. These four elements interact in different ways and in different proportions for each teaching situation. Consequently, teachers cannot blindly accept the major tenets of the literature. Instead, they must enhance their self-knowledge so that they can be proactive in interacting with the other three variables. An important step in understanding themselves as teachers is assessing their personal teaching style.

Assessing Teaching Style

One instrument that has been used widely to assess teaching style in adult education is the Principles of Adult Learning Scale (PALS). This forty-four-item instrument uses a modified Likert scale (see Figure 1), it can be completed in less than fifteen minutes, and it can be self-scored. To assess their style, teachers indicate the frequency with which they practice the actions described in the items. These items represent actual classroom behaviors. The PALS score is determined by adding the value for each response (see Figure 2).

The PALS is based upon principles that are advanced in the adult education literature. The total score on the PALS gives an indication of the teacher's overall preference for a learner-centered or teacher-centered teaching style in an adult education setting. In the learner-centered approach, the authority for curriculum formation is shared by the learner and the teacher. In the teacher-centered approach, authority resides with the teacher. High scores on the PALS reflect a learner-centered approach to the teaching-learning transaction. Low scores on PALS reflect a preference for the teacher-centered approach. Scores near the mean of 146 for the instrument indicate a combination of teaching behaviors that draws elements from both the learner-centered and the teacher-centered

Figure 1. Principles of Adult Learning Scale (PALS)

Directions: The following survey contains several things that a teacher of adults might do in a classroom. You may personally find some of them desirable and find others undesirable. For each item please respond to the way you most frequently practice the action described in the item. Your choices are Always, Almost Always, Often, Seldom, Almost Never, and Never. On your answer sheet, circle 0 if you always do the event; circle number 1 if you almost always do the event; circle number 2 if you often do the event; circle number 3 if you seldom do the event; circle number 4 if you almost never do the event; and circle number 5 if you never do the event. If the item *does not apply* to you, circle number 5 for never.

Always	Almost Always	Often	Seldom	Almost Never	Never
0	1	2	3	4	5

1. I allow students to participate in developing the criteria for evaluating their performance in class.
2. I use disciplinary action when it is needed.
3. I allow older students more time to complete assignments when they need it.
4. I encourage students to adopt middle class values.
5. I help students diagnose the gaps between their goals and their present level of performance.
6. I provide knowledge rather than serve as a resource person.
7. I stick to the instructional objectives that I write at the beginning of a program.
8. I participate in the informal counseling of students.
9. I use lecturing as the best method for presenting my subject material to adult students.
10. I arrange the classroom so that it is easy for students to interact.
11. I determine the educational objectives for each of my students.
12. I plan units which differ as widely as possible from my students' socio-economic backgrounds.
13. I get a student to motivate himself/herself by confronting him/her in the presence of classmates during group discussions.
14. I plan learning episodes to take into account my students' prior experiences.
15. I allow students to participate in making decisions about the topics that will be covered in class.
16. I use one basic teaching method because I have found that most adults have a similar style of learning.
17. I use different techniques depending on the students being taught.
18. I encourage dialogue among my students.
19. I use written tests to assess the degree of academic growth rather than to indicate new directions for learning.
20. I utilize the many competencies that most adults already possess to achieve educational objectives.
21. I use what history has proven that adults need to learn as my chief criteria for planning learning episodes.
22. I accept errors as a natural part of the learning process.
23. I have individual conferences to help students identify their educational needs.

Figure 1. *(continued)*

24. 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.
25. I help my students develop short-range as well as long-range objectives.
26. I maintain a well disciplined classroom to reduce interferences to learning.
27. I avoid discussion of controversial subjects that involve value judgments.
28. I allow my students to take periodic breaks during class.
29. I use methods that foster quiet, productive desk-work.
30. I use tests as my chief method of evaluating students.
31. I plan activities that will encourage each student's growth from dependence on others to greater independence.
32. I gear my instructional objectives to match the individual abilities and needs of the students.
33. I avoid issues that relate to the student's concept of himself/herself.
34. I encourage my students to ask questions about the nature of their society.
35. I allow a student's motives for participating in continuing education to be a major determinant in the planning of learning objectives.
36. I have my students identify their own problems that need to be solved.
37. I give all students in my class the same assignment on a given topic.
38. I use materials that were originally designed for students in elementary and secondary schools.
39. I organize adult learning episodes according to the problems that my students encounter in everyday life.
40. I measure a student's long-term educational growth by comparing his/her total achievement in class to his/her expected performance as measured by national norms from standardized tests.
41. I encourage competition among my students.
42. I use different materials with different students.
43. I help students relate new learning to their prior experiences.
44. I teach units about problems of everyday living.

approaches. Thus, the PALS score indicates the teacher's overall teaching style, the strength of the support for this style, and the degree to which the teacher accepts the general ideas in the mainstream adult education literature.

The overall PALS score can be broken down into seven factors. While the overall score indicates the teacher's general style, the factor scores identify specific elements that make up this style. The factor titles reflect support of the collaborative mode. High scores on each factor represent support of the concept implied in the factor title; low scores indicate support of the opposite concept. For example, a high score on factor 6 indicates a teaching style that gives learners many choices in how to achieve learning goals once the curriculum has been set and that encourages the students to take responsibility for their learning activities. A low score on factor 6 indicates a style in which the teacher defines and directs the exact learning activities that each student undertakes to accomplish the learning goals. Factor scores are calculated by adding the responses for each item in the factor (see Figure 2).

Figure 2. PALS Scoring

Positive Items

Items number 1, 3, 5, 8, 10, 14, 15, 17, 18, 20, 22, 23, 24, 25, 28, 31, 32, 34, 35, 36, 39, 42, 43, and 44 are positive items. For positive items, the following values are assigned: Always = 5, Almost Always = 4, Often = 3, Seldom = 2, Almost Never = 1, and Never = 0.

Negative Items

Items number 2, 4, 6, 7, 9, 11, 12, 13, 16, 19, 21, 26, 27, 29, 30, 33, 37, 38, 40, and 41 are negative items. For negative items, the following values are assigned: Always = 0, Almost Always = 1, Often = 2, Seldom = 3, Almost Never = 4, and Never = 5.

Missing Items

Omitted items are assigned a neutral value of 2.5.

Factors

Factor 1 (learner-centered activities)
contains items 2, 4, 11, 12, 13, 16, 19, 21, 29, 30, 38, and 40.

Factor 2 (personalizing instruction)
contains items 3, 9, 17, 24, 32, 35, 37, 41, and 42.

Factor 3 (relating to experience)
contains items 14, 31, 34, 39, 43, and 44.

Factor 4 (assessing student needs)
contains items 5, 8, 23, and 25.

Factor 5 (climate building)
contains items 18, 20, 22, and 28.

Factor 6 (participation in the learning process)
contains items 1, 10, 15, and 36.

Factor 7 (flexibility for personal development)
contains items 6, 7, 26, 27, and 33.

Computing Scores

An individual's total score on the instrument is calculated by summing the value of the responses to all items. Factor scores are calculated by summing the value of the responses for each item in the factor.

Factor Score Values

Factor	*Mean*	*Standard Deviation*
1	38	8.3
2	31	6.8
3	21	4.9
4	14	3.6
5	16	3.0
6	13	3.5
7	13	3.9

Factor 1 is Learner-Centered Activities. This factor consists of twelve negative items in the scale. Low scores on this factor indicate support for the use of formal testing and for the use of standardized tests as a means of comparing learners to established standards. Low scores also express an acceptance of traditional middle-class values and a belief that most learners have a common style for learning. They also indicate a desire for a quiet, orderly classroom in which the teacher determines the learning objectives for each student. High scores indicate an emphasis on informal evaluation techniques, on classroom behaviors that encourage students to take initiating actions, and on having students take responsibility for their own learning.

Factor 2 is Personalizing Instruction. It contains six positive items and three negative items. High scores indicate a preference for designing the learning situation to fit the individual needs of each student. Self-paced learning is encouraged. A variety of methods, materials, and assignments is used. Learning objectives are designed to fit individual motives and abilities. Cooperation rather than competition is encouraged.

Factor 3 is Relating to Experience. It consists of six positive items. High scores indicate a recognition of the importance of a student's prior experiences as an aid for learning. Learning activities are made relevant by organizing them according to problems the students face in everyday life. In this way, students are encouraged to ask basic questions about the nature of their society. It is believed that such a process fosters a student's growth from dependence on others to greater independence.

Factor 4 is Assessing Student Needs. It is made up of four positive items. High scores indicate a desire for finding out what each student wants and needs to know. This assessment is achieved through the use of individual conferences and much informal counseling. Students are involved in diagnosing gaps in their present level of knowledge and skills and in developing objectives for addressing these learning needs.

Factor 5 is Climate Building. It contains four positive items. High scores reflect an attempt to establish a learning climate that is both physically and psychologically comfortable for the learners. Students are encouraged to practice self-control by taking periodic breaks and by interacting with other students. Educational barriers are reduced by utilizing the numerous competencies that adults already possess as part of the learning process. Errors are accepted as a natural and beneficial part of learning. Students are encouraged to take risks, and failures serve as feedback to direct future learning.

Factor 6 is Participation in the Learning Process. It contains four positive items. This factor addresses the amount of involvement that the student has in determining the nature and evaluation of the content material. High scores indicate support for allowing students to identify the problems that they wish to solve and to participate in deciding the topics that will be covered in class. Likewise, students are involved in developing the criteria for evaluation of classroom performance.

Factor 7 is Flexibility for Personal Development. It contains five negative items. Low scores indicate a view of the teacher as a provider of knowledge rather than as a facilitator. Once developed, educational objectives remain unchanged regardless of the divergent needs that might arise. A well-disciplined classroom is maintained, and the discussion of controversial subjects that involve value judgments or of issues that relate to the student's self-concept is avoided.

In assessing teaching style with PALS, a teacher should look for several things. First, the overall score should be calculated. Does this total score seem to fit the teacher's self-image? Does the score indicate a strong degree of support of a certain teaching style? Is this score shocking or satisfying? Second, the factor scores should be determined. Are all the factor scores congruent with the overall score? Teachers who score near the mean for PALS often have one or two factor scores that are significantly different from the others. Why are these scores different? What is the teacher doing in the classroom that causes these conflicts? Third, the item values within the individual factors should be reviewed to identify specific items that received responses that were radically different from the responses to other items in this factor. Why were these items so different? By reviewing the PALS scores in such a manner, teachers can better understand the elements that cause them to act the way they do in the classroom.

Relationships Between Teaching Style and Learning

In addition to being a tool for instructors' personal assessment of teaching style, the PALS has been used in numerous research studies. Several of these studies have focused on describing teaching practices in various areas of continuing education. Others have explored the relationships between teaching style and student outcomes. Collectively, these studies are beginning to indicate a pattern in the influence of teaching style on student learning.

The first research using the PALS that related teaching style to student learning was conducted with adult basic education students in South Texas (Conti, 1985). In this study, the teaching style of twenty-nine part-time instructors was measured with the PALS, and their teaching style was compared with students' achievement in the program. Statistical evidence indicated that the teacher's style had a significant influence on the amount of the students' academic gain. However, these gains were not consistent with the general adult education literature; that is, the students of the teachers who practiced the collaborative, learner-centered mode did not always have the highest degree of achievement. Instead, the influence of teaching style differed according to the type of classes in the program. In the classes preparing students to take the General Educational Development (GED) test, the teacher-centered approach was most effective; this finding seemed to contradict the conventional wisdom in the adult education literature that the collaborative mode is generally the most effective means for teaching adults. However, in the English-as-a-Second-Language (ESL) and the basic-level classes, the findings were consistent with the general adult education literature. Here, the learner-centered approach led to the most learning.

These findings indicated that the effectiveness of a teaching style is related to other factors. While teaching style definitely affects learning, some styles are more appropriate in certain situations than others. In this study, potentially important situational factors included differences in the goals of the learners. Learners in GED classes are highly motivated to pass the official GED test. Their lack of high school certification poses a barrier in their lives that prevents them from getting a job, securing a job promotion, or meeting entry requirements for an educational program. Passing the GED test can eliminate this barrier and allow them to move on to goals and opportunities in their lives. Therefore, they typically want to pass this test as quickly as possible, and the teacher is just the person to help them do this. Since the teacher should be familiar with this standardized exam and since the learner has no control over the testing conditions, a teacher-centered approach is an effective way for many learners to get what they need from the educational situation.

However, the motivation for basic-level and ESL students may be very different. These students have lacked basic reading, writing, math, and language skills for all their lives. Now that they have either entered school for the first time or returned to school, they may have more of an intrinsic desire to learn. They are not pursuing skills that prepare them to take a standardized test; rather, they are seeking skills to overcome lifelong academic deficiencies that can be related to their self-concept. The risk taking that is inherent in this process requires a supportive environment with an accepting teacher. A learner-centered approach provides a learning situation in which the students can deal with personal concerns while they are developing academic skills.

Thus, this first study examined the relationship of teaching style to student achievement and confirmed that the style of the teacher was related to how students learned. However, it also indicated that one teaching style cannot be generically prescribed for all teachers, students, situations, and content. While it showed that teaching style interacted with other variables in the teaching-learning transaction, questions still remained about how individual teachers could estimate the potential effectiveness of their style in a specific situation.

A second study helped to clarify the dilemma for teachers (Conti and Welborn, 1986). Involving eighteen teachers and 256 students, it examined the relationship of teaching style to academic achievement for allied health professionals taking credit classes in a nontraditional format, such as evening courses, weekend classes, and off-campus courses. Like the first study, it found teaching style to be significantly related to student achievement. As the adult education literature suggests, the students of the teachers practicing the learner-centered approach achieved at a level that was higher than the average for the total group. However, students of teachers who had very high scores for practicing the teacher-centered approach also achieved above the average. At the same time, no differences in student motivation, content, or situation were obvious from the design of the study. Thus, while the results supported the use of the collaborative, learner-centered approach as an effective means of teaching adults, it also suggested that a teacher-centered approach can be effective. Still unanswered were questions about when each of these approaches is most effective and how teachers can know if their style is appropriate in their own situation.

A third study in this same general line of inquiry helped to resolve some of these unanswered questions. Conducted at Montana's seven tribal colleges, it involved predominantly Native Americans (Conti and Fellenz, 1988). Tribal colleges are community colleges that are located on Indian reservations and controlled by the Indian tribe. They have the dual function of delivering postsecondary education and of maintaining the cultural heritage of the tribe. Most of the students at these colleges are nontraditional adult learners. By involving all seven colleges in the state, the study was able to go beyond the limited number of teachers involved in the other studies; eighty teachers and their 1,447 students participated in this study. These numbers allowed for a greater distribution of teaching styles. Teaching styles were labeled Moderate, Intermediate, High, Very High, or Extremely High for both the teacher-centered and the learner-centered approach. In contrast to findings from the first two studies, teaching style as indicated by the overall PALS score did not relate to differences in student academic achievement. However, differences in the teachers' scores on the seven factors that compose PALS did have a relationship to student achievement and helped to clarify the findings of the previous studies.

Differences in student achievement were found to be related to differences in orientation of teaching style on six of the seven factors. While there were some variations among individual factors, a general pattern emerged. With the exception of the factor dealing with formal evaluation, an Extremely High orientation toward either a learner-centered approach or a teacher-centered approach on any factor was related to lower levels of student achievement. In contrast, less extreme but still Very High orientations toward either learner-centered or teacher-centered styles on several factors were associated with higher student achievement levels. Thus, while student achievement tended to suffer with the extreme practice of a teaching style, students prospered with the Very High practice of either style.

A notable exception to this general pattern of improved student achievement for teachers with Very High orientations was in the area of assessing student needs. Here, students experiencing a Very High teacher-centered approach achieved significantly below the overall average for all students. The teacher-centered approach relies on striving for accepted norms rather than upon giving a high priority to involving individual students in a personal definition of their learning needs. The lack of achievement revealed in the third study suggests that the teacher-centered approach to needs assessment is not beneficial to adult learners and that those who are otherwise consistently practicing the teacher-centered approach may want to reconceptualize this element of their educational philosophy to better fit adult learners.

The other categories did not reveal a uniform pattern. While a High orientation toward a learner-centered approach on a teaching style factor was also generally associated with greater levels of student achievement, an inconsistent relationship was found between a High teacher-centered orientation on the various factors and student achievement. Intermediate and Moderate orientations toward a teaching style for all factors were generally related to average student achievement. These styles neither greatly helped nor greatly hindered students' academic performance.

Thus, while these results suggest that the learner-centered approach is generally effective, they also indicate that consistency within key teaching style elements may be the most important element in fostering improved student achievement. Teachers who score Very High in either approach are consistently implementing important aspects of a teaching style. Each of their actions supports the others. Students can predict and understand their teacher's behaviors. Students are not surprised constantly and frustrated. Instead, they know what to expect from the teacher and what to do to satisfy the demands of the class. This consistency allows both the teacher and the students to be comfortable in the learning environment.

Consistency does not mean rigidity. Teachers who are extreme in their teaching style orientations do not allow for needed flexibility. Student achievement drops for adult students with such teachers. On the teacher-centered side, an extreme orientation indicates that student needs and input are being ignored. On the learner-centered side, it implies that the teacher is disregarding the student's need for some degree of structure. In either case, the extreme scores indicate teachers who are not able to adjust to student needs.

The scores in the middle ranges refute cries for an eclectic approach to education. Teaching style scores in the Moderate and Intermediate ranges identify teachers who practice behaviors from both approaches. Their average scores may be the result of having a moderate commitment to one overall orientation or to having conflicting scores across the various factors that compose a particular teaching style. In either case, they are not presenting a definitive image to their students. At best, they help students to perform at a mediocre level. At worst, they do not seem to foster below-average student achievement. However, the research indicates that a better approach to teaching that helps students to achieve more is possible.

Conclusion

Over the centuries, much has been written about what goes on in the classroom, and philosophical stances have been developed to explain and defend various classroom actions. Recent research on teaching style indicates that the things that teachers do in the classroom make a difference in how their students learn. Although a learner-centered approach is generally successful with adult learners, it must be applied in a consistent fashion that is not extreme. However, not all teachers are comfortable with this approach or support its underlying assumptions. For them, the consistent application of the teacher-centered approach can be successful and beneficial to their students. However, in using this approach, they may need to reassess the inadequate attention that this approach gives to the universal demand of adult learners for the proper assessment of student learning needs.

As professionals, teachers need to know their own personal teaching philosophy and the degree to which their actions reflect this set of beliefs. An instrument like the PALS can be useful in assessing this teaching style and in identifying any inconsistencies in style. Such an analysis can suggest topics for professional development and areas for personal reflection. Such actions may shift the educational debate from an argument over which style is best to an examination of the internal consistency of each teacher's actions. Such a course holds exciting prospects for the field, for the individual teacher, and, most of all, for improved student learning.

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Identifying and examining personal beliefs and values can help teachers of adults improve their performance and change the way in which they view their roles as teachers.

Foundations for Effective Teaching

Jerold W. Apps

Identifying and analyzing our foundations as teachers of adults can help us in several ways. One of the most obvious contributions is simply knowing the beliefs and values that undergird our thoughts and actions. As Gary J. Conti points out in Chapter One, these beliefs and values are directly related to our styles as teachers. Many of us have not taken time to think systematically about the foundations of our teaching practices. From time to time, we face decision points as teachers. What is the best way of presenting this information? In what ways might I use certain technology? What is the basis for my decision to share this information but not that?

Knowing our foundations—becoming conscious of what we believe and value—can help us to make these and similar decisions. We all have some foundation for what we do. It comes to us from our childhood, from our schooling, from the community in which we grew up, and from authority figures with whom we have come in contact. Some dimensions of our foundation may be hidden from us or are, as Bem (1970) suggests, zero-order beliefs. Zero-order beliefs influence what we do, but we are not aware that we hold them. The process of examining our foundations can help us uncover these zero-order beliefs, analyze them, and make judgments about them.

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be survival skills or certificate earning. Education that only pursues the acquisition of testable competencies serves to dehumanize the individual and as Freire (1970) states turns people into objects. In addition to providing the basic tools for surviving in our society, ABE/ASE programs must seek to awaken the natural inclination of the individual to grow and to self-actualize, i.e., to become more fully human.

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ADULT LITERACY and BASIC EDUCATION
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THE PRINCIPLES OF ADULT LEARNING SCALE

GARY J. CONTI

Abstract

A significant portion of the adult education literature endorses the collaborative teaching-learning mode as the most appropriate method for assisting adults in the learning process. However, there are few research studies evaluating the effectiveness of the learning principles which are characteristic of and supportive of this mode. Such studies have been hindered by the lack of an adequate instrument to measure the degree of practitioner support of the collaborative mode.

The Principles of Adult Learning Scale (PALS) was developed to fill this void. Original and follow-up data indicates that PALS is a reliable and valid 44-item instrument which can be completed rapidly. Its reliability and validity were established by juries, observations, and statistical analysis. PALS has potential empirical and field use.

Introduction

A significant portion of the adult education literature endorses the collaborative teaching-learning mode as an appropriate method for assisting adults in the learning process. Despite the extensive attention given to this mode, there are few research studies evaluating the effectiveness of the learning principles of the collaborative mode. Such empirical studies have been hindered in the past by the lack of an adequate instrument to measure the degree of practitioner support of the collaborative mode.

The major purpose of this study was to develop and validate an instrument capable of measuring the degree to which adult education practitioners accept and adhere to the adult education learning principles that are congruent with the collaborative teaching-learning mode. The collaborative mode was defined as a

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learner-centered method of instruction in which authority for curriculum formation is shared by the learner and the practitioner. The items for the instrument were based on adult education principles that are characteristic and supportive of the collaborative teaching-learning mode and which were culled from the literature in the field.

Much has been written in the past two decades about the growing accumulation in the field of adult education of a unique body of theory and knowledge. Bergevin (1967, p. 68) and Jensen, Liveright, and Hallenbeck (1964, p. vii) concur that an appropriate body of adult education knowledge has gradually been assembled. Houle (1973, p. 53) and Knowles (1970, p. 53) point out that adult education has become increasingly sophisticated and specialized. While agreeing with these observations, Farmer (1974, p. 59) adds that in order for adult education to advance in its professionalization, this accumulated body of knowledge must be capable of utilization by practitioners in their work.

A large volume of this accumulated body of theory and knowledge subjectively advocates the collaborative mode as generally the most appropriate method for facilitating adult learning. In order to test this belief, it was assumed that this method must be identified by an instrument which had been substantiated by actual in-class observations. Since the collaborative mode is a learner-centered approach which strives to encourage the learner to seek the maximum amount of trust, self-direction, and responsibility, it is similar to the teacher behaviors which Flanders (1970, p. 35) describes as encouraging student initiating actions. Therefore, the items developed for the instrument were linked theoretically to the Flanders Interaction Analysis Categories (FIAC) as an external criterion for systematically assessing practitioner behavior.

Therefore, although adult education is in the process of developing its own distinct body of theory and knowledge, the degree of its acceptance by practitioners and its value, validity, and reliability have not been tested. As a prerequisite to such studies, this research led to the development of an instrument for measuring the degree of practitioner support of the learning principles related to the collaborative teaching-learning mode. In addition, observations using FIAC were conducted to measure the congruency between the practitioners' expressed beliefs and their actual, observable classroom behavior.

Resume of Related Literature

Although there are various modes of instruction (Blaney 1974), a significantly large portion of the literature in the field of adult education generally supports the collaborative mode as effective and appropriate for teaching adults. The roots for this mode run deep in adult education's history and continue to prosper today.

Support for the underlying principles of the collaborative mode can be traced through the writings of several prominent adult educators. Lindeman (1926/1961) linked Dewey's ideas for active learners to adult education. For him the central driving force for adult education was participation which utilized the learner's experiences. Since "adult education is a process through which learners become aware of significant experience" (1926/1961, p. 109), the curriculum should be organized around situations rather than subjects. In this process, the teacher's task is to assist the learner in applying the subject matter to his/her needs and interests.

In discussing the relationship of adult education to the democratic process, Bergevin (1967) stresses that adult education is a cooperative venture in which the learner is a full partner. To solve the peculiar problems of the particular adults who are involved, the learners are put first. Subjects are then used as vehicles to help people learn about problems which are related to their experiences and interests. Learning is a personal thing in which the teacher helps the student identify problems, set goals, locate materials, and evaluate outcomes. In this process, the learner is dynamically involved, is able to take ownership of the objectives, and grows in maturity and responsibility.

Like Lindeman and Bergevin, Kidd (1976) argued for a learner-centered curriculum which is based on experience. In his view the central purpose of learning is to assist the learner in "being and becoming" (1976, p. 125). This can be accomplished by significantly involving the learner in the educational process and by delegating responsibility to the learner. In this process, the teacher's task is to create a stimulating, nonhostile, supportive environment. In this setting, the learners can engage in relevant activities aimed at increasing responsibility for their own learning.

Houle defines education as a cooperative art (1972, p. 34). In his comprehensive curriculum model, curriculum formation involves the mutual development of educational objectives by instructors and active learners. In this process, the experiences and unique characteristics of the student and situational factors are considered. The instructor has the obligation of helping the learner understand the educational objectives and the program format and of providing opportunities for the learners to accept the responsibility for their own learning. As the learning program evolves, the instructor may be required to assist the learner in further clarifying or adjusting these objectives to better conform to the individual's dynamic learning needs. After the learning activities are completed, the instructor and learner jointly examine the program and outcomes to uncover possibilities for new educational activities.

In proposing the use of the term androgogy, Knowles (1970) argues that adult learning activities should be based upon the realization that individual maturation steadily increases a person's need and capacity to be self-directing, to utilize experience, to learn for evolving social roles, and to organize learning around life problems. Because of these characteristics, the teacher's role focuses on providing a climate, procedures, and resources for participation and for the acquisition of information and skills. This process helps adults learn

> how to take responsibility for their own learning through self-directed inquiry, how to learn collaboratively with the help of colleagues rather than to compete with them, and especially, how to learn by analyzing one's own experience. (1970, p. 45)

Freire (1970) views education as a vehicle for empowering people to eradicate oppression and ignorance. His educational model is based on a participatory approach. It relies on dialogue between the teachers and learners to stimulate critical thinking, creativity, and reflection upon reality. By means of the cooperative application of problem-posing education, the teachers assist the learners in identifying and clarifying their problems and in locating resources. Through this process, the learners are able to combine action and reflection, and the plans, goals, and actions of the teachers and learners become mutual.

The writings of these prominent adult educators exhibit much commonality in the basic assumptions of adult learning. Each argues that the curriculum should be learner-centered, that learning episodes should capitalize on the learner's experience, that adults are self-directed, that the learner should participate in the diagnosis of needs, the formation of goals, and the evaluation of outcomes, that adults are problem-centered, and that the teacher should serve as a facilitator rather than a repository of facts. While each of these educators mix the educational ingredients somewhat differently, all combined them in formulas that articulate a comprehensive philosophy supporting the collabora
mode. Their writings can therefore serve as a source of ac
learning principles for the collaborative mode.

Instrument Construction

The items in the instrument, the Principles of Adult Learn
Scale (PALS), are based upon the body of theory and knowle
which is advanced in the literature by prominent adult educat
who support the collaborative teaching-learning mode. In order
form the items for the instrument, these general and theoreti
principles from the literature were reworded in behavioral te
compatible with realisitic experiences of practitioners in an ac
basic education setting. One-half of the items were stated po
tively so that their action was congruent with the learning prin
ples of the collaborative mode. The items were randomly arran
within the instrument.

A modified Likert scale was used as a continuum for reco
ing practitioner responses. Those taking the instrument were as
to respond to the frequency with which they practice the acti
described in the items. Responses which were congruent with
collaborative mode were assigned a high value while those wh
were antithetical were assigned a low value. With six opti
ranging in value from zero to five, the final 44-item instrum
had a possible high score of 220.

Methodology

The field research of this study consisted of establishing
validity and reliabilty of the items in PALS. Although it
customary to first test for reliability, this study addressed valid
first in order to elicit help in better sophisticating the items a
to increase the discriminating power of the items. The resea
design controlled for construct, content, and criterion-rela
validity, reliability, social desirability, and congruence of interpre
tion of the instrument's items.

The construct validity of the items was established by the te
timony of juries of adult educators. The first jury consisted
three adult education professors[1] from Northern Illinois Unive
sity who analyzed the items, commented on the validity of t
constructs in the items, and suggested improvement for vari
items. The second jury consisted of 10 professors[2] with a hi
degree of visibility in the field of adult education, with ge
graphic dispersion throughout the country, and with philosophi

heterogeneity. These professors were asked to testify to the validity of the construct in each item.

The content validity of PALS was established by field-tests with adult basic education practitioners in full-time public school programs in Illinois. The field-testing was divided into two phases. Phase 1 consisted of three field-tests to identify items that discriminated between supporters and nonsupporters of the collaborative mode. After Phase 1 had produced an instrument with potentially discriminating items, Phase 2 was conducted. This phase consisted of field-testing the instrument with 57 practitioners in six programs. Two programs were in a large metropolitan area; two were in medium-size cities; and two were in small, rural communities. The scores from the practitioners in all six programs were pooled and analyzed. Since the items had been drawn from the literature supportive of the collaborative mode, an individual's total score was used as the criterion measure of his/her support of the collaborative mode. It was assumed that items which were valid and representative samples of this mode would contribute significantly to the total score and would correlate positively with this criterion measure of total score. Therefore, content validity was determined by Pearson correlations which measured the relationship between each individual item and the total score for each participant.

Criterion-related validity was established by comparing the scores on PALS of those who scored two standard deviations either above or below the mean in the Phase 2 field-testing to their scores on the Flanders Interaction Analysis Categories (FIAC). The FIAC scores were determined through actual classroom observations. The FIAC was selected as the external criterion because it is a validated system for measuring initiating and responsive classroom actions and because the actions described in Flanders' definition of initiating are highly congruent with the characteristics of the collaborative mode. To link these instruments, the national jury members were asked to judge the action in each item as either initiating or responsive. The scores derived from actual observations were used to evaluate PALS concurrent validity and to assess the degree to which accepting a mode and practicing it are congruent.

The reliability of PALS was established by the test-retest method. This measure of the stability of an examinee's performance on the instrument was conducted after Phase 2 of the field-testing with a group of 23 adult basic education practitioners in Chicago. The same form of the instrument was readministered to these practitioners after a 7-day interval, and their scores were compared by means of a Pearson correlation.

The research design also controlled for social desirability an congruency of item interpretation by practitioners. A socia desirability score was calculated for each item by having thos who scored two standard deviations either above or below th mean in Phase 2 of the field-testing judge the desirability i other people of the trait described in each item. A nine poin scale was used (Edwards, 1957, p. 48), and mean scores were use to calculate each item's social desirability value. During the sam visitation, these practitioners were interviewed to ascertain thei interpretations of 10 randomly selected items from the instrument

Findings

Interpretative and statistical data were gathered which established the reliability and validity of PALS. The construct validit of PALS was established by the testimony of two juries. Eac jury reviewed the items, made suggestions for improving th items, and judged the type of action inherent in each item. Th input from the local jury was used to revise items, and the testimony of the national jurors was used to compute the statistica values for the construct validity of PALS. At least 78% of th national jurors ruled that each item's concept was congruent wit adult education learning principles associated with the collaborative mode. Likewise, the majority of the national jurors conclude that the positive items in PALS were associated with initiatin actions and the negative items with responsive actions. In addition, the national jurors suggested minor rewordings to strenghe the validity of weak items.

The content validity of PALS was established by field-testing In Phase 1, 43 practitioners at three different sites were tested Data from item analyses and information from group discussion were used to improve the instrument after each testing. Information gathered during this phase of the field-testing was used t greatly refine the instrument.

In Phase 2, the same form of the instrument was administere to 57 practitioners in diversely different full-time programs. Th scores from these field-tests were used to assess the content validity of each item. The Pearson correlations calculated to evaluat the relationship between each individual item and the criterio measure of total score indicated that 25 items were significant a the .001 level, eight at the .01 level, seven at the .05 level, an four at the .10 level. Of these 44 acceptable items (see Appendix), 24 were positive and 20 were negative.

Criterion-related validity was confirmed by comparing the scores on PALS to the Flanders Interaction Analysis Categories (FIAC). Both instruments measure initiating and responsive actions. Eighty percent of the available group that had scored two standard deviations either above or below the mean on PALS were observed, and their classroom behaviors were evaluated by means of the FIAC. Pearson correlations between PALS and each of the three possible FIAC ratio scores of teacher response ratio (TRR), teacher question ratio (TQR), and pupil initiation ratio (PIR) showed a positive correlation of .85 (TRR), .79 (TQR), and .82 (PIR). These high correlations statistically confirmed that PALS consistently measures initiating and responsive constructs and that PALS is capable of consistently differentiating among those who have divergent views concerning these constructs.

The FIAC ratio scores also confirmed the existence of a high degree of congruency between professing to support a teaching-learning mode on PALS and actually practicing behaviors characteristic of the mode in the classroom. Chi square scores for the three FIAC ratio scores for the group which scored two standard deviations above the mean on PALS were significant at the .001 level. Two of the chi square scores for the low scoring group were significant at the .05 level. The teacher response ratio, however, was not statistically significant. This ratio is an index of the teacher's tendency to react to the ideas and feelings of the student, and it is possible that this ratio was inflated for both groups by the large amount of individualized learning practiced in the observed adult education classrooms.

The reliability of PALS as a stable measure for measuring the degree of an adult education practitioner's support of the collaborative mode was established by the test-retest method using the final 44-item form of PALS. The Pearson correlation for the 23 practitioners in the sample group yielded a reliability coefficient of .92.

A social desirability score was calculated for each item in PALS. Items with a rating of 2.0 or less were considered to be nonneutral and judged as socially desirable. Nine items were rated as socially desirable. Since eight of the items (6, 8, 12, 14, 25, 27, 30, and 31) had high content validity values and since the social desirability literature lacks definitive research findings, these items were retained in the instrument with the caution to potential users to consider the implications of these eight ratings before implementing the instrument.

Individual and small group interviews were conducted with the practitioners who were observed to determine the congruency with which the items were interpreted. By means of open ended que tions, the practitioners were asked to express their interpretati of the item's content and to clarify terms or concepts which th introduced into the discussion. As a result of these interviews, was concluded that each of the participants had interpreted ea of the items in the intended manner.

Since its development, PALS has been used in several traini sessions and in two research studies. The analysis of 477 add tional cases indicates that the descriptive statistics produced this study are stable and can be used for interpreting individu scores on PALS. In a staff development needs study, Ding (1980) tested 265 adult basic education teachers in various sectio of Illinois with the instrument. Investigating the relationsh between managerial style and support of the principles in th adult education literature, Pearson (1980) administered PALS to training directors in American Society of Training Directors chap ters in northern Illinois and southern Wisconsin. In addition, 11 scores were collected from Texas adult education practitioners i the areas of adult basic and allied health education. As the da in Table 1 indicates, the descriptive statistics for each of the groups, which represent a broader sampling of the adult educatio community than the pilot group, are similar to those produced i the original study. Table 2 indicates that an analysis of varianc showed no significant differences between the scores of those i the original groups and the scores of those in the subsequent dat gathering groups ($p = .34$). This lack of difference and th similarity between the mean and standard deviation score for th total of all four groups and the pilot group indicates that th norm for the instrument should be a mean of 146 and a standar deviation of 21.

The analysis of the data gathered from the additional sample further substantiates the content validity of each of the items i the final form of PALS. Pearson correlations between an individu al's total score and the degree to which each item contributed t that total score indicate that all items are statistically significan ($p = .001$) and that each item contributes to the overal discriminating power of the instrument. Follow-up research an practitioner evidence, thus, support the descriptive statistics an content validity of the original study creating PALS.

Discussion

This study produced a reliable and valid instrument. It i rooted in the adult education learning principles of the establishe

Table 1
Mean and Standard Deviation of Group Scores on PALS

Group	Size	Mean	SD
Original Sample	57	145.60	22.14
Training Directors	99	148.76	22.30
Texas Adult Educators	113	143.74	19.95
Illinois ABE Teachers	265	145.14	19.96
Total	534	145.57	20.65

Table 2
Analysis of Variance Between Original Sample and Subsequent PALS Scores

Source	*df*	*SS*	*MS*	*F*
Between Groups	3	1,430.94	476.98	1.119[a]
Within Groups	530	225,893.50	426.21	
Total	533	227,324.44		

[a] $p = .34$

literature and is capable of identifying the degree to which practitioners support and adhere to the collaborative teaching-learning mode. This 44-item summated rating scale has potential uses in empirical studies and as a diagnostic tool for those with definitive philosophical views concerning the collaborative mode.

PALS can be used in empirical studies to assess the credibility of the theories professed in the literature. If the collaborative mode is as appropriate for helping most adults to learn as its proponents claim, then learners exposed to this mode should show significant learning gains. Empirical studies to test the effect of the collaborative mode on student achievement can be designed with PALS serving as the instrument for identifying the experimental and control groups. These studies could examine the relationship of the teaching-learning mode to such variables as learning orientations, cognitive styles, most appropriate degree of

applying the various concepts in the literature, and situational
tors. These situational factors could include subject matter, instr
tional objectives, learner goals, and educational settings such
programs for General Educational Development testing, Englisl
a second language, adult basic education, or competency-b
education. If positive relationships are found, PALS could
serve as the mechanism for the compatible matching of distinc
teaching styles with specific learning styles and situations.

PALS could have numerous diagnostic uses by those who h
a firm philosophical commitment to the principles of
collaborative mode. It could serve as a tool for targeted s
development by uncovering cluster areas of concepts around wh
inservice training activities could be planned for either group s
sions or individualized learning projects. PALS could also serve
an assessment tool for indicating to learning resource direc
needed areas for collecting materials. For an administrator, PA
could serve as a personal professional development assessment
and as a tool for identifying areas of commonalities and diff
ences concerning views on teaching methods between him/her
the staff. In addition, the learning principles in PALS could
compared to the literature from either child or adolescent edu
tion to factor out possible generic principles applicable to learn
regardless of age.

Summary

PALS is a reliable and valid 44-item instrument which can
completed rapidly. Its reliability was established by means of te
retest. Construct validity was confirmed by a national jury
adult education professors. Content validity was establis
through field-testing in full-time public school progra
Criterion-related validity was confirmed by identifying the initi
ing and responsive actions in the items in PALS and then
comparing scores on PALS to scores on the Flanders Interact
Analysis Categories. In addition, the variables of social desirabi
and congruency of item interpretation were examined.

PALS has potential empirical and field use. It might serve
the measurement device for segregating experimental and cont
groups in a wide variety of research studies related to learn
efficiency in specific teaching-learning modes. Also, since
instrument consolidates many learning principles widely advoca
in the literature, it might be used in several ways by practitic
ers.

Footnotes

[1] Local Northern Illinois University jury members were Drs. P. Cunningham, J. Niemi, and R. Smith.

[2] National jury members were Drs. G. Aker, G. Darkenwald, D. Dutton, M. J. Even, S. Grabowski, M. Knowles, A. Knox, J. Peters, K. Rockhill, and D. Seaman.

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Appendix
Principles of Adult Learning Scale[a]

No.	Positive Items
1.	I allow students to participate in developing the criteria for evaluating their performance in class.
3.	I allow older students more time to complete assignments when they need it.
5.	I help students diagnose the gaps between their goals and their present level of performance.
8.	I participate in the informal counseling of students.
10.	I arrange the classroom so that it is easy for students to interact.
14.	I plan learning episodes to take into account my students' prior experiences.
15.	I allow students to participate in making decisions about the topics that will be covered in class.
17.	I use different techniques depending on the students being taught.
18.	I encourage dialogue among my students.
20.	I utilize the many competencies that most adults already possess to achieve educational objectives.
22.	I accept errors as a natural part of the learning process.
23.	I have individual conferences to help students identify their educational needs.
24.	I let each student work at his/her own rate regarless of the amount of time it takes him/her to learn a new concept.
25.	I help my students develop short-range as well as long-range objectives.
28.	I allow my students to take periodic breaks during class.
31.	I plan activities that will encourage each student's growth from dependence on others to greater independence.
32.	I gear my instructional objectives to match the individual abilities and needs of the students.
34.	I encourage my students to ask questions about the nature of their society.
35.	I allow a student's motives for participating in continuing education to be a major determinant in the planning of learning objectives.
36.	I have my students indentify their own problems that need to be solved.
39.	I organize adult learning episodes according to the problems that my students encounter in everyday life.
42.	I use different materials with different students.
43.	I help students relate new learning to their prior experier
44.	I teach units about problems of everyday living.

No.	Negative Items
2.	I use disciplinary action when it is needed.
4.	I encourage students to adopt middle class values.
6.	I provide knowledge rather than serve as a resource pers
7.	I stick to the instructional objectives that I write at beginning of a program.
9.	I use lecturing as the best method for presenting my su material to adult students.
11.	I determine the educational objectives for each of my dents.
12.	I plan units which differ as widely as possible from my dents' socio-economic backgrounds.
13.	I get a student to motivate himself/herself by confror him/her in the presence of classmates during group dis sions.
16.	I use one basic teaching method because I have found most adults have a similar style of learning.
19.	I use written tests to assess the degree of academic gr rather than to indicate new directions for learning.
21.	I use what history has proven that adults need to lear my chief criteria for planning learning episodes.
26.	I maintain a well disciplined classroom to reduce inter ences to learning.
27.	I avoid discussion of controversial subjects that involve judgements.
29.	I use methods that foster quiet, productive deskwork.
30.	I use tests as my chief method of evaluating students.
33.	I avoid issues that relate to the student's concept himself/herself.
37.	I give all students in my class the same assignment o given topic.
38.	I use materials that were originally designed for student elementary and secondary schools.
40.	I measure a student's long term educational growth comparing his/her total achievement in class to his expected performance as measured by national norms f standardized tests.

41. I encourage competition among my students.

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[3] Those taking PALS are asked to respond to the way they most frequently practice the action described in the item. Their choices are Always, Almost Always, Often, Seldom, Almost Never, and Never. If an item does not apply to them, they are instructed to select Never. For positive items, the following values are assigned: Always = 5, Almost Always = 4, Often = 3, Seldom = 2, Almost Never = 1, and Never = 0. The values are reversed for the negative items. Omitted items are assigned a neutral value of 2.5. An individual's score is calculated by summing the value of the responses to all items.

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UNDERSTANDING THE ESL LEARNER: LANGUAGE, CULTURE, AND PERSONALITY DEVELOPMENT

RALPH C. DOB
VICTORIA RIBACK-WILS

Abstract

Teaching English to speakers of other languages is more than literacy education. Recent studies have indicated that cultural influences and personality development are primary factors to consider in creating a favorable climate for learning in a classroom with English as a second language (ESL) participants. This article details some of the problems and characteristics shared by many ESL learners and explores approaches which have been found most successful in breaking down learning barriers and in helping nonnative-speaking adults become acculturated without sacrificing their national or personal identities.

Introduction

The increasing number of refugees, immigrants, and intern
tional families arriving in the United States has greatly enlarg
the awareness among educators of the need for special clas
designed to teach English to speakers of other languages. Teach
of adult basic education and literacy in even the smallest comm
nities are no longer surprised to find non-English-speaking adu
in their classes or at being asked to teach a complete class
English as a Second Language (ESL). Nevertheless, the init
reaction is still far too often one of panic. It is the purpose
this article to help reduce that feeling by alerting teachers
some of the similarities and differences between an Americ
class and one for nonnative speakers.

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THE RELATIONSHIP BETWEEN TEACHING STYLE AND ADULT STUDENT LEARNING

GARY J. CONTI

ABSTRACT

Adult education literature suggests that a teacher's actions affect student achievement. To test the appropriateness of the adult education theory base, this study examined the relationship between the teacher's practice of the principles in the literature as measured by the Principles of Adult Learning Scale and student academic achievement based on teacher assessment. It involved 29 teachers and 837 students in an adult basic education program. A significant relationship between teaching style and academic achievement was found. The findings were congruent with the literature base in the basic level and English as a second language classrooms but incongruent with the literature in the GED setting. This contrast was attributed to the differing cognitive and affective focus and the nature of the goals in each type of course. These findings suggest that other situationally specific studies are needed to further clarify the general adult education literature base.

Does teaching style affect student achievement? Teachers differ widely in their classroom practices. These differing styles have been referred to by terms such as initiating and responsive behavior (Flanders, 1970), progressivism and traditionalism (Bennett, 1976; Kerlinger & Pedhazur, 1968), and andragogy and pedagogy (Knowles, 1970). While there is a tendency to think of these terms as two ends of a teaching style continuum, Darkenwald (1982) notes that control and responsiveness are totally independent constructs which can be derived empirically (p. 203). He adds that "it is conceivable that some teachers may put equal emphasis on controlling and responsive behaviors, although studies of school teachers suggest this is unlikely" (p. 203). Since each of these constructs elicits different types of action from the student, it is possible that student will achieve at different rates when exposed to each teaching style. In order to investigate this possibility, the present study sought to examine the relationship between the independent variable of teaching style and the dependent variable of student achievement in an adult basic education setting.

RELATED RESEARCH

Knowles has suggested that the teacher is the most important factor influencing the nature of the learning climate (Knowles, 1970, p. 41). One means by which teachers convey their attitudes about the teaching-learning transaction is through style. Fischer and Fischer (1979) associate style "with distinctive qualities of behavior that are consistent through time and carry over from situation to situation" (p. 245). Style thus refers to a pervasive quality of teaching behavior that persists even though the content that is being taught may change (p. 245). From her observations of elementary classrooms, Kuchinskas (1979) reached a conclusion similar to that of Knowles. She found that the teacher's "style influenced the learning environment more than any other factor" (p. 270) and that "the most revealing thing in the classroom was the overwhelming effect of the teacher's style on everything and everybody else" (p. 270). Likewise, in examining teacher aims and opinions Bennett (1976) confirmed that teacher's hold firm opinions about teaching methods and that these relate strongly to classroom practice (p. 78).

Despite the existence of divergent teaching styles, a significantly large portion of the adult education literature supports the collaborative mode as the most effective and appropriate style for teaching adults. In this regard, the writings of Lindeman, Bergevin, Kidd, Houle, Knowles, and Freire exhibit many commonalities in the basic assumptions of adult teaching-learning. Collectively they argue that the curriculum should be learner-centered, that learning episodes should capitalize on the learner's experience, that adults are self-directed, that the learner should participate in needs diagnosis, goals formation, and outcomes evaluation, that adults are problem-centered, and that the teacher should serve as a facilitator rather than a repository of facts.

In the collaborative mode, adult education is learner-centered and cooperative in nature (Bergevin, 1967, p. 168) and education seeks to solve the peculiar problems of the participants. Furthermore, the curriculum is built around the student's needs and interests with the central purpose of assisting the learner in "being" and "becoming" (Kidd, 1976, p. 125).

Mainstream adult education literature emphasizes the role of experience. The existence of a vast array of experiences is one of the characteristics of adulthood. Adult education can assist adults to become aware of their significant experiences and to relate these to other events in their lives (Lindeman, 1926/1961, p. 109). For adults, experience can serve as a learning resource (Knowles, 1973, p. 39) and as a key in stimulating engagement in learning (Kidd, 1976, p. 271).

The collaborative mode recognizes that individual maturation steadily increases a person's need and capacity to be self-directing and that an individual's self-concept moves from dependence to autonomy (Knowles, 1970, p. 39). Because of this, adults have the inherent ability to control their own lives (Freire, 1970), fostered by taking responsibility for their own learning (Kidd, 1976) and appraising needs, goals, and outcomes. Such participation leads the learner to responsibility and autonomy, promotes relevant learning activities, and assures that the learner's goals are fully achieved (Houle, 1972; Kidd, 1976; Knowles, 1970).

The collaborative mode assumes that adults are problem-centered. The interest of adults in learning is heightened when they deal with problems directly concerning them (Bergevin, 1967, p. 148) and having immediate application (Knowles, 1970, p. 39). Further, adults have within themselves the capacity to solve their own problems (Freire, 1970).

In the collaborative mode, the teacher functions as a facilitator whose tasks are to create a supportive environment in which the learner is free to take risks

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(Kidd, 1976; Knowles, 1970) and "to draw out, not pour in" (Lindeman, 1926/1961, p. 119; Freire, 1970). When the teacher functions in this manner, education becomes a cooperative art (Houle, 1972, p. 34).

Thus, a significant portion of the adult education literature supports the assumptions of the collaborative teaching-learning mode. Although various authors emphasize different elements composing this mode, they all profess a learner-centered approach for adult education in which the key word is always "participation" (Lindeman, 1926/1961, p. xvi).

Beder and Darkenwald (1982) found that teachers teach adults differently from pre-adults and that most of the variance is associated with teachers' perceptions of learner characteristics such as intellectual curiosity, openness, and degree of self-direction (p. 153). Yet the question remains: Under what conditions are collaborative methods, which are widely discussed in the literature, most effective? The ultimate criteria for teaching effectiveness are measures of learner growth (Rosenshine & Furst, 1973), because "it is now becoming recognised that focusing on dimensions of pupil behaviour will probably reveal far more about the effectiveness of teaching than directly studying the teacher" (Bennett, 1976, p. 103).

CONCEPTUAL FRAMEWORK OF STUDY

The assessment of the relationship between teaching style and student achievement requires two measurement tasks. Since the focus of this study was to investigate the effectiveness of the learning principles advocated in the mainstream adult education literature, the Principles of Adult Learning Scale (Conti, 1978/1979, 1979, 1983) was selected as the instrument to measure the independent variable, teaching style. This 44-item summated rating scale with a six point modified Likert scale asks teachers to respond to the frequency with which they practice a variety of activities related to teaching adults, and it yields a score which indicates the degree to which teachers support the collaborative mode as described in the adult education literature. High scores on the instrument are associated with the constructs of initiating, progressive, and learner-centered behaviors while low scores relate to the constructs of responsive, traditional, and teacher-centered behaviors. Unlike other instruments eliciting teaching style, PALS was constructed solely from the adult education literature base.

PALS was normed with adult education practitioners. Construct validity was originally established by the testimony of a panel of 10 professors of adult education and was later verified by factor analysis (Conti, 1983). Criterion-related validity was established by comparing PALS to the Flanders Interaction Analysis Categories (FIAC) which also measures the constructs of initiating the responsive behaviors in the classroom. Correlations of .85 on the Teacher Response Ratio, of .79 on the Teacher Question Ratio, and of .82 on the Pupil Initiation Ratio confirmed the congruence between PALS and FIAC (Conti, 1978/1979, p. 99). Content validity was established by correlating each item in the instrument to the criterion measure of total score (Conti, 1978/1979, pp. 83–97). The test-retest method established a reliability coefficient of .92 (Conti, 1978/1979, p. 105), and follow-up analysis of variance with a broader sampling of the adult education community than the pilot group demonstrated PALS' consistency with a variety of program areas within the field of adult education (Conti, 1982, p. 143). Finally, the instrument has been tested for the social desirability of items (Conti, 1978/1979, pp. 106–111) and for clarity of item interpretation (pp. 111–112).

ABE student's measures of achievement in the academic areas of reading and math were derived from teacher assessments. While this method of data collection lacks the rigor of a pretest/posttest design, it is compatible with realities operating in an adult basic education (ABE) program. Most ABE programs are ogranized to deal with highly diverse students who come with a wide range of needs, abilities, and motivations (Mezirow, Darkenwald, & Knox, 1975, pp. 37–55). Many have a negative orientation toward school, and some, especially in English as a Second Language (ESL), have backgrounds which they do not wish to disclose. As a result, in order to maintain a nonthreatening learning environment, certain background data is either undesirable or impossible to gather. Although it could improve the rigor of the research design to have controlling data such as IQ scores or a standard quantitative placement score on each student, these items commonly do not exist in many ABE program.

Recent Adult Education Research Conference sessions have focused on the advantages of collecting data in its natural setting, and Merriam and Jones (1982) have suggested methods of improving the rigor of "soft" data. They suggest that a potential data source should provide information or insights relevant to the research question and facilitate a practical and systematic understanding of the research issues (p. 143). Such data should be an honest assessment of the account, plausible in terms of the assessor's experiences, and internally consistent (pp. 144–145).

The most valid appraiser of students in ABE is the teacher. Since the primary academic concerns of most ABE students are reading and math, teachers make an initial assessment in these areas in order to place students. A great variety of methods and materials are used for this needs assessment. Oral interviews are often used for English as a second language students, teacher-made instruments for low level reading and math students, and standardized tests such as the *Tests of Adult Basic Education* or the *Adult Basic Learning Examination* for secondary level students. Sometimes a combination of these methods is used. Despite the specific techniques or instruments that are used, the teacher gathers as much information as possible and makes an assessment of the student's entrance level. As a result of this teacher assessment process, ABE students are quickly placed in materials and begin to work at building reading and math skills. Incorrect initial assessment usually results in rapid adjustments. Because of state and federal requirements for funding, the placement level of each student is recorded. Placement assessment is, thus, a necessary competency for ABE practitioners. For purposes of this study, it was assumed that ABE teachers perform this task in a similar manner with each student.

Teacher assessment of a student's achievement level is also required when the student exits a program or at the end of a program year. At this point quantitative scores sometimes are available for students completing the General Educational Development (GED) test. These can help the teacher make a judgement of the student's achievement level, because passing the test is equated with reading at the twelfth grade level. However, [illegible] the GED test, teachers must resort to the variety of techniques similar to those used in the original student assessment and placement. Regardless of the exact methods used, the teacher has been in direct contact with the student, has observed the student's work, and has interacted with the student. When combined with other possible measurement devices, experience, and professional competence, these place the ABE teacher in a position to make a reasonably accurate assessment of the student's academic level and to consistently assess all students in the class.

This study, therefore rests on two assumptions. One is that a definitive body of theory and knowledge exists which suggests that there is an appropriate means of assisting adults in the learning process. The other is that because of the nature of their job, experience, and interaction with students, ABE teachers accurately and consistently assess the entrance and exit levels of their students.

METHODOLOGY

Data were collected in the Hidalgo-Starr Adult Basic Education Cooperative in southern Texas. This program covers a two county region adjacent to the Mexican border and has a large Hispanic population. Student population was culled from official student records for the 1981–1982 academic year. Of the 65 experienced teachers who completed the teacher assessment instrument, 29 had complete student records that were usable for this study. All were part-time instructors working in self-contained classrooms. Seven instructed at the basic level; eight taught GED preparation; and 14 were ESL instructors. Fourteen teachers were female, and 15 were male. They averaged 11.5 years of total teaching experience and 6 years of experience in adult education. All held at least a bachelor's degree, and 14 had a master's degree. However, only five had any formal training in adult education. The mean age for this group was 37.7.

These teachers instructed 837 students. Of these 115 were enrolled in basic level instruction; 249 were in GED preparation; and 473 were in ESL classes. The student sample contained approximately twice as many females as males. The average student age was 30, with 181 under 20, 308 in their twenties, 223 in their thirties, 84 in their forties, and 41 over 50 years of age. Students ranged in age from 15 to 76 with 17 being the most common age.

The 44-item PALS scale was distributed to all teachers in the program by site supervisors at the beginning of the 1982–1983 academic year. Completed answer sheets and data forms were returned in sealed envelopes. Teachers who completed the scale, had been employed by the program during the previous year, and had complete student records were included in the study. The relationship between the teacher's score on PALS and the academic achievement of that teacher's students was examined by analysis of covariance which allowed exit scores to be adjusted by entrance scores in order to mitigate any initial differences that might have been present (Huck, Cormier, & Bounds, 1974, pp. 132–135) and thereby to give a more accurate measure of student academic growth in the program. In addition, the design controlled for hours of attendance, the gender of the student, the course of study, and student age.

FINDINGS

Table 1
Analysis of Covariance of Student Academic Achievement by Teaching Style

Source	SS	df	MS	F
PALS	67.90	4	16.96	5.67*
Error	2411.87	806	2.99	
Total	2479.77	810		

* p < .001

The 29 teachers in this study tended to favor a teacher-centered approach. Their mean score on PALS was 130.05. This is 0.8 of a standard deviation below the mean of 146 for the instrument and places the group at the 21st percentile ranking. Although the teacher's scores ranged from 111.5 to 155, only three teachers scored above the instrument's mean score of 146. Thus, the teaching style of this sample was not congruent with the adult education literature, and its distribution was not similar to that of larger groups that had been tested with PALS (Conti, 1983).

In order to compare a teacher's score to student achievement, PALS scores were categorized by one-half of a standard deviation. Since PALS has a standard deviation of 20, each category had a range of 10. Categories were marked off from the mean. Analysis of covariance was used to compare the independent variable of teaching style as measured on PALS to the dependent variable of student achievement. As shown in Table 1, teaching style contributed significantly to student achievement ($p < .001$). The greatest gain was among the group of students whose teachers scored between 1.5 and 2.0 standard deviations below the mean on PALS. The next highest gain was among students who had the teachers with the highest PALS scores in the study. The order of these results changed, however, when hours of attendance were also controlled. This analysis indicated a significant difference ($F = 4.93$, $df = 4/805$, $p = .001$) in the effect of teaching style upon student academic achievement when both student entrance level and amount of student attendance were introduced as covariances. In this situation, the students who had the teachers with the highest PALS scores experienced the greatest academic gains. The group with the teachers scoring lowest on PALS had the second ranking scores. The other three groups were also below the mean for PALS, but their ranking did not indicate a discernible pattern.

The effects of an interaction between PALS score and the variables of the student gender, student age, and course of study were examined. While the results of the analysis of covariance disclosed a significant difference due to teaching style ($F = 5.69$, $df = 4/797$, $p < .001$), there was no difference due to student gender ($F = 2.46$, $df = 1/797$, $p = .12$) nor was there a significant interaction between teaching style and student gender ($F = .39$, $df = 4/797$, $p = .82$). Likewise, student age did not yield a difference ($F = 1.12$, $df = 10/756$, $p = .34$), and no interaction was indicated between teaching style and the age of the students ($F = .62$, $df = 40/756$, $p = .84$). Thus, no statistical relationships were found between the student attributes of gender and age that would influence student academic growth.

Table 2

Interaction of Teaching Style and Course with Student Academic Achievement

Source	SS	df	MS	F
PALS (A)	101.02	4	25.26	9.64*
Course (B)	249.09	2	124.54	47.55*
AxB	75.85	8	9.48	3.62*
Error	2084.72	796	2.62	
Total	2510.68	810		

* $p < .001$

However, as Table 2 indicates, a significant interaction was found between teaching style and the nature of the course. This is not a surprising finding for a program that contains both GED preparatory courses and ESL classes. Since ESL classes often include those who are illiterate in both their native language and English and who are experiencing cultural adjustments, academic growth in the ESL program may occur at a slower rate. Because of the great disparity between the GED and ESL classes, the relationship between teacher's style and student achievement was explored separately for each course of study. In each case analysis of covariance was used and the controlling variables of hours of attendance, student gender, and student age were examined.

A significant difference was found within the GED classes. Teaching style had a significant impact on student achievement in the GED setting (F = 16.94, df = 4/239, $p < .001$). Contrary to the adult education literature, students in the most teacher-centered group overwhelming achieved the greatest gains. The general pattern was for student achievement to decrease as PALS scores increased with the classes conducted by the two groups of teachers most supportive of the literature showing the least gain. This same pattern persisted when attendance was controlled. Student age and gender were not significantly related to teaching style and academic gain.

A different pattern emerged from the examination of the basic level and ESL settings. Large but nonsignificant differences in student achievement as related to teaching style were detected in both the basic level (F = 1.95, df = 3/96, p = .13) and the ESL (F = 2.06, df = 4/459, p = .09) setting. However, significant differences in academic achievement associated with teaching style emerged when the covariants of entrance level (F = 2.64, df = 3/95, p = .005) and hours of attendance (F = 3.54, df = 4/458, p = .007) were controlled. Unlike the results in the GED setting, students working with the collaborative teachers tended to achieve more than those experiencing a highly teacher-centered mode. The amount of gain was most pronounced in the ESL setting. Although the students whose teachers most strongly supported the collaborative mode had high, positive gains in both settings, the distribution of scores among the other groups of scores on PALS did not demonstrate a pattern. As in all other checks in this study, the characteristics of student gender and student age were not related to teaching style and academic gain.

DISCUSSION

The major finding of this study is that a relationship exists between the teaching style used in the adult education setting and student achievement. Although the adult education literature suggests that the collaborative mode is generally the most effective, this study indicates that GED students learned more in a teacher-centered environment. This may be because GED students tend to be goal oriented and are focussed on the immediate task of passing the GED examination. As a result, correctly meeting their needs may involve creating a structured learning environment where objectives of passing the standardized GED test are clearly delineated and human resources are available to provide immediate feedback related to goal progress.

A different approach appears to be more appropriate in the basic level and ESL settings. Here the goal is to improve skills related to reading, mathematics, and English proficiency. Due to beginning deficiencies among entry-level students, this is a long term process. In addition, the skills acquired in this setting are not merely vehicles to certification, but are also related to the person's self-concept, influencing both the way people see themselves and the way they perceive others seeing them. Risk taking for personal exploration requires a supportive environment. The teacher is crucial to this process, and student involvement is dependent upon teacher acceptance (Fellenz, Conti, & Brekelbaum, 1981). Once a positive relationship is developed with the teacher, the ABE/ESL classroom can become a microcosm of society for the students to investigate elements related to self-concept, and to practice skills for problem-solving and relating to others. Thus, while developing academic skills, these students also experiment with interpersonal skills. The time required for building an open, supportive, and warm relationship between student and teacher may also help explain why academic achievement is a function of hours of attendance.

This study is limited by the lack of a full range of possible styles among the participating teachers. Nevertheless, it does address McKeachie's (1983) call for studies to begin to focus upon the unique parts of a field instead of the field as a whole and to begin to apply the general knowledge base of the field to specific situations. In the field of adult education, McKenzie (1981) has urged teachers to examine more closely all the variables in a specific situation before selecting a management style (p. 21), and Even (1982) has suggested that adult educators expand their investigation of the role of cognitive style in the adult classroom. By examining the style of the teacher, this study is an initial step in addressing such issues. It also addresses situational specificity in relationship to its impact on student outcomes.

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ADULT EDUCATION FORUM

CREATING ORDER FROM THE CHAOS: ACADEMIC INTEGRITY IN CONTINUING PROFESSIONAL EDUCATION

ALBERT A. VICERE

The character of higher education is changing. The primary focus is shifting away from an emphasis on the 18–22 year old undergraduate student toward a broader, more encompassing view of learning as a lifelong process. In addition, the field is witnessing yet another confrontation between the ideals of a liberal education and the practicality of education as professional preparation.

The influence of these two challenges is perhaps most evident in the area of continuing professional education. For the purposes of this article, continuing professional education may be defined as educational programming geared to the practicing professional adult. Houle (1983, p. 13) alluded to the nebulous nature of this broad based focus: "I've found it useful to start out with the assumption that there is no such thing as a profession per se, but that many occupations are professionalizing." These occupations range from the traditional, such as medicine and law, to the emerging professions of business, engineering, computer science, nursing and a multitude of other fields. The common thread among these fields is an ever expanding body of specialized knowledge which must be continually pursued if one is to remain on top of the field and an effective practitioner.

Most institutions are making a concerted effort to serve the expanding market in continuing education for the professions. However, it must be acknowledged that serving the adult student has historically not been a primary mission of most institutions. Furthermore, the expertise of higher education institutions is geared more toward preparing students to *enter* a profession, than to *practice* it. This, then, poses a dilemma in academic action within higher education: how to serve the major growth segment of the educational market while retaining an emphasis on academic quality and integrity. The purpose of this paper is to initiate a discussion aimed at creating a framework for dealing with this critical issue.

THE CONTEXT OF THE PROBLEM

The many educational and curricular reforms of the past two decades, developed in response to the dramatically changing environment described above, have led a number of authorities to question the integrity of higher education in the United States. Corson (1975) suggested colleges and universities may have

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Teaching-learning styles and the adult learner

Education in a formal setting is a human activity which involves teachers and students. As educators strive to improve learning, common sense tells them that the efficiency of learning can be increased by learning more about each of these human elements in the teaching-learning transaction. This notion is reinforced by the adult education literature which stresses the importance of needs assessment. Consequently, the concept of teaching style and learning style have recently been popular topics at adult education conferences and in the adult education literature.

Style refers to a person's pervasive qualities that persist even though situational conditions may change. Most of the traits associated with style are not congenital; rather, styles develop over time, can change slowly, and reflect other characteristics of the person. For example, teaching style is a label associated with various identifiable sets of classroom behaviors by the teacher which are consistent even though the content that is being taught may change (Fischer & Fischer, 1979). This style is the operational behavior of the teacher's educational philosophy. On the other hand, learning style refers to the characteristic ways each individual collects, organizes, and transforms information into useful knowledge (Cross, 1976; Kolb, 1984). It influences such things as the setting in which people wish to learn, the kinds of things they want to learn about, and how they will approach learning situations.

When addressing teaching and learning styles, the ultimate issue is the relationship of these styles to adult success in the classroom. Although many studies in the past focused on merely describing the teaching and learning styles of those involved, a recent study examined the impact of teaching style and of learning style on the academic achievement of health professionals returning to continuing education courses (Welborn, 1985). The effects of teaching and learning style were measured by examining each student's grade at the end of the course and adjusting it for the student's overall grade point average in college.

The study involved 256 health professionals who were described by the university as nontraditional students because they attended class outside of the customary delivery schedule. They took courses in allied health education, allied health research, and health administration. The age range for the group was 20 to 65 years with an average age of 34 years. Nearly two-thirds were females. Most (58%) were married. Half were graduate students, and another 42% were juniors and seniors. These nontraditional students attended courses which were offered in the evenings and on weekends for credit in a degree program. The courses were taught by 18 instructors, both on the university's main campus and at satellite centers in the three other cities. Sixteen of the instructors were employed full-time by the university, and two were adjunct faculty.

Measuring Style

Teaching style was measured with the Principles of Adult Learning Scale (PALS) (Conti, 1982; 1985). PALS is a 44-item summative rating scale which is based on the principles that are advanced in the adult education literature. It gives an indication of an instructor's overall preference for teaching behavior in an adult education setting. High scores on PALS have been designated to reflect a learner-centered approach to the teaching-learning transaction. Low scores on PALS denote a preference for the teacher-centered approach in which authority resides with the instructor. Scores near the mean indicate a combination of teaching behaviors which draw elements from both of these approaches. The score indicates the instructor's overall teaching style and the strength of the teacher's support for this style. The self-reported scores on PALS have been positively correlated with the actual classroom behaviors of the teacher.

The mean for PALS is 146 with a standard deviation of 20. In this study, teaching style scores were grouped by one-half standard deviations from the mean. These following categories were used: Moderate = between the mean and one-half standard deviation; Intermediate = between one-half and one standard deviation from the mean; and High = at least one standard deviation from the mean. In actual teaching behavior, the following can be predicted for each group. Those who favor the learner-centered approach support activities such as encouraging students to take responsibility for their own learning, personalizing instruction, relating new learning to prior experiences, assessing student needs, involving the students in the learning process, and fostering flexibility in the classroom to stimulate the student's personal development. Those who prefer a teacher-centered approach function as the managers of the classroom conditions which they have determined as necessary to bring about the desired behavioral change in the student. A high degree of support of either approach indicates the consistent practice of a definitive teaching style. Those in the intermediate range are also rather consistent in practicing one of these approaches; however, their scores which are closer to the mean indicate that they do not practice these behaviors with the same intensity as those in the high range. Those in the moderate group often view themselves as eclectics. Experiential evidence with PALS indicates that while

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they have a tendency to support one approach, they usually do not practice one or two of the major factors composing that style. This inconsistency moderates their score and places them closer to the mean than any other group.

Learning style was measured with the Canfield Learning Style Inventory (Canfield, 1983). This 30-item instrument conceptualizes learning style as composed of the elements of preferred (a) conditions, (b) content, and (c) mode of learning and of the (d) expected level of success. The preferred conditions of learning consist of eight factors which make up the four subscales of affiliation, structure, eminence, and achievement. Preferred content contains the subscales of numeric, qualitative, inanimate, and people. Preferred mode has the subscales of listening, reading, direct experience, and iconic. Expectancy has four levels which range from expecting to do poorly to confident in performing in a superior manner in the learning activity. The learning style scores in the areas of conditions, content, mode, and expectancy were grouped according to the percentile categories indicated for females on Canfield's Learning Style Inventory Percentile Profile Sheet. These categories were as follows: Low = 1 to 10th percentile; Moderately Low = 11th to 39th percentile; Moderate = 40th to 69th percentile; Moderately High = 70th to 89th percentile; and High = 90th to 99th percentile. Thus, the Canfield Learning Style Inventory produced a total of 16 scores for each student; there were four scores in each of the four different preference areas. While the highest score in each area was considered as the student's dominant style for that mode, the percentile scores provided a relative measure of how the student compared to the normative group for each of the elements within the four different areas.

Learning Style Findings

Most of the allied health professionals in this study were enrolled in more than one course. When the actual 256 students were duplicated to match their true attendance in class, the total number of students for this study was 584. Analysis of covariance was used to measure the influence of the various aspects of learning style upon their achievement in class. When students were labelled solely by their dominate style in each preference area, no differences were found. Therefore, the distribution within each of the preference areas of conditions, content, mode, and expectancy was examined. This procedure indicated that no significant differences existed in most of the areas which make up the preferred area of conditions of learning. Significance was found only in the area of authority. Those students who expressed a strong desire for classroom discipline and order and for a well-informed instructor achieved at the highest rate.

Significant differences were found in two of the areas of preferences for content. Those who showed a strong preference for working with numbers and logic received higher grades than those with less interest in logical problem-solving. Those who had a preference for learning by working with language or people did more poorly in class. Thus, the students' achieved differently according to two distinct preferences for content with a preference for learning logical type content being the most helpful.

These continuing education students also achieved differently according to their preferences for mode of learning. Although neither listening, reading, nor iconic produced a difference, the strength of a student's preference for learning through direct experience influenced achievement. Those who had a moderately strong preference for learning by direct experience achieved at the highest rate while those who had a moderate dislike for learning by direct experience achieved at the lowest rate.

Expectancy scores were directly related to student achievement. Students that expected to do well achieved above the average for the total group while those who anticipated performing at an unsatisfactory level scored significantly below the average for the group. Clearly, these students had a realistic assessment of their ability to succeed in continuing education courses and performed at that level.

Teaching Style Findings

Although the learning style findings cut across several preference areas and are somewhat difficult to interpret, the teaching style findings from an analysis of covariance are clear and definitive. Teaching style is a major influence on student achievement. Students of teachers with a moderate or intermediate preference for a teacher-centered approach to classroom instruction achieved less than all other students. However, the students of teachers who had a strong preference for the teacher-centered approach achieved above the mean. Although the students of the teachers with the highest scores on PALS experienced only slightly above average achievement, the students of the teachers who moderately supported the collaborative mode demonstrated the greatest amount of achievement of all students in the study. Thus, while the teacher's practice of an explicit style contributed positively to student achievement, the judicious implementation of the collaborative mode led to the greatest student achievement.

The interaction of teaching style and learning style on student achievement was also explored with analysis of covariance. When students were grouped according to their one most preferred learning style in each preference area, no significant differences were found except in the area of expectancy. At all expectation levels, moderate support of the teacher-centered approach produced the lowest amount of student achievement. Strong teacher-centered styles interacted most favorably with those expecting to perform at either the average or the unsatisfactory level. The collaborative teaching style interacted most favorably for students who expected to do either above average or superior.

Discussion

The learning style findings indicate that a knowledge of the student's overall learning style or of the learning preferences in various areas composing learning style may not be of tremendous value in facilitating student achievement. The lack of any significant differences when students were categorized by their dominant mode indicated that all the elements within a preference area were equally successful in helping students to achieve. Therefore, perhaps acknowledgement of the actual learning strategies used by the student in each learning situation might be of greater value. Learning strategies refer to the immediate tactics that a learner uses to deal with a specific learning situation. While learning strategies may be grounded in the student's basic learning style, they incorporate adjustments for various situational factors. The learner's final success in the educational setting may be dependent upon the appropriateness of the learning strategy which is employed.

Likewise, when the examination focused within each preference area, most of the findings indicated that one style was usually not more useful than the others in helping students to achieve. In those areas where differences were found, obvious links can be inferred from the nature of the allied health field. The greater achievement by those who demonstrated a strong preference for the learning condition of authority could reflect that health professionals have been prepared in specific health specialities by focusing on procedures, standards, and rules. These professionals must have accurate knowledge to correctly assess life and death situations. Having an orderly classroom with a knowledgeable instructor is a secure format for thoroughly gathering the information which will later be applied in a pressure situation.

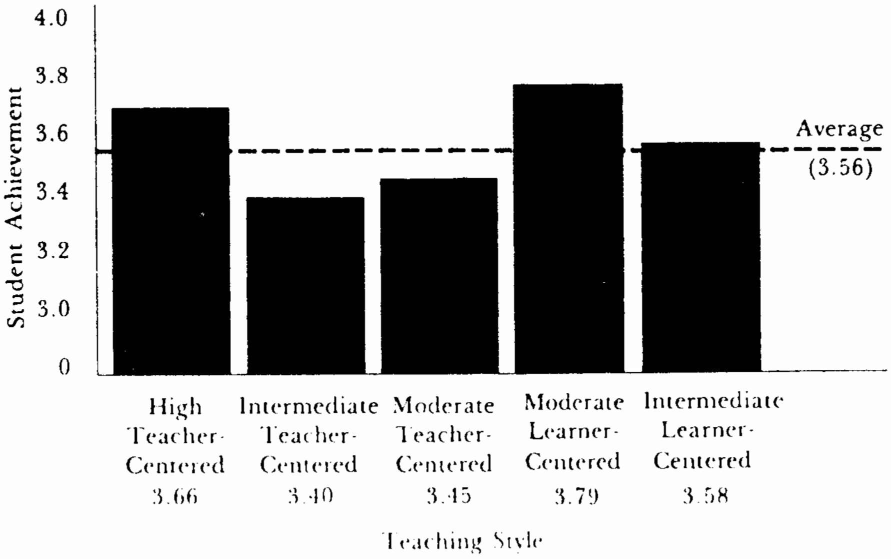
Although the health professions have a service orientation and work with people, their content is based in the hard sciences and is exact. Health care professionals are frequently placed in situations where they must not only perform but must also act according to prescribed standards. Such behavior puts a premium on precision and on logical thinking. Consequently, achievement by those who have a preference for learning numeric content can be predicted. Likewise, the applied nature of the health professions favors those who prefer a direct experience mode of learning.

The participants in this study had at least two years of post-secondary training and were voluntarily returning to the university setting for continuing education. They, therefore, had a solid record of achievement in education upon which to predict their level of success in these health profession courses. Most felt they would do well. The findings from this study indicate that they were aware of their past record and honest in their assessment of future success.

A paramount finding of this study was that teaching style has a significant effect on student achievement. The pattern of student achievement with the various teachers supported the claim in the adult education literature that the collaborative mode is effective for teaching adults. The students of teachers who were between the mean and one standard deviation below the mean on PALS achieved less than the other groups. However, achievement rose above the mean for students whose teachers were at least one full standard deviation below the mean and who therefore practiced a definitive teaching style. Nevertheless, the achievement levels were highest for the students of teachers who favored the collaborative mode. Thus, Knowles (1970) assertion that the teacher is the most important variable influencing the learning climate and his recommendation that adult educators use the collaborative mode appears to be sound advice.

This study provides additional situational specificity to the overall adult education literature base. The exact nature of the allied health field which deals with human survival requires that the curriculum transmit certain knowledges and skills. The significant teaching style findings decidedly show that treating the health professionals as adults while simultaneously respecting the integrity of the curriculum facilitated the greatest amount of student learning. This combination of approaches toward the student and the curriculum was obtained by applying the collaborative mode. However, it was not applied in an extreme fashion. Those teachers who practiced the collaborative mode but who also kept sight of the demands of the curriculum tended to foster the greatest student achievement. Thus, although the general adult education literature suggests in broad terms that the collaborative mode is the most effective method for teaching adults, the application of this mode in the allied health field must be tempered with the demands of the curriculum in order for it to be successfully accepted by the students.

Figure I
The Relationship Between Teaching Style and Student Achievement



Conclusion

More is needed than a knowledge of a student's learning style in order to improve the quality of teaching and learning. In this study, learning style was treated as a trait possessed by the student. It was measured and examined for impact. Many of the computed statistics indicated that student success was unrelated to a specific learning style. Thus, despite their different preferences for conditions, content, and mode of learning, the students devised ways to successfully achieve in the health professional courses. Interviews with students periodically during the courses could have provided insights into the formation of learning strategies and a better understanding of the entire concept of learning styles. In the future, learning efficiency might be fostered by making students aware of their learning styles and by providing counseling sessions for more effectively adapting this style to the course content or to adopting strategies for strengthening less developed learning style areas that the students will need in the course. Regardless of how they are used to help the student, effective learning requires more than the identification of learning styles as a characteristic of the student.

The strongest finding from this study is that teaching style makes a significant difference in student achievement. This implies that teachers need to take a careful look at themselves and their actions. The secret to improving student achievement is not just in identifying the unique characteristics of each student such as learning style, but rather it includes a thorough analysis by teachers of their behaviors and the consequences of their actions. More importantly, it demonstrates the importance of practicing a teaching style which consistently treats adults with dignity and respect.

Situational factors influence the degree to which the collaborative mode can be advantageously applied in adult education. The mainstream adult education literature base supports the collaborative mode as the most effective method for teaching adults. However, this literature addresses the broad field of adult education and does not delineate the degree to which this collaborativeness is appropriate for each part of this diverse field. The findings from this study suggest that situational factors such as the nature of the curriculum, the type of educational agency delivering the program, the type of student to be recruited into the program, and the maturity of the students must be taken into consideration in determining the

(continued on page 24)

Teaching-Learning

(continued from page 23)

extent to which the general principles from the literature are applied. Nevertheless, in searching for this exact formula, it must not be forgotten that the greatest amount of academic success was achieved when the students were treated as adults during this process. **AAACE**

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lems (*Lifelong Learning*, June 1985, 21-22). Yet, this particular program is written and presented in a manner that the person without a strong math aptitude can enjoy practice. The material is advertised as being suitable for grade levels 7 to 12. As an adult, I did not find the program to negatively affect my self-concept in any way. Therefore, I have no problems in recommending its use in adult classes or adult learning centers.

The program includes practice activities and some useful instruction in binomial multiplication and factoring. The activities are interactive and elicit the name of the user. Special communications such as error messages and congratulatory information thereafter are addressed to the user on a first name basis. Lengthy instruction is available for the student who wishers to use it for first time learning or for a refresher. As noted in the review of Success With Math (*Lifelong Learning*, June, 1985)

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After the instructions explain the procedure the learner can choose to learn more about the FOIL method. Two lessons include "How to Use the FOIL Method" and "Why it Works." The lesson on why it works discusses FOIL as a shortcut for the distributive law and the commutative law. A problem is solved using the above two laws and compared with the results of a problem solved using the FOIL method. The learner who wishes to know more about the distributive law and commutative law will have to go to an algebra book, however.

After obtaining instructions, or without them if the proper menu selection is made at the beginning of the program the learner has a choice of the number of problems (up to 9) on which he or she may work. An error will prompt a

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way of solving problems. In the chapter, he dispels a number of myths about research, illustrating that it is an activity in which each person is involved, whether intentionally or not. Research including those done through theses, has a place within pre- and post-service training.

***Barer-Stein** calls our attention to the importance of understanding the Universal Learning Process that emerged from her own recent research. Using the phases of the Process as a framework, she suggests ways of coordinating teacher interventions with the behaviours of the learner as s/he progresses. For both teacher and student to have a grasp of this process, and even the fact that learning is a process rather than an act, provides choice points for decision and action. Some classic questions such as those concerning adult motivation and program planning are re-examined against this learning framework.*

*Of the three chapters which especially focus on research within this section, special attention is drawn to the importance of seeking and practicing alternative approaches, such as experiential and learner-centred research. Theoretical background for this is provided by **Draper** and **Barer-Stein** and an application of this is presented by **Horsman**, who attempts to document the ways in which learners express feelings about learning. Her chapter also outlines some barriers that people face in participating in literacy and other forms of educational programs. She makes the point that social context is especially relevant to literacy and influences one's personal meaning of it.*

CHAPTER 1:

Teaching Styles and the Adult Basic Educator

Gary J. Conti

Unlike classrooms for children or formal credit courses in a university, the format for adult basic education (ABE) classes varies greatly. Some classes meet on a regular schedule and focus on a specific topic: others are open-entry, open-exit learning centres. They meet at all hours of the day. Most programs have classes for non-native speaking students, basic literacy skills, and advanced high school equivalency skills. With such diversity, the roles of ABE teachers are often different. In such complexity, the question arises as to whether the type of teacher in the classroom actually makes a difference.

Each teacher has a specific teaching style. This style is composed of the teaching behaviours that are consistent over time and that do not change regardless of the content being taught. While teachers may differ in their degree of acceptance of various styles, teaching style can be divided into two major approaches. In the learner-centred approach, teachers emphasize activities such as encouraging students to take responsibility for their own learning, personalizing instruction, relating new learning to prior experiences, assessing student needs, involving the student in the learning process, and fostering flexibility In the classroom to stimulate the student's personal development. In the teacher-centred approach, teachers function as managers of the classroom conditions which they have determined as necessary to bring about the desired behavioural change in the student. Both approaches are practiced in current ABE programs, and both approaches to teaching have firm roots in different philosophical schools of educational thought.

These two styles of teaching are drastically different. Are they equally effective for all learners in ABE, or does teaching style make a difference in student achievement? Since recent research in adult education has began to focus on what happens with the learners In the teaching-learning transaction, it is possible to begin to answer these questions. Initial research evidence seems to indicate that teaching style does make a difference in how well students learn.

RECENT RESEARCH FINDINGS

Two studies have investigated the relationship of teaching style to student learning in ABE. In southern Texas, the teaching style of 29 part-time teachers was assessed with the Principles of Adult Learning Scale, and the achievement of their 837 students was analyzed.[1] Analysis of covariance indicated that the teacher's style had a significant influence on the amount of student academic gain. However, the gain differed with the different types of classes in the program. In the classes preparing students to take the General Educational Development (GED) test, the teacher-centred approach was most effective. In

UNIT

the English as a Second Language (ESL) and the basic level classes, the learner-centred approach facilitated the most learning.

These differences were attributed to the difference in the goals of the learners. In GED classes, learners are externally motivated to pass the GED test. The lack of a high school diploma poses a barrier in their lives, and the GED class offers an opportunity to alleviate this burden. Since the teacher should be familiar with the GED exam and since the testing conditions are totally beyond the students' control, a teacher-centred approach is the most effective for them in obtaining their goal.

On the other hand, the motivation for students in the basic level and in ESL classes is very different. Here the students have the intrinsic desire to improve skills related to reading, mathematics, and English proficiency. These skills are not merely needed for certification but rather are necessary to overcome deficiencies which affect the students everyday in numerous aspects of life. Moreover, they are related to the learner's self-concept. The risk taking inherent in this process of personal exploration and development requires a supportive environment with acceptance by the teacher. A. learner-centred approach, which establishes a strong personal bond between the teacher and the learner, provides a means for the students to resolve interpersonal concerns while developing academic skills.

In a second study, it was found that teaching style affects other aspects of student learning in addition to academic achievement. The relationship of teaching style to the moral development of inmates enrolled in ABE classes in the Texas prison system was examined.[2] Statistically significant findings indicated that the learner-centred approach was generally the most effective for stimulating higher levels of moral development among the students. One element that was extremely influential in fostering this growth was allowing students to collaboratively participate in decisions about the learning process once the broad parameters for the curriculum had been determined.

Two similar studies which were conducted with students in college-credit allied health courses further support these teaching-style findings. The relationship of teaching style to academic achievement was explored for allied health professionals taking credit classes in a nontraditional format such as evening courses, week-end courses, or off-campus courses.[3] Once again teaching style was found to be significantly related to student achievement. Students of teachers practicing a learner-centred approach learned above the average for the total group. However, students in the classes of instructors firmly implementing a teacher-centred approach also achieved above the average. Student achievement was significantly lower for students where instructors moderately employed teacher-centred techniques.

A second study expanded this allied health study. The follow-up study compared these nontraditional continuing education professionals to the students in the traditional, on-campus, and daytime program.[4] Similar results were found. Among the significant differences, the greatest learning gain was by students of teachers using the learner-centred approach; the high teacher-centred approach resulted in slightly above average gains while the moderate teacher-centred approach produced the least student achievement. This study also explored the interaction of teaching style to the learner's status as either a nontraditional or traditional student. The nontraditional group, which included more adults and those who were not going to school to satisfy basic certification requirements, achieved more than the traditional group under all variations of teaching style except for the moderately teacher-centred approach.

IMPLICATIONS

Studies such as these indicate that teaching style has a significant effect on student actions. This is not a surprising finding if education is viewed as a transactional encounter

> in which learners and teachers are engaged in a continual process of negotiations of priorities, methods, and evaluative criteria. Viewing teaching-learning encounters as transactional means that the sole responsibility for determining curricula or for selecting appropriate methods does not rest either with the educator or with the participants.[5]

Both the teacher and the learner enter the transaction with an established set of values, experiences, and ideas. As they interact, each is affected by the other. As an external source to the student's existing situation, the teacher can present to the learner new and diverse alternatives for ways of thinking, of interpreting their experiences, and of critically examining their values. While some of these alternatives might be exhilarating and others may produce anxiety,[6] the exact nature of this exchange is influenced by elements that both the teacher and student bring to the encounter.

Teachers enter this encounter with distinctive teaching styles. Yet, where do these styles come from? Teachers do not simply decide to have a certain kind of style. Instead, their styles are actual behaviours which operationalize their beliefs and values concerning teaching and learning. These actions in turn can be related to various philosophical schools of educational thought. It has been suggested that a knowledge of one's educational philosophy is a crucial criterion for distinguishing between professionals and practitioners in teaching.[7] "It has been further posited that in adopting a philosophy an educator may (1) adopt a currently elaborated philosophy and consistently practice it, (2) adopt an eclectic approach from different theories, or (3) select one specific theory as a framework upon which to construct a personal educational philosophy.[8] Regardless of the approach used, the ABE teacher should realize that each philosophy is built upon a set of assumptions.

"These assumptions are interrelated, and some assumptions from one philosophy are not compatible with those of another philosophy. In addition, the teaching-style research indicates that the actions generated from various combinations of these assumptions produce different results with learners. In order to analyze critically their own actions in the classroom and to relate this behaviour to the teaching-style findings, teachers need to be aware of these assumptions. Furthermore since an educational philosophy is a subset of one's overall life philosophy, teachers should ask themselves which of these assumptions most comfortably fits their approach to life, teaching, and learning. Inconsistencies among the basic assumptions which a teacher favors can indicate areas for further rigorous analysis and potential areas for change.

Philosophy is concerned with what beliefs people hold important and what

what are the teacher's goals in the classroom, (2) what does the teacher want to happen in the learning process, (3) how does the teacher view the learner, (4) how does the teacher define learning, and (5) how does the teacher know that learning is occurring. Answers to questions such as these will uncover the fundamental beliefs and values undergirding a teacher's educational philosophy.

Although several possible philosophies exist, much current educational practice can be categorized as either teacher-centred or learner-centred. The teacher-centred approach is currently the dominant approach throughout all levels of education in North America and is closely related to the ideas of B. F. Skinner. This approach to learning assumes that learners are passive and become active by reacting to stimuli in the environment. Elements that exist in this environment are viewed as reality. Motivation arises from basic organic drives and emotions or from a tendency to respond in accordance with prior conditioning. Since humans are controlled by their environment, schools have the responsibility of determining and reinforcing the fundamental values necessary for the survival of the individual and the society.[9]

"In this teacher-centred approach,

> the role of the teacher is to design an environment which elicits desired behaviour toward meeting these goals and to extinguish behaviour which is not desirable. The teacher, then, is a contingency manager, an environmental controller, or behavioural engineer who plans in detail the conditions necessary to bring about desired behaviour.[10]

A teacher-centred approach is implemented in the classroom in several ways. Learning is defined as a change in behaviour. Therefore, acceptable forms of the desired behaviour are defined in overt and measurable terms in behavioural objectives. Outcomes are often described as competencies which the student must display after completing the educational activity. The attainment of the competencies is determined by evaluating the learner with either a criterion-referenced or a norm-referenced test. Through such a method, both the teacher and learner are accountable for the classroom activities.

Although a teacher-centred approach is widely practiced in adult education, the tenets of a learner-centred approach are strongly supported in the field's literature. This approach is closely associated with the writings of Abraham Maslow and Carl Rogers. A learner-centred approach assumes that people are naturally good and that the potential for individual growth is unlimited. Reality is relative to the interpretations that individuals give to their surroundings as they interact with them. Consequently, behaviour is the result of personal perceptions. Experiences, which are viewed as events in which a person acts purposefully with the anticipation of probable consequences, play an important role in learning. Motivation results from people's attempts to achieve and maintain order in their lives. In this process, they are proactive and are capable of taking responsibility for their actions.[11]

In the classroom, the whole focus of learner-centred education is upon the individual learner rather than a body of information.[12] Here the teacher strives to present subject matter in a manner conducive to student's needs and to help students develop a critical awareness of their feelings and values. The central element in a learner-centred approach is trust; while the teacher is always available to help, the teacher trusts students to take responsibility for their own learning. Learning episodes are often group activities that stress the acquisition of problem-solving skills, that focus on the enhancement of the self-concept, or that foster the development of interpersonal skills. Learning is a highly personal act. It is best measured by self-evaluation and constructive feedback from the teacher and co-learners.

MOTIVATIONAL INFLUENCES

Learners are the teacher's partners in the teaching-learning transaction. The current findings from the teaching-style research indicate that factors which the learners bring to the exchange influence the effectiveness of various teaching styles. Thus, a major learner variable appears to be motivation. Two types of motivation exist. Intrinsic motivation stems from the learner and is associated with the inherent value of an activity. Extrinsic motivation is stimulated by a force external to the learner and consequently may be associated with the value of the outcome of an activity. Learners come to the ABE classrooms with different motivations. While learners are responsible for their own motivation and while teachers cannot directly motivate learners, the instructor can create a stimulating environment and thereby influence learners.[13] However, each teacher must ask, "Is the student motivated to learn with me?"

Although none of the teaching-style research has explicitly measured motivation, motivational factors which commonly exist in many educational situations have been used to explain teaching-style findings. In situations with extrinsically motivated learners who were concerned with satisfying external criteria, the teacher-centred approach to instruction was most effective. This was found among GED students preparing for the high school equivalency examination and traditional college students seeking a degree to satisfy entry requirements into the allied health field. In contrast to these task-oriented situations, the learner-centred approach was most effective in conditions involving intrinsically motivated learners and learning in the affective domain. Basic education and ESL students and those involved in continuing professional education are participating in the process of lifelong learning. A discussion of issues relating to such things as moral judgement require a trusting environment before a learner can critically explore, reflect upon, and share experiences and ideas. Thus, as ABE teachers examine their personal philosophy, they should also assess the motivational factors influencing their students. The combination of teacher and student factors can then be compared to the available research findings.

STYLE AND EVALUATION

Teaching style is also related to evaluation methods because teachers have different views of what constitutes learning and different methods for determining if and when learning took place. Evaluation may be categorized as either summative or formative. Summative evaluations are conducted at the end of an activity and serve as a summary of what occurred during the learning process. While summative evaluation results may be used to diagnose the learning needs for the next activity, they are not useful for modifying events related to the current activity. Formative evaluations, on the other hand, are conducted while the learning activity is in process. Information from th evaluation is used to reformulate the ongoing activity in order to achieve th greatest possible success. Each type of evaluation has its own strengths and useful when employed in an appropriate situation.

Each type of evaluation is utilized to a different degree with the vario teaching styles. The teacher-centred approach has a need for measuring th success of the student in learning the curricular materials presented during the planned activities of the teacher. The learner-centred approach depends on numerous formative evaluations to monitor a student's continuous progre and uses this evaluation information to modify the learning situation to fit the student's needs.

ABE teachers are under strong pressures to use summative evaluations. The requirements of funding agencies and local administrators to document student progress encourage the use of summative evaluations. The dominance of summative evaluation techniques at all levels of education in North America further fosters its use. Nevertheless, ABE teachers should realize that an alternate type of evaluation exists. The actual evaluation techniques that they use should be dependent upon their view of learning as implemented through their teaching style and indicated by the needs of their students.

CONCLUSION

Much recent research and interest in education has focused on teaching style. Several studies in adult education indicate that teaching style does influence student outcomes. Although caution must be exercised in interpreting the results of these studies because they isolate only one of the many variables in the complicated human interaction that is occurring in the classroom, the results suggest that teachers do make a difference. This is true in the academic area as well as in areas of personal development. The nature of these differences supports the view of education as a transactional encounter between the teacher and the learner. As teachers look at their own teaching style and the philosophical assumptions upon which it is based, they must also examine that other crucial element in the exchange — the learner. Equipped with a knowledge of their own classroom tendencies and of how these influence their interpretation of student's motivational needs, ABE teachers can use the information on teaching style to plan and conduct effective learning activities which both utilize their strengths and facilitate adult learning.

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* * *

Understanding and Facilitating Adult Learning

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monly emphasize the experiential dimension of adult learning and stress the self-directedness of adults. Self-directedness is seen both as an empirically observable trait and as a propensity that should be encouraged. We should note, however, that the samples for the studies on which these generalizations concerning the nature of adult learning are based are culturally specific. To this extent, the research on adult learning is no different from that on its childhood equivalent, where, as a massive comparative study of primary school quality recently acknowledged, "With less than 5 percent of the world's school population, the United States accounts for the majority of the world's empirical research on education" (Heynemman and Loxley, 1983, p. 1164).

In research into adult learning, moreover, the adults who form the sampling frames are for the most part ethnically homogeneous; that is, they are Caucasian Americans. They are also drawn chiefly from middle-class or upwardly mobile working-class families, since this is the foremost clientele of continuing education programs. To base a comprehensive theory of adult learning on observations of white, middle-class Americans in continuing or extension education classes in the post-Second World War era is conceptually and empirically naive. It is, admittedly, cumbersome to preface every comment regarding adult learning theory with a caveat concerning the cultural and class specificity of one's sample and, hence, the limited generalizability of one's conclusions. Nonetheless, we fall far too frequently into the mistake of declaring that research reveals that adults, in a generic sense, learn in a certain way.

The eagerness to construct an empirically verifiable theory of adult learning is inextricably bound up with the quest for professional identity on the part of adult educators. As much as we would like to believe that the conduct and dissemination of research are motivated by an intellectually altruistic search for truth, it must be recognized that the definition of research "problems" and the selection of appropriate topics for investigation often reflect wider societal or professional imperatives. In this case, the reality is that the discovery of a set of learning behaviors that are unmistakably adult would be a cause for substantial professional celebration. If we could discover certain empirically verifiable differences in learning styles between children (as a generic category) and adults (as a generic category), then we could lay claim to a substantive area for research that would be unchallengeably the property of educators and trainers of adults. Such a claim would provide us with a professional identity. It would ease the sense of insecurity and defensiveness that frequently assails educators and trainers of adults in all settings when faced with the accusation that they are practicing a nondiscipline. The discovery of an empirically discrete domain of adult learning would grant to us an intellectual and professional raison d'etre.

Such a revelation is unlikely to transpire for some considerable time, and it may be that the most empirically attestable claim that can be made on behalf of adult learning styles concerns their range and diversity. Certainly we should be wary of claiming too high a level of generalizability for theories and concepts of adult learning derived from studies of white Americans in the lower-middle, middle, and upper classes. How can we write confidently of adult learning style in any generic sense when we know little (other than anecdotally) of the cognitive operations of, for example, Asian peasants, African tribespeople, or Chinese cooperative laborers? Even within North American culture the empirical accuracy of generalizations about adult learning principles is highly questionable in that we have few studies of the learning styles of Native Americans, white working-class adults, Hispanics, blacks, or orientals.

Applying New Research Instruments

The body of research literature discussed in the preceding section is one characterized by a mixture of speculation and empirically observed features of adult learning. The studies cited use a variety of methodological approaches and survey different samples, with the result that baseline comparisons are extremely hard to make. In recent years a number of researchers and practitioners have sought to synthesize the findings of this body of research into some framework of central adult learning principles. These central principles have then been converted into various research instruments that their designers believe can be applied to examining the extent to which principles of adult learning are being exemplified in any given practice setting. Two of these instruments—the Principles of Adult Learning Scale (PALS) and the Andragogy in Practice Inventory (API)—were designed to test the presence of effective facilitation in practice rather than to provide empirical measures of forms of adult learning. In other words, both these instruments can be used to determine whether or not (in the eyes of the designers of these instruments) teachers or programmers are behaving as effective facilitators.

The PALS was devised by Conti (1978, 1979, 1983, 1985) to measure the extent to which practitioners supported the collaborative mode of teaching-learning that is usually cited by writers in the field as an exemplification of good practice. Conti surveyed a number of highly regarded theorists, including Freire (1970b), Lindeman (1926), Houle (1972), Knox (1976), Kidd (1973), Knowles (1984), and Bergevin (1967), to discover what they held to be the basic assumptions of adult learning. Not surprisingly, his findings are similar to those identified by the theorists reviewed in the present chapter and to the central principles of effective facilitation identified in Chapter One. Hence, Conti found these writers to argue that "the curriculum should be learner centered, that learning episodes should capitalize on the learner's experience, that adults are self-directed, that the learner should participate in needs diagnosis, goals formation, and outcomes evaluation, that adults are problem centered, and that the teacher should serve as a facilitator rather than as a repository of facts" (1983, p. 63).

For his doctoral dissertation, Conti determined "to develop and validate an instrument capable of measuring the degree to which adult education practitioners accept and adhere to the adult learning principles that are congruent with the collaborative teaching-learning mode" (1979, p. 164). Drawing on Flanders's (1970) Interaction Analysis Categories that were established to assess student initiating actions, Conti constructed a five-point Likert scale to record practitioner responses on a number of items that were based on collaborative principles but "reworded in behavioral terms compatible with realistic experiences of practitioners" (Conti, 1979, p. 165). For each of the items said to describe actions congruent with the collaborative mode, a separate item was included to describe practice antithetical to the collaborative mode. The PALS instrument was tested for construct, content, and criterion-related validity by two juries of adult education professors and fifty-seven practitioners in six separate programs. Testing for reliability was undertaken in phase two of the field testing by twice administering the scale to twenty-three adult basic education practitioners in Chicago and comparing the congruence of the scores. The outcome of the study was a forty-four-item rating scale that Conti believes can be used to assess the effectiveness of collaborative modes in producing significant learning gains or to identify themes and topics around which in-service training activities could be designed for staff development.

Since its initial framing, Conti (1983) reports that the PALS has been used in numerous training workshops and that it has formed the basis for three research studies. Dinges (1980) used the instrument to study 265 Illinois ABE teachers in a staff development needs assessment, Pearson (1980) administered PALS to 99 midwestern training directors to investigate the relationship between managerial style and the adoption of collaborative modes of facilitation, and Douglass (1982) used it to examine the relationship of professional training in educating adults to the degree of support granted to the collaborative mode by 204 hospital educators and cooperative extension educators in the state of Washington. In addition, scores have been collected from 153 Texas practitioners in adult basic and allied health education. Not surprisingly, perhaps, the research of Pearson (1980) and Douglass (1982) indicates that the chief variable positively correlated with the adoption of a collaborative approach in management training, hospital education, and cooperative extension is the amount of previous formal education (specifically training in adult education) undertaken by these practitioners. It seems, from these studies at least, that those who are trained as educators of adults do indeed incorporate collaborative principles into their subsequent professional activities. After Conti's presentation of the PALS research at a recent conference of university adult educators in Britain (Conti, 1984), we can expect some cross-cultural validation of this instrument through comparative analyses of educators' use of the collaborative mode in Britain and North America.

Turning to the API, which was devised by Suanmali (1981) on the basis of Mezirow's (1981) interpretation of andragogy and his specification of a charter for andragogy, we find that it is a ten-item inventory of educator practices. To help adults enhance their capability to function as self-directed learners, the educator must (Suanmali, 1981, pp. 31-32):

1. progressively decrease the learner's dependency on the educators;
2. help the learner to understand how to use learning resources—especially the experiences of others, including the educator, and how to engage others in reciprocal learning relations;
3. assist the learner to define his/her learning needs—both in terms of immediate awareness and of understanding the cultural and psychological assumptions influencing his/her perceptions of needs;
4. assist learners to assume increasing responsibility for defining their learning objectives, planning their own learning programs and evaluating their progress;
5. organize what is to be learned in relationship to his/her current personal problems, concerns and levels of understanding;
6. foster learner decision-making—select learner-relevant learning experiences which require choosing, expand the learner's range of options, facilitate taking the perspectives of others who have alternative ways of understanding;
7. encourage the use of criteria for judging which are increasingly inclusive and differentiating in awareness, self-reflexive and integrative of experience;

8. facilitate problem-posing and problem-solving, including problems associated with the implementation of individual and collective action; recognition of relationship between personal problems and public issues;
9. reinforce the self-concept of the learner as a learner and doer by providing for progressive mastery; supportive climate with feedback to encourage provisional efforts to change and to take risks; avoidance of competitive judgment of performance; appropriate use of mutual support groups;
10. emphasize experiential, participative and projective instructional methods; appropriate use of modelling and learning contracts;

This instrument was examined by 147 members of the American Commission of Professors of Adult Education. The professors interviewed displayed a remarkable degree of agreement concerning the extent to which the practices identified above were indicative of good andragogical practice.

Finally, James (1983) and Manley (1984) have conducted small-scale Delphi (or modified Delphi) investigations of what practitioners and professors of adult education regard as exemplary principles of practice that facilitate adult learning. Manley's review of the literature and her survey of eighteen members of the American Commission of Professors of Adult Education yield a familiar cluster of categories. The professors surveyed agree that adult learning is best facilitated when learners are engaged as participants in the design of learning, when they are encouraged to be self-directed, when the educator functions as a facilitator rather than didactic instructor, when individual learners' needs and learning styles are taken into account, when a climate conducive to learning is established, when learners' past experiences are utilized in the classroom, and when learning activities are deemed to have some direct relevance or utility to the learners' circumstances.

In a more ambitious study, similar to Conti's researches, James (1983) devised the following set of basic principles of adult learning after a team of researchers had undertaken a search of articles, research reports, dissertations, and textbooks on adult learning (p. 132):

1. Adults maintain the ability to learn.
2. Adults are a highly diversified group of individuals with widely differing preferences, needs, backgrounds, and skills.
3. Adults experience a gradual decline in physical/sensory capabilities.
4. Experience of the learner is a major resource in learning situations.
5. Self-concept moves from dependency to independency as individuals grow in responsibilities, experience and confidence.
6. Adults tend to be life-centered in their orientation to learning.
7. Adults are motivated to learn by a variety of factors.
8. Active learner participation in the learning process contributes to learning.
9. A comfortable supportive environment is a key to successful learning.

All nine principles were validated by a jury of national adult education leaders, and from these principles a questionnaire was constructed comprising forty-five statements (from four to six statements for each of the nine principles identified). The questionnaire was then administered to educators in five settings: hospital patient education, university extension programs, community colleges, business and industry, and agricultural extension. Some interesting differentials emerged in the study. Hospital patient educators, university extension instructors, community college instructors, and agricultural extension

instructors all perceived themselves as implementing all the principles identified "frequently," while business and industry personnel perceived themselves as implementing principles one, two, and eight "sometimes" but the others "frequently." An interesting difference was also revealed regarding the principle ranked highest by these practitioners. In hospitals, universities, community colleges, and agricultural extension, principle nine–"a comfortable, supportive environment is a key to successful learning"–was ranked as the most important. In business and industry, however, principle three–"adults experience a gradual decline in physical/sensory capabilities"–was ranked highest. In contrast to the findings of Conti's PALS research, the principle referring most explicitly to collaborative modes of teaching and learning (principle eight) was ranked relatively low by instructors in all five settings (James, 1983, p. 134). In Chapter Ten in particular, a number of studies of how practitioners do or do not conform to principles of good practice in real life program development settings will be examined. For the present it is enough to say that the foregoing instruments all represent contributions toward building a body of research on principles of good practice. The next chapter takes one particular aspect of the principles previously discussed–that of the adult's assumption of self-direction in learning–and examines the validity of this concept as an operational aim to be pursued in teaching-learning transactions. It also considers critically the research on which ideas about self-direction in adult learning are based, and it proposes a reinterpretation of this concept to take into account the extent to which self-directed adults exhibit an empowered autonomy in their learning activities.

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PRINCIPLES OF ADULT LEARNING SCALE:
FOLLOW-UP AND FACTOR ANALYSIS

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The Problem

A large portion of the adult education literature endorces the collaborative teaching-learning mode as an appropriate method for assisting adults in the learning process. In 1978, the Principles of Adult Learning Scale (PALS) was developed to measure the degree of practitioner support of these principles. Although the original study with a field test group of 57 produced a valid and reliable instrument, the stability of the normative statistics for the instrument and the generalizability of the instrument to the multiple audiences within the adult education enterprise remained unestablished. These depended upon the use of PALS in a variety of settings and on the follow-up analysis of this larger pool of data. Such an analysis could also provide additional checks on the construct validity of the instrument.

Review of Related Literature

Although there are various modes of instruction, a significantly large portion of the adult education literature generally supports the collaborative mode as effective and appropriate for teaching adults. The writings of Lindeman, Bergevin, Kidd, Houle, Knowles, and Freire exhibit much commonality in the basic assumptions of adult learning. Collectively they argue that the curriculum should be learner centered, that learning episodes should capitalize on the learner's experience, that adults are self-directed, that the learner should participate in needs diagnosis, goals formation, and outcomes evaluation, that adults are problem-centered, and that the teacher should serve as a facilitator rather than a repository of facts.

In the collaborative mode, adult education is learner centered and a cooperative venture in which the learner is a full partner (Bergevin, 1967, p. 168). In this process, the learner is put first and education seeks to solve the peculiar problems of the participants. This approach emphasized that people, not subjects, are taught and that subjects are merely the vehicles and examples for learning (Bergevin, 1967, p. 92). Since, "the approach to adult education will be via the route of situations, not subjects" (Lindeman, 1926/1961, p. 6), in the collaborative mode the curriculum is built around the student's needs and interests with the central purpose of assisting the learner in "being" and "becoming" (Kidd, 1976, p. 125).

In this mode, the role of experience is emphasized. Adult education assists adults in becoming aware of their significant experiences and in relating these to other events in their lives (Lindeman, 1926/1961, p. 109). For adults, their experiences serve as a ever growing reservoir that can serve as a learning resource (Knowles, 1973, p. 39) and are a key in stimulating their engagement in learning (Kidd, 1976, p. 271).

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One assumption of the collaborative mode is that adults are moving in the direction of increased self-direction (Knowles, 1970, p. 39) and that they have the inherent ability to control their own lives (Freire, 1970). This development is fostered by adults taking responsibility for their own learning (Kidd, 1976).

In the collaborative mode, adults become involved in their education by appraising needs, goals and outcomes. This involvement leads to learner responsibility and autonomy, increases the relevancy of the learning activities, and assures that the learners goals are fully achieved (Houle, 1972; Kidd, 1976; Knowles, 1970).

The collaborative mode assumptions recognize that adults are problem-centered. Adults have a greater interest in learning when they are dealing with problems which directly concern them (Bergevin, 1967, p. 148) and which have immediate application (Knowles, 1970, p. 39). Importantly, they have within themselves the capacity to solve their own problems (Freire, 1970).

In the collaborative mode, the role of the teacher is to function as a facilitator. The teacher's task is to create a supportive environment in which the learner is free to take risks (Kidd, 1976; Knowles, 1970) and "to draw out, not pour in" (Lindeman, 1926/1961, p. 119; Freire, 1970). When the teacher functions in this manner, education becomes a cooperative art (Houle, 1972, p. 34).

Thus, a significant portion of the adult education literature supports the assumptions of the collaborative teaching-learning mode. Although various authors stress different elements composing this mode, they all profess a learner-centered approach in adult education in which the key word is always participation (Lindeman, 1926/1961, p. xvi).

Principles of Adult Learning Scale

The Principles of Adult Learning Scale (PALS) was developed to measure practitioner support of the collaborative mode as described in the adult education literature. The items were formulated from concepts specifically stated in the adult education literature. The construct validity for the items of the instrument was established through the testimony of juries of adult educators. The content validity was established by field tests with adult basic education practitioners in full-time public school programs in Illinois. The first phase of the field-testing consisted of activities to improve the discriminating power of potential items. The second phase involved the testing of a similar form of the instrument with 57 practitioners in a variety of adult basic education settings. Criterion-related validity was established by the actual classroom observation of those who had scored two standard deviations either above or below the mean. These observations were rated according to the Flanders Interaction Analysis Categories (FIAC), and these scores were compared to PALS. The FIAC was selected because it measures initiating and responsive classroom actions and because the actions described in Flander's definition of initiating are highly congruent with the characteristics of the collaborative mode. Reliability was established by retesting a group of 23 adult basic education practitioners after a seven day interval. In addition to these traditional checks of validity and reliability, social desirability and congruency of item interpretation by practitioners were also investigated.

As a result of this procedure, a reliable and valid 44 item summated rating scale, which is rooted in the adult education literature, was produced. The instrument can be completed in less than 15 minutes and scored quickly. This study suggested a mean of 146 and standard deviation of 22 for the instrument. Conti (1978, 1979) has described in detail the development of the instrument, made suggestions for its use in empirical studies and with practitioners, recorded the final form of the instrument, and reported on procedures for scoring.

Follow-Up Uses of PALS

Since its development, PALS has been used in numerous adult educator training workshops and in three doctoral studies. Individual scores from these uses have provided a diverse data set for re-examining the normative statistics for the instrument and for formulating insights related to its future use.

The analysis of 778 cases indicates that the descriptive statistics for PALS are stable. These cases were drawn from a variety of institutional settings in different areas of the United States. In a staff development needs study, Dinges (1980) tested 265 adult basic education teachers throughout Illinois with the instrument. Investigating the relationship between managerial style and support of the principles in the adult education literature, Pearson (1980) administered PALS to 99 midwestern training directors. Douglas (1982) used PALS as the measurement device in a study examining the relationship of professional training in adult education to the degree of support of the collaborative mode by 204 hospital educators and cooperative extension educators in Washington. In addition, 153 scores were collected from Texas adult education practitioners in the areas of adult basic and allied health education. Although these groups represent a much broader sampling of the adult education community than the pilot group, the descriptive statistics for each as shown in Table 1 are similar to those produced in the original study. The similarity between the mean and standard deviation scores for the total of all groups and the original pilot group indicates that 146 is an accurate mean for PALS. This additional data suggests that the standard deviation should be 20.

Table 1

Mean and Standard Deviation
of Various Adult Education Groups on PALS

Group	Size	Mean	Standard Deviation
Original Sample	57	145.60	22.14
Hospital Educators	97	149.25	17.90
Training Directors	99	148.76	22.30
Cooperative Extension	107	146.30	18.46
Texas Adult Educators	153	144.02	21.26
Illinois ABE Teachers	265	145.14	19.96
Total	778	146.09	20.28

This expanded data set lends additional support for the generalizability of PALS. Although PALS was originally designed for use with adult basic education practitioners, an analysis of variance as shown in Table 2 indicates that no significant difference exists among the various groups tested (p=.28). Therefore, even though the wording of some items may not be specifically appealing to some areas of the field, PALS can be used by adult educators in a wide variety of settings to measure support of the collaborative mode.

Table 2

Analysis of Variance Between
Various Group Sampled with PALS

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	5	2,586	517	1.26	.28
Within Groups	772	316,838	410		
Total	777	319,424			

Factor Analysis of PALS

The large number of cases which were collected made it possible to conduct a factor analysis on PALS and thereby to statistically check the construct validity of the instrument. "Factor Analysis is based on the fundamental assumption that some underlying factors, which are smaller in number than the number of observed variables, are responsible for the covariation among the observed variables" (Kim & Mueller, 1978, p. 12). If PALS correctly measures the collaborative theory in the literature, then this data reduction technique should produce identifiable factors which are similar to the major concepts discussed in the literature.

When conducting a factor analysis, it is desirable to have a 10 to 1 ratio of cases to variables. This was exceeded by using 509 cases for this 44 item instrument. Although researchers often delete items below a .4 loading from a factor, Kim and Mueller (1978) warn that"the deletion of variables in order to have a neat factorial structure can lead into an erroneous conclusion" (p. 68). In addition, since "a good factor analysis requires the researcher to know a great deal about the factorial structure of variables" (p. 68), each item was assigned to the factor in which it had the highest loading. In this way, every item in the instrument was retained for factor analysis.

The SPSS Factor Analysis program utilizing principal factoring with iteration and varimax rotation was used. This procedure produced seven discernable factors. In these factors, 31 items loaded above .40; three were between .35 and .40; seven were between .30 and .35; and only three were below .30.

Factor 1 contained 12 negative items. These items focused on evaluation by formal tests, on comparing the learners to outside standards such as standarized tests and middle-class values, and on control of the learner by means of quiet deskwork, disciplinary action, and teacher determination of objectives. These items are antithetical to the collaborative concept of Learner Centered Activities.

The nine items in Factor 2 related to Personalizing Instruction. They dealt with the self-pacing of learning, utilizing a variety of materials, methods, and assignments, and objectives which are based on individual motives and abilities.

Factor 3 was made up of six items and was entitled Relating to Experience. Items in this factor focused on problem solving, utilizing prior experience, and relating learning activities to everyday life.

The four items in Factor 4 stressed the importance of Assessing Student Needs. Items related to individual conferences, informal counseling, and learner involvement in diagnosis composed this factor.

Climate Building was Factor 5. These four items stressed self-control through classroom breaks and interaction with other students. Also included were the teacher's elimination of barriers by utilizing the existing competencies of the students and by accepting errors as a natural part of learning.

Factor 6 dealt with Participation in the Learning Process. The four items in this factor dealt with learner demonstrating self-direction in selecting the learning content, evaluating performance, and identifying problems.

Finally, Factor 7 contained the remainder of the negative items. These five items were the opposite of Flexibility for Personal Development. They contained the negative traits of avoiding value issues, of maintaining classroom discipline, of entransigence in modifying original objective, and of viewing the teacher as primarily a provider of knowledge.

The factors produced by this analysis support the construct validity of PALS. These seven factors, which were statistically derived, are similar to the general principles found in a review of the adult education literature supporting the collaborative mode. This statistical analysis using a broad sampling of adult education practitioners supports the testimony of the original jury for PALS and further confirms the construct validity of the instrument.

Empirical Uses of PALS

The stable normative statistics for PALS suggests that it is a valid instrument for use in research studies. In these studies, PALS can be used to measure the degree of practitioner support of the collaborative mode which is widely supported in the literature. This measurement can be combined with a wide variety of other controls to produce research-based data to evaluate the validity of the literature base and to provide situational specificity to the general principles discussed in the literature, Variables that may be studied are student growth in the cognitive and affective domain, the relationship of teaching and learning style, and factors influencing the situational setting such as the nature of the curriculum or the institutional setting.

By combining a variety of studies in areas such as these, it will be possible to provide greater specificity to the literature. For example, Pearson (1980) found that congruency exists between management style and teaching style and, more importantly, that the amount of formal education was the major influence in accepting a collaborative approach in these areas. Douglas (1982) took this concept one step further when he found that the amount of formal training specifically in adult education was the major influence on accepting a collaborative approach in an adult education setting. Just as these two studies have explored a similar area, PALS can serve as the measurement device for other studies dealing with a variety of the variables in the adult learning transaction.

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