AN ANALYSIS OF ADULT LEARNING PRINCIPLES AND PRACTICES IN AN URBAN JUNIOR COLLEGE

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Scope and Method of Study: The purpose of this study was (1) to identify the basic principles of adult learning that underlie adult education programs as affirmed by authoritative sources and (2) to determine the extent these principles are being implemented by the full-time faculty in an urban community junior college program. Through a comprehensive literature review a research team of six individuals identified the Principles of Adult Learning. These Principles were validated by a jury of adult education leaders. From the validated Principles a questionnaire was developed to measure the extent of application of the Principles. The questionnaire was verified, checked for reliability, and then adapted for the several populations to be studied by the research team. The population of this study was composed of the full-time faculty of an urban junior college in the southwest. Out of 124 questionnaires distributed to the faculty, 78 were returned. From the data collected, descriptive statistics including means were computed to indicate the extent of use of each Principle as perceived by the faculty. The Principles were rank ordered by means, and the mean value of each Principle was presented according to different variables.

Findings and Conclusions: The results of the study indicated that there are nine basic Principles of Adult Learning and that the developed questionnaire is a potentially effective tool for analyzing practices in the community college setting related to application of the Principles. This study revealed that full-time faculty of an urban junior college perceived themselves as "frequently" implementing the majority of the Principles. This study also reported faculty perception of the extent of implementation of the Principles according to such factors as sex, age, faculty division, formal degrees, other academic settings, teaching experience outside the academic, and preparation for teaching the adult learner.

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TABLE OF CONTENTS

Chapter Page

LIST OF TABLES

CHAPTER I

THE RESEARCH PROBLEM

Introduction

In viewing the history of the community or junior colleges in the United States, the most recent development has focused on adult or continuing education and community services. In 1969, community college adult education enrollment was conservatively estimated as 1,276,000 or 15.3% of the total adult education in the public education system (Oakes, 1976). Between 1974 and 1976, enrollment of students 35 and over at two-year colleges jumped 30% (Aronson, 1980). The community college has designed programs for fully-employed adults, retired adults, women entering college course work for the first time, and mothers of school-age children. Some of the courses are offered for credit, others are noncredit. The courses may be specially tailored for this clientele or may parallel daytime courses (Thornton, 1972). In any case, there is considerable evidence that the community college is focusing on serving the adult learner at a level never attempted before. Women, minorities, and persons over 24 have become the "traditional" rather than the "nontraditional" student (Gilbert, 1979).

Forty-seven percent of the junior college population was over 23 years of age in 1960 (Medsker, 1960). Overall, the average age of students enrolled in all community college programs is now over 29 (Aronson, 1980). As a specific example, in 1978 an urban

community-junior college in the Midwest reported its median age of all students enrolled in credit programs to be 27.1 years (Tulsa Junior College, 1978, p. 4). These demographic statistics illustrate graphically the influx of adult learners into these institutions of higher education. It is projected that this trend will increase especially in the 1980's (Johnstone and Rivera, 1965; Cross, 1980; Gleason, 1980).

In the midst of this development, community and junior college faculty of the 1960's were characterized as those trained to teach at the secondary level with a small number having come from four-year colleges and universities (Hillway, 1958; O'Banion, 1973). More recent studies indicate that faculty members are becoming more diverse and being recruited increasingly from several sources including graduate schools, industry, professions, and four-year colleges (Cohen, 1975; Bleyer, 1979). Some attempt has been made to develop faculty training programs especially designed for junior colleges (Medsker and Tillery, 1971; Thornton, 1972; Venuto, 1972). However, only recently has there been attention given to the special field of adult learning with some attempt to acquaint community college faculty with the research on how adult learning occurs best. In reference to the community college Oakes (1976, p. 132) stated, "One of the most important questions to be answered is whether adults should be taught in the same way as children and high school students and college students or whether they should be taught differently."

A great deal of research has emerged from the field of adult education indicating that adult learning does have unique characteristics. The art and science of teaching adults, andragogy, is a new and fast developing field in which much recent research and writing has been

done. There are many concepts, philosophies, theories, and assumptions as to how adult learning occurs and should occur. Authorities now recognize certain principles, assumptions, and concepts as basic to adult education.

Problem

The difficulty in developing training for faculty to acquaint them with adult learning principles lies in the fact that these concepts have not been pulled together to form a basic list of principles on how adults learn. The research is so scattered and fragmented that there is a need for these concepts to be collected and formed into a concise and comprehensive list. Furthermore, basic principles have not been compared with how adult education is actually practiced in the field. The principles seem to be intuitively accepted, but it is not known to what extent they are already being implemented, especially in relation to community-junior colleges.

Purpose

The purpose of this study was:

1. to identify the basic principles of adult learning that underlie adult education programs as affirmed by authoritative sources, and
2. to determine the extent these principles are being implemented by full-time faculty in an urban junior college program.

Objectives of the Study

The prominent objective of the study was to determine the nature and extent to which identified and established basic principles about adult learning are being seriously considered and implemented in instructional programs in an urban junior college.

Specific objectives were as follows:

1. Through a comprehensive review of literature, to synthesize scholarly opinions, judgements, and completed research by compiling "basic principles about adult learning."
2. To establish these "basic principles" into a concise and comprehensive listing.
3. To subject the listing of "basic principles" to a panel of jurors to review, and verfiy, and validate.
4. To construct and validate a questionnaire designed to measure the frequency of use of the principles of adult learning by instructors.
5. To interpret the descriptive statistical data to indicate the extent to which the "basic principles" were being implemented in the instructional programs in an urban junior college.

Need for the Study

Given the high percent of adult clientele and the expected increase of this clientele in the credit and noncredit programs of community and junior colleges, it would be beneficial to determine how faculty is to teach these adults. How does the teaching of adults in community colleges compare with research on how the adult learns best? This question would be a vital part of any needs assessment or staff development

program. Data gained by pursuing such a question would have implications for future staff training and recruitment models if a sensitivity to the unique needs of adults is to characterize the program. The study could also influence and inform special junior college faculty training courses offered by the four-year universities. The study would speak directly to the statement that "Improved Staff Development leads to improved program Development and Organizational Development which leads to improved Student Development" (DelGrosso, 1976, p. 14).

Assumptions of the Study

1. Use of the Likert-type scale items assumes that the items have the characteristic that the more favorable the individual's attitude toward an item, the higher the expected score for the item.
2. It was assumed that since the study included only one junior college faculty inferences would not be drawn for other populations.

Limitations of the Study

1. Only one community college, in an urban area setting in the Southwest, was included in this study.
2. Only the full-time faculty of the metro campus was given the questionnaire.
3. Perceptions of the faculty were the basis for the data, while student perceptions were not measured.

Definitions

Adult -- a person who has come into that stage of life in which he has assumed responsiblity for himself and usually for others, and who has concomitantly accepted a functionally productive role in his community (Verner, 1964, p. 29).

Adult Education -- includes all educational programs for adults who have assumed some of the major responsibilities of adulthood such as job, family, voting; who are no longer full-time students but who engage on a part-time basis in a systematic and sustained program designed to alter knowledge, skills, and attitudes.

Andragogy -- a set of teaching practices creating a process for helping students to become self-directed learners.

Authoritative sources -- information resources for the generation of Principles. These resources include recognized leaders in the field, books, articles, research reports, and unpublished dissertations.

Community College, Junior College, Community-junior College -- are used interchangeably to designate institutions of higher education authorized to offer courses no higher than sophomore level. These two-year programs would normally include transfer, vocational, remedial, adult and continuing education.

Courses -- educational activity identified with a subject or specified focus for learning, used synonymously with activities, class, sessions, offerings.

Class setting -- the place where the educational activity occurs, used synonymously with facility, learning environment, meeting place.

Staff Development -- training faculty in relation to the particular needs of the community-junior college, especially in the arena of

effective teaching for a diverse clinetele.

Instructor -- one who initiates and facilitates the educational activity, used synonymously with teacher, trainer, practitioner, and patient educator.

Practitioner -- one who practices a profession.

Principles -- accepted or professed rules of action or conduct.

Student -- the recipient of educational activity, used synonymously with participant, trainee, patient, clientel, target audience.

Organization of the Study

Chapter I introduces the study, presenting the problem, purpose, limitations, and definition of terms. Chapter II includes a review of related literature focusing on the areas of (1) the community-junior college and the adult learner and (2) the principles of adult education and learning. Chapter III reports the procedures utilized in the study, including population and sample, instrumentation, the jury of experts, procedures, and the data analysis. The interpretation of data and the findings of the study are presented in Chapter IV. Chapter V includes a summary of the study, conclusions, and recommendations for further research and practice.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

The review of literature presented in this study focused on research studies in two major categories: (1) the adult learner and the junior college in terms of enrollment trends, faculty training and staff development, and (2) the principles of adult education and learning. In the second category, studies were viewed which focused on the philosophical, cognitive, psychological, social/life cycle, physiological, environmental, and technological aspects of adult learning.

Community-Junior Colleges and the Adult Learner

The rapid growth of adult education in this country is a phenomena of great interest with many implications for the education community. "Among the most remarkable developments in the whole realm of schooling in our American society since the beginning of the century has been the spread of adult education" (Koos, 1970, p. 385). As early as the 1920's through the 1960's, the number of people participating in adult education throughout the public education system increased about five-fold while the population in the United States had yet to double (Oakes, 1976). Recent national surveys indicate that there are between 17 million and 32 million adult learners in the United States pursuing some form of organized instruction which may be credit or noncredit offered

by industry and community agencies as well as by colleges and universities (Cross, 1980).

This rapid spread to a variety of agencies is especially reflected in the public units which include community and junior colleges. In the brief period between 1936-37 and 1942-43, the proportion of adults in the total junior college student body increased from less than 21,000 to more than 193,000 (Koos, 1970, p. 425). In 1968-69, community college adult education enrollment was conservatively estimated as 1,276,000 or 15.3% of the total adult education in the public sector (Oakes, 1976).

More recently, the Bureau of the Census reported a dramatic shift. "College attendance among persons 35 years old and over increased dramatically from 1973 to 1975 as there was a 59% rise in two years" (Bureau of the Census, 1977, p. 3). The National Center for Education Statistics reported that between October, 1972, and October, 1976, enrollment under 25 decreased from 72.0% to 65.0% of the total population contrasted to an increase by the older age group ". . . evident in the enrollment figures for the 25 and up group, which show an increase of 44.6%" (Grant, 1978, p. 91). Between 1974 and 1976, enrollment of students 35 and over at two year colleges jumped 30% (Aronson, 1980).

In 1974, it was projected that the adult population would increase by 75% by the year 2000, and educational emphasis on adults would increase to the point that more focus would be placed on the eduation of adults than that of children (Davis, 1974). It was also projected that the influx of the adult learner in higher education would especially increase during the 1980's (Johnstone and Rivera, 1965; Cross, 1980). This implies that adult education in community and junior colleges will grow as the population shifts and better educated adults seek

more education (Oakes, 1976; Cross, 1980). It has been predicted that community colleges will play new and important roles in adult education (Miller, 1970).

The percentage of adults enrolling in community and junior colleges has caused the median age to rise. Medsker (1960, p. 43) reported 53% of the regular daytime students were twenty-two years of age or younger, while Koos (1970, p. 7) determined that 86% of the regular day time enrollment fell into that category. However, both Medsker and Koos agreed that the majority of all community-junior college students, including part-time and night students, were twenty-one years of age or older. Thornton (1972, p. 149) concurred that the part-time students, who often outnumber the full-time students in community colleges, have a higher average age since most of them are full-time workers, housewives, or retired persons. At the early part of the 1970's it was stated,

> Since most of the research that has been done on community-junior college students has focused on the young adult between 18 and 22 years of age, a significant segment of the community-junior college student population has been largely overlooked (O'Banion, 1973, p. 38).

In 1977, the Bureau of Census reported that between 1973-1975 the statistical data revealed that older students were more likely than younger students to attend two-year colleges. "About half of the undergraduates 25 to 34 years old were enrolled in two-year colleges compared with one-fourth of the students under 25 years old" (p. 3). In the period between 1970-1978,

> . . . choosing to enroll in a 2-year college was much more common among freshmen and sophomores who were over 19 years old than among younger students. In fact, the proportion of all students 20 to 34 years old who were enrolled in the entry years of college who attend a two year college had increased over the period. Thus, in 1978, there were nearly as many men 25 to 34 years old enrolled as freshmen or mores in two year colleges as there were men 18 and 19 years

> old in the same schools at that grade level (Bureau of the Census, 1979, p. 5).

Increases for women also occurred in overall enrollment rates and were especially great among persons above the traditional college age.

> Women over 25 years old and over in 1978 nad higher enrollment over that period than women of other ages or men. A large amount of this increase occurred among women beginning college at the freshman or sophomore level, any of whom attended two-year colleges. Enrollment in two-year colleges made up about 67% of the total increases of enrollment of women as first and second year students (Bureau of the Census, 1979, p. 8).

The fact is that in the two-year colleges women, minorities, and persons over 24 have now become the "traditional" rather than the "nontraditional" student (Gilbert, 1979).

As a specific example of age increase, in 1978, a large urban community college in the Midwest reported its median age of all students enrolled in credit programs to be 27.1 years (Tulsa Junior College, 1978, p. 4). At present, the median age average of community-junior college enrollment in the United States is over 29 (Aronson, 1980).

This median age increase is due, in part, to the active seeking of the community-junior college of adult clientele. The community college has programs designed for fully-employed adults, the retired adults, women entering college course work, and mothers of school-age children. Some of the courses are offered for credit and some for non credit. The courses may be specially tailored for this clientele or may parallel daytime courses (Thornton, 1972). The Aging Americans Act of 1965 has provided funds for the operation of educational programs for senior adult retired persons in community colleges (Cooper, 1975; Kauffman, 1969). A study by Cooper (1975) of a specific community college program for retired adults concluded that participants, teachers, and school

administrators found it most beneficial. The number of older persons enrolling in educational institutions is increasing. It is now socially and economically expedient to encourage more older adults to enroll (Webber, 1978; Gleazar, 1980). Estimated increases in age categories show the 65 to 74 age group increasing 39 percent between 1975 and 2010 (Gilbert, 1979).

Older adults participating in community college programs to a considerable degree have been described as coming more from homes of higher social status, higher socioeconomic backgrounds, and occupational classifications with somewhat higher incomes (Koos, 1970, p. 426). Also, as a whole, today's adult learners consist largely of those who have been successful in school in the past. They tend to be achievement oriented and to represent the advantaged classes of society.

> They are disproportionately young, white, well-educated, and high salaried. Adult education is moving toward elitism, with the following populations significantly underrepresented: blacks, people with less than a high school education, and those with annual family income under $8,000, people 45 and older and those in the central city or on the farm (Cross, 1980, p. 628).

In relation to these recent trends, the literature describes the majority of faculty in community and junior colleges as having had little training or experience in the teaching of adults. In the 1960's, junior college instructors who had previous teaching experience had usually taught in the secondary schools (Hillway, 1958; Kelly and Connolly, 1970; Park, 1971; O'Banion, 1973). A smaller number had come from four-year colleges and universities. However, a trend was detected during the late 1960's toward the hiring of instructors who had a master's degree and a diversity of personal characteristics (Cohen, 1975).

More recent studies indicate that faculty is becoming more diverse

as they are being recruited increasingly from several sources including graduate schools, industry, the professions, and four-year colleges rather than from high schools as they were in the 1960's (Cohen, 1975; Bleyer, 1979). Vogler's (1980) study indicated 75% of the faculty possessed Master's degrees. Contrary to earlier opinion, a study by Cohen revealed that 40% of the faculty in community colleges had neither been instructors or administrators in secondary schools, while 37% had been involved in four-year colleges or universities beyond the level of teaching assistant. His conclusion was that instructors seem to have broken with the secondary school experience--a large number identifying with the university and viewing high school teachers as a poor source of advice on teaching (Cohen, 1977). Leighton (1976) found that teachers tended to adopt the teaching style or techniques expected of them on their first job and to carry these over into subsequent jobs regardless of differences in clientele. In 1963, Johnson (1969) found that innovations in junior college teaching were not very widespread. However, a later study indicated an increase in the use of cooperative work study education, programmed instruction, audio-tutorial teaching, TV classes, games and other simulation in teaching. Park (1971) found in his study that many of the junior college teachers had a traditional approach to teaching. They favored textbooks and written material as the most desired instructional media. The lecture method, both formal and informal, was favored by half the faculty. Out of 238 instructors, only 20 preferred to use multi-media (Park, 1971, pp. 26-27). Leighton (1976) found that teachers who had more training in adult education used a wider range of teaching strategies and had more class interaction.

With these facts in mind concerning the background of community

college teachers, Oakes (1976) posed a most important consideration for the community college:

> One of the most important questions to be answered is whether adults should be taught in the same way as children and high school students and college students, or whether they should be taught differently (p. 132).

Several sources in the literature claim that the teaching staff in the 1980's must have a new kind of preparation (Holt, 1979; O'Banion, 1973). "Studies indicate that preparation must be different from what it is today if community-junior college staff attitudes are to come into focus with the purposes and programs of the college" (O'Banion, 1973, p. 63). The role of the instructor needs to be rethought. The community college instructor of tomorrow

> . . . needs to develop a new self-concept and a new system of psychic rewards, gaining satisfaction from releasing rather than controlling people. We need to develop a new set of skills, characterized as helping or facilitating, rather than transmitting. We need to rethink the role of the instructor away from prescriber, transmitter, and evaluator, toward facilitator and resource person for self-directed learning (Holt, 1979, p. 25).

The first characteristic of the 1980 faculty will need to be a humanistic personality--caring for persons before things, a learner who helps others to learn (O'Banion, 1973, p. 64). Of course, the development of humanistic community-junior college teachers will depend on the exposure of these teachers to humanistic models in a humanistic atmosphere (O'Banion, 1973, p. 65). "Good staff development is a humane response to human needs and is an attempt to provide humanistic education for staff" (O'Banion, 1978, p. 26).

A study done by Roper (1976) of 598 teachers of college credit courses to adults in Utah, revealed that the "successful" teachers were more intelligent and abstract thinking, more venturesome and socially

bold, more tender-minded and sensitive, more experimentally-oriented, more emotionally stable, more forthright and unpretentious, more self-sufficient and resourceful, and older and more experienced. He found that

> . . . the more highly successful teachers do possess signficant qualities which are accepted by modern adult education practitioners. Such distinguishing factors as more sensitive, less smug and cynical, more sentimental, natural and spontaneous, doubts on fundamental issues, inquiring, more well informed, more inclined to experiment with life, and more tolerant of change are favorable qualities. Adult education literature is strongly oriented in favor of these qualities as essentials to effective adult teaching (Roper, 1976, p. 27).

O'Banion's (1978) study indicated humanistic education to be particularly evident in educational practices of the community colleges exemplified by fewer rules and regulations, non punitive grading systems, encounter groups and more individualized learning opportunities.

Adult education principles are largely based on the humanistic model of teaching. However, the literature reveals that very few community-junior college faculty training programs include specific sections dealing with adult learning and the principles of adult education. The fact that community college student bodies usually include a large number of adults warrants some consideration of the characteristics and interests of this age-group (Koos, 1970; Vogler, 1980; Kerr, 1980).

The American Council on Education (1972) recommended that institutions of higher education undertake basic studies of the nature and processes of adult education. The training of faculty (staff development) was acclaimed a first rank priority by the American Association of Junior Colleges (1971). The state of Florida allocated special funds for staff development programs in all Florida community-junior colleges (O'Banion, 1973, p. 103). In the last ten years, staff development has

emerged as one of the most important priorities in community colleges (O'Banion, 1978).

On the whole, preservice programs for the preparation of community-junior college staff has been characterized as grossly inadequate (Bleyer, 1979). "Available instructors are either discipline-oriented, narrow, subject-matter specialists or secondary school-oriented " (O'Banion, 1973, p. 84). Kelly and Connolly (1970) reported that community-junior college preservice programs could place less than 150 each year. However, during the 1970's more than 100 graduate-level programs, many consisting of only one course on the community-junior college, have been developed to prepare teachers for community colleges (Bleyer, 1979).

In 1969 and 1970, The American Association of Junior Colleges (1971) found a total of 276 inservice training programs, virtually infinitesimal in comparison with the needs of 130,000 staff members of over 1000 community colleges. Out of 328 courses listed in the American Association of Junior Colleges' Summer, 1971: A Guide to In-Service Courses and Programs for Junior and Community Faculty and Staff, only six were titled as courses that acknowledged the adult learner.

The literature recommends that inservice programs explore non-traditional approaches to learning (O'Banion, 1973; Holt, 1979). These programs should include new developments in curriculum, instructional technology, and teaching-learning styles. Types of inservice programs could include institutes, short term workshops, staff retreats, in-house continuing seminars, encounter groups, conventions and professional meetings, visitation to other schools, packaged programs, apprenticeships, and professional reading.

> The diversity of students in age, ability, socio-economic background, ethnic background, and personality characteristics is greater than in any other institution of higher education. The prospective community-junior college staff member must be keenly aware of this diversity, and he must be able to provide a wide range of learning experience for the students. Above all, he must believe that these students can learn (O'Banion, 1973, p. 87).

> Present approaches, professor modeling and methodology course, are primitive and weak. It is hoped that advances in microteaching, systems learning, encounter groups, and other learning technologies will provide improved basis for teacher education programs.

> In addition to learning about the process of learning, instructors must be aware of new approaches and innovations in education. Behavioral objectives, multimedia system, audio-tutorial systems, computer-assisted learning, microgroups, and many other approaches need to be studied so that instructors can adapt these to their own styles (O'Banion, 1973, p. 117).

Romine's study (1973) had significant findings concerning the adult learner for staff development content. He discovered that the older students, particularly those over 27 years of age, placed a much greater significance on the following:

> . . . regular feedback from instructors, learning something important, frequent summarization by instructors, counseling, well-prepared instructors, well organized course using well-written materials and greater instructional structures in general (p.37).

Holmes' (1980) study showed that the Andragogical Adult Educator scored highest on the FIRO-B in the area of "expressed affection". For the andragogical orientation, "expressed affection" is the most important interpersonal behavior. "Praising" or "approving" would be other terms used to describe expressed affection in terms of group interaction. "The adult educator who tends to feel comfortable in initiating close relationships should tend to place faith in the responsiblity of students to guide their own learning" (p. 27).

Case (1976) reported his study of an induction program for faculty

at Los Medanos College that provides a model of inservice training for new faculty members. It is full-scaled, campus based, and lasts over an academic year in length. The model is based on an original model by Collins (1972) and funded by the W. K. Kellogg Foundation. One rationale given for this training program was that the changing student clienteles are bringing new needs to the classroom.

> But to teach effectively in today's community college requires a wide repertoire of instructional skills, abiding sensitivities, familiarization with various curricula designs, knowledge of the student, an awareness of the realities of the institution and a commitment to its goals and commitments. These are not the kinds of things that a person usually picks up along the way to becoming a community college instructor. They are not a part of the undergraduate or graduate major, nor of the occupational training and experiences that presently 'credential' and 'certify' persons as qualified community college instructors (Case, 1976, pp. 13-14).

The basic goal of the program was to develop professional staff members effective in their instruction; knowledgeable of the college structure, philosophy, and goals; and knowledgeable of the community college concept. The new staff within the program was to develop a teaching style congruent with the college's commitment to certain instructional modes such as individualized, self-paced teaching/learning to encourage mastery of learning.

The Community College of Vermont has developed an extensive program of staff development. The college serves a majority of adult students. The Staff Manual (1978) defines the college's learning philosophy as follows:

> Self-reliant learners are seen as people who can assess where they are, where they have been, and where they need to go. They can plan how to reach this goal, implement the plan, and reflect on and evaluate their new learning. The self-reliant learner can use the new learning in other cycles of Assessment, Planning, Implementation, and Evaluation (p. 1).

The plan provides training of instructors in adult learning. The goal

of this staff development is to enable the faculty to have an understanding of adult learner attributes, adult development theory, and the teaching/learning process. Criteria for the selection of instructors includes as follows:

--enthusiasm about learner-centered system and appreciation of the special needs of adults who have job and family responsibilities in addition to student obligation

--a willingness to actively involve students in the negotiation of specific course objectives, methods, content, and completion requirements

--an understanding of the joint obligation of teachers and students to evaluate learning in a competence-based narrative format.

William Rainey Harper College, Palatine, Illinois, has implemented a faculty development program that has as its major objective the investigation of "New Learner: New Clientele." The faculty handbook includes overview and background material on the new learner. This material includes methods of instruction, the implications of stages of adult development for higher education, the needs of adults, instructional strategies, and problems in implementing open learning programs (William Rainey Harper College, 1976).

Intentional staff development that enables faculty to serve the changing societal and institutional needs, developing technologies, new student constituent demands, and the knowledge explosion is needed (Weinrich, 1978; Kerr, 1980).

> Evolutions of community colleges during the past 15 years have set the stage for a massive inservice effort. The rapid start-up with concomitant increases in faculty positions insured that new technology and creative alternative instructional strategies were infused into the institution. This growth has ended and a static state is predicted for at least a decade.

> As a consequence, institutional renewal cannot be accomplished as it was in the past through enrollment based on incremental faculty position increases. Further, most community colleges cannot capture renewal positions by virtue of retirements or turnover. The typical work-life age of faculty members and the supply/demand situation of instructors mitigate against positions becoming open (Vogler, 1980, p. 35).

Principles of Adult Learning

In order to design staff development programs that include sound principles of adult learning, these principles must be identified. The following review of literature focuses on the principles of adult education and learning in several categories: philosophical, cognitive, psychological, social/life cycle, physiological, environmental, and technological aspects of adult learning.

Philosophical Background of Adult Education

Adult education practices have been influenced by five general education philosophies: (1) Essentialism, (2) Perennialism, (3) Progressivism, (4) Reconstructionism, and (5) Existentialism (Apps, 1973). The two that have been most influential are Progressivism and Existentialism. Progressivism (Pierce, James, and Dewey) favors experience as the basis for knowledge. Learning how to think, rather than content, is the focus here. Existentialism (Maslow, Rogers, May, Fromm, Buber) proposes that the purpose of education is to encourage individual self-fulfillment and freedom.

The contemporary field of adult education in the United States traces its roots to the Progressivist philosophy of education formulated by Dewey in the early 1900's (Houle, 1972, p. 10). Dewey, a Pragmatist, attacked traditionalism and affirmed that education be related to all

experience. Dewey had asserted that the specific goals of learning are constantly changing and evolving. He affirmed experience as the basis for knowledge.

> Education must be reconceived, not as merely a preparation for maturity (whence our absurd idea that it should stop after adolescence) but as a contiuous growth of the mind and a continuous illumination of life. In a sense the school can give us only the instrumentalism of mental growth, the rest depends upon an absorption of experience. Real education comes after we leave school and there is no reason why it should stop before death (Dewey, 1916, p. 65).

Six assertions of Progressivism set the stage for the modern practice of adult education (Kneller, 1944):

1. Education should be life itself, not a preparation for living.
2. Learning should be directly related to the interests of the learner.
3. Learning through problem solving should take precedence over inculcating of subject matter.
4. The teacher's role is to advise and not to direct.
5. The school should encourage cooperation and not competition.
6. Democracy permits and encourages free interplay of ideas and personalities.

It was Lindeman (1926) who began to apply and articulate Dewey's thoughts for adult education. Lindeman pointed out that <u>situations</u>, not content, would be the approach of adult education, with the learner becoming the focus rather than teachers and texts. He saw the purpose of adult education to be putting meaning into the whole of life.

> The whole of life is learning, therefore, education can have no endings. This new venture is called <u>adult education</u>--not because it is confined to adults but because adulthood, maturity, defines its limits (Lindeman, 1926, p. 6).

Lindeman identified several key assumptions about adult learners that

research later supported.

1. Adults are motivated to learn as they experience needs and interests that learning will satisfy; therefore, these are the appropriate starting points for organizing adult learning activities.

2. Adult's orientation to learning is life-centered; therefore, the appropriate units for organizing adult learning are life situations, not subjects.

3. Experience is the richest resource for adults' learning; therefore, the core methodology of adult education is the analysis of experience.

4. Adults have a deep need to be self-directing; therefore, the role of the teacher is to engage in a process of mutual inquiry with them rather than to transmit his or her knowledge to them and then evaluate their conformity to it.

5. Individual differences among people increase with age; therefore, adult education must make optimal provision for differences in style, time, place, and pace of learning (Knowles, 1978, p. 31).

These became the basis for the lifelong learning theory that is prevalent today in the field of adult education. This theory has been given the name of "Andragogy," a term coined in the United States by Knowles (1970, p. 308). Some adult educators fear that the proponents of andragogy see it as a separate science. They are quick to assert that education is a single fundamental human process (Houle, 1972; Parsons, 1978). Knowles' philosophy of adult education does not establish two cleavages for education but proposes a continuum--pedagogy (the art and science of teaching children) on the one end and adragogy (the art and science of teaching adults) on the other. It is pedagogy that is most concerned with the transmission of knowledge while andragogy is concerned with the process of self-directed inquiry. Andragogy means more than just helping <u>adults</u> learn.

> . . . it means helping human beings learn and therefore has implications for the education of children and youth.

> For I believe the process of maturing toward adulthood begins early in a child's life and that as he matures he later takes on more and more of the characteristics of the adult in which andragogy is based (Knowles, 1970, pp. 38-39).

The major difference between adults and younger students is the variance in age, experience, and motivation. This calls for a different approach in utilizing teaching-methodologies but does not call for completely different methodologies (Allen, 1979).

Andragogical theory is based on at least four main principles that are different from pedagogy. These principles can be classified into the following four categories:

1. change in self-concept
2. the role of experience
3. readiness to learn
4. orientation to learning (Knowles, 1978, p. 55).

Andragogy assumes that as a person grows and matures, his self-concept moves from one of total dependency to one of increasing self-directedness. Pedagogy assumes dependency and is comfortable in maintaining that dependency. Andragogy feels an obligation to help a person move toward increasing self-directedness.

The second principle views the learner's accumulated experience as a rich resource for learning that provides a broadening base to which new learnings may be related. Because of this concept, there is a decreasing emphasis on transmittal techniques and more emphasis on experiential techniques that tap and analyze experience.

The third principle is that the adult's orientation to learning is problem-centered rather than subject centered. This concept is closely related to the fourth concept. Andragogy affirms that adults are ready

to learn what they need in relation to their developmental tasks and evolving social roles.

Research directed toward adult learning has established basic concepts of adult education in several major areas: cognitive, psychological, social/lifecycle, physical, teaching methods, and environmental factors. Literature in each of these areas will be viewed and described in the remainder of this chapter.

Cognitive

Adult education is based on a central concept: adults can learn. For years there was a prevailing notion that "you can't teach an old dog new tricks." The work of Thorndike brought the support of scientific research to the concept that adults are capable of learning. Thorndike first reported his empirical findings in 1927 at the Annual Meeting of The American Association for Adult Education. His classic study, sometimes referred to as the foundation stone for adult education, revealed that learning ability declined only very slowly and very slightly after age twenty (Thorndike, 1928). This study was supported by other studies conducted by Jones and Conrad (1933) and Wechsler (1958) showing a peak at 22 followed by a gradual decline. All of these studies were of a cross sectional design or at one point in time.

However, longitudinal studies which followed made significantly different discoveries. Terman and Oden (1959), Oden and Bayley (1955), and Owens (1963) reported gains by adults on tests constituting measures of conceptual thinking.

The question of the discrepancy between the cross sectional and the longitudinal types of studies was pursued by Lorge (1955), a student of

Thorndike. He conducted investigations using timed and untimed tests. The data revealed that on tests conducted with a time limit there was steady decline with age. But on tests where time was not a factor, there was no significant decline associated with age. His experiment revealed that speed of learning declined, not intellectual power, and that even this decline could be minimized by the continued use of the intellect.

Welford (1951) found that older adults' performance was slower and more deliberate than young adults' but more accurate. He found speed to decrease but to be offset by gains of quality and accuracy.

More detailed and refined research on adult intelligence was conducted by Cattell. Out of this work, Cattell developed a theory of fluid and crystallized intelligence with the basic premise being that intelligence is produced by the interacting influence of neurophysiology and acculturation. Cattell (1963) and Horn (Horn and Cattell, 1966, 1967) proposed that primary mental abilities fall into two main dimensions. They believed that both of these dimensions should be called "intelligence." In order to distinguish between these two types of intelligence, the names "fluid" and "crystallized" were used.

Fluid intelligence is

> . . . the major measurable outcome of the influence of biological factors on intellectual development--that is, heredity, injury to the central nervous system (CNS) or to basic sensory structures, etc. (Horn and Cattell, 1966, p. 254).

Fluid intelligence includes the ability to form concepts, perceive complex relationships, engage in short-term memory and abstract reasoning. It depends on heredity and accumulation of injury to neural structures. It is relatively independent of experience and education.

Crystallized intelligence is the learned ability to make judgments, find relationships, and use strategies to achieve solutions to problems. This dimension is formed through the acquisition of information and skill and through the education and prior experience in the "collective intelligence of a culture" (Horn and Cattell, 1966, p. 255). It is based on acculturation and active information seeking.

Studies show that fluid intelligence along with crystallized intelligence, increases during childhood and into adolescence. Fluid intelligence tends to peak during adolescence and gradually decline during adulthood (Tuddenham, Blumemkrantz, and Wilken, 1968; Fozard and Nuttal, 1971). Fluid intelligence should remain at a constant level but is offset by injuries and insults to the central nervous system (Whitburne, 1979, p.69).

Crystallized intelligence continues to increase throughout adulthood. In longitudinal untimed tests, scores were the same or higher in the 50's as in the 20's (Owens, 1953; Doppelt and Wallace, 1955; Schaie and Strother, 1968; Blum, Jarvik, and Clark, 1970; Cunningham, Clayton, and Overton, 1975). The National Assessment of Educational Progress achievement test showed higher scores for adults than for 17 year olds (U. S. DHEW, 1976). Continued growth of crystallized intelligence beyond age 60 depends on continuing acculturation through educative activity and information seeking (Sward, 1945; Bayley and Oden, 1955; Campbell, 1965). Crystallized intelligence will decline only when the rate of environmental impact falls below that of the neurological loss responsible for the decrease in fluid intelligence, which rarely occurs (Whitbourne, 1979, p. 69).

Fast paced, unusual, and complex tasks are characteristic of

learning tasks associated with a decline in learning ability and age.

> During adulthood, as fluid intelligence decreases and as crystallized intelligence increases, general learning ability remains relatively stable, but the older person tends to increasingly compensate for the loss of fluid intelligence by greater reliance on crystallized intelligence, to substitute wisdom for brilliance (Knox, 1977, p. 421).

Judgment and reasoning ability seem to be abilities that reach a peak latest in life (Kidd, 1973, p. 91). Substantial evidence points out that the greater an individual's intellectual abilities, the less decline resulting from age. Usually when deficits appear, it is due to disuse as exercise of the mind appears to retard deterioration.

Factors associated with learning ability and age are physical conditions and social class level. There is positive association between educational level and intellectual functioning (Blum and Jarvik, 1974). Deterioration in learning ability can result from mental and physical inactivity (Jarvik, 1975).

Recall and retention is affected as age increases but not necessarily due to decline in mental ability. Studies have shown that if information is meaningful, the ability to retain and recall it is stable (Moenster, 1972; Clark and Knowles, 1973; Schonfield, 1969). There is marked decline in retention with age when material was not meaningful (Wimer and Wigdon, 1958; Wimer, 1960; Huleka and Rust, 1964; Hulda, 1965; Laurence, 1967; A. Smith, 1975). Recall is also greater when the conditions for retrieval are similar to those under which the original registration occurred. Older adults especially experience a memory deficit when they are trying to store new information at the same time they are trying to recall stored material.

> Over the years, as adults acquire more information related to topic, they can make more cross references and potential connections between new and stored information. As a result,

> older adults tend to expand the scope of search when trying to recall information, which takes more time and may result in greater interference with the new material to be learned (Knox, 1977, p. 436).

Measurement of adult intelligence through the use of intelligence tests presents great difficulty (Birren, 1964). Many factors negate their viability such as the enormous effect that speed has on adult performance scores. Skawran (1965) found that intelligence as it is applied to adults requires adaptive behavior to situations in everyday living rather than on paper and pencil tests (Bischoff, 1969, p. 215). It is evident that in contrived laboratory situations old adults are not as efficient as young adults. But the evidence seems to indicate, though not conclusively, that young adults do not appear to solve problems of every day living any more efficiently than do much older adults (Bischoff, 1969).

Based on sophisticated studies of sequential design, done by Schaie (1958), Schaie and Strother (1968), Schaie, Labouvie and Buech (1973), Schaie and Labouvie-Vief (1874), Achaie and Parham (1977), research shows that patterns of intellectual change in adults are not fixed. Baltes and Schaie (1976) support the concept of <u>plasticity</u> of intelligence. They believe that the pattern varies from person to person, that it is affected by the environment as much as maturation (also supported by Knowles, 1970) and that decline is not irreversible.

Piaget (1972) confirmed the effect of other factors on the cognitive process.

> First we must agree that at no level, at no stage, even in the adult, can we find a behavior or a state which is purely cognitive without affect nor a purely affective state without a cognitive element involved. There is no such thing as a purely cognitive state. For example, take the most refined form of thought, a mathematician who demonstrates some new theorem. As much as such behavior is intellectual from one aspect, it is

> necessarily affective from another. If the mathematician spends his time with it, it is because it interests him, he gets pleasure out of it, he feels enthusiasm for it, even passion, and this is affective (p. 168).

According to the structural developmentalist theory of cognition in which Piaget pioneered, the adult differs from the child by having the possibility of using all three levels of cognitive thought: (1) pre-operational, (2) concrete operations, and (3) formal operations. Children are limited to one or two levels. Adults choose to use their unique level of formal operations only when abstract thinking is required. "All three levels of thought are potentially available to adults and can be called upon as necessary" (Whitbourne, 1979, p. 51).

Piagetian research on adults has included a hypothesis termed "regression" which postulates that adults lose mental abilities in the order opposite to their order of gain during childhood. This hypothesis was challenged and found to have little basis of support (Papalia and Del Vento Bielby, 1974; Rubin, 1976; Tesch, Whitbourne and Nehrke, 1978).

> It seems to be less important to determine whether middle-aged and older adults 'measure up' to younger adults and children than to find out what influences adults to utilize sensori-motor, concrete, or formal reasoning abilities on a given task. If adults have at their disposal all three, then it should be possible to vary the mode of reasoning an adult will use by structuring the task in various ways. Adults would then be expected to employ the method or methods most appropriate to that task (Whitbourne, 1979, p. 54).

Arlin (1975) has suggested that a fifth stage of cognitive development exists beyond the stage of formal operations. This stage, termed problem-solving, has as its basic characteristic discovering questions to ask rather than answering the given question. This includes creative thinking and the growth of new ideas involved in discovering problems to tackle.

Riegel (1976) sees a dialectical process in the structure of adult cognition. This process contains a contradiction of thoughts and actions which sets up a disequilibrium or imbalance within the person. Riegel does not see the equilibrium achieved at the stage of formal operations to be a stable one maintained throughout adulthood. Continual change is a possibility.

Cognitive changes in adults are influenced by important life experiences such as marriage, occupational activities, raising a family. The subjective nature of these experiences varies greatly resulting in considerable differences in cognitive change among adults.

The present body of literature on adult intelligence is controversial. Major conclusions that can be reached by all these studies are as follows:

1. Intellectual abilities are not necessarily lost after early adulthood--some may improve, some may remain stable, and others may diminish.
2. For most persons the declines that occur in mental ability are not evident until the 40's or 50's.
3. Age patterns in intellectual ability may vary among and within individuals (Whitbourne, 1979, p. 81).

Psychological

The fact that adults can learn leads to two questions: What motivates adult learning? What is the process of adult learning?

Maslow (1943) proposed that persons were motivated out of five basic human needs. He defined a five level model of human needs. As the need of each level was met, the next level was focused on. The needs were ranked as follows: (1) psychological needs, (2) safety and security, (3) belonging and social activities, (4) esteem and status,

and (5) self-realization and fulfillment. Determining one's position on the needs level indicated possible motivation to learn related matter.

Kidd (1973) notes that there are two main views of human motivation: need reduction and positive striving. The need reduction view places emphasis on the need to satisfy bodily hunger, thirst, sleep and sexual appetites. This view of human motivation asserts that an organism's motivation to perform a variety of activities arises from the necessity of fulfilling these basic needs. This view is sometimes expanded to include the need to avoid pain and discomfort or to minimize anxiety. The positive striving view identifies the two primary motivating forces as self-fulfillment and the need for a human being to enhance his relationship within society.

Ingalls (1972) reinforces this concept in his Trainer's Guide to Andragogy. He states that the level of need-satisfaction plays an important role in determining what learners will be motivated to learn. A person who is experiencing a high level of psychological anxiety is likely to be motivated to want to learn anything that will help him resolve his problems "as he perceives them," but he will not be motivated toward developing his higher potenialities until he first finds a "safe" environment.

Houle's (1961) research enabled an understanding of the processes of adult learning. His studies concluded that the purposes of learning by the adult could be grouped into three categories. "These are not pure types; the best way to represent them pictorially would be by three circles which overlap at their edges" (p. 16). Houle's study was designed to discover why the adults engage in continuing education. It also suggested how adults learn. Houle found the following types of

adult learners:

1. goal-oriented--uses education for accomplishing fairly clear-cut objectives. These persons have realized a need or identified an interest. Learning takes place in episodes rather than a continuous flow, is ever-recurring, and is not restricted to one institution or method.
2. activity-oriented--uses courses for the social contact and the kind of human relationships they yield.
3. learning-oriented--seeks knowledge for its own sake. Learning has a continuity and a flow and is associated with all their activities such as organization, trips, jobs, etc.

Tough (1971) extended Houle's work focusing even more on how adults learn and the processes of adult learning. His research revealed that almost all adults engage in one or two learning projects that are self-initiated and planned each year. These learning projects are composed of a series of related episodes in which more than half of the person's total motivation is to gain and retain knowledge and skill. The research revealed that it is common for a person to spend 700 hours a year at learning projects. Persons are motivated to engage in these projects because of desired outcomes and benefits that would result in pleasure and self esteem. Adults learn in order to perform more successfully. This highly deliberate learning is a pervasive phenomena in human life. The adult learner ". . . resembles an organization that maintains and increases its effectiveness by devoting 10% of its resources to research and development" (p. 4).

Havinghurst (1961) developed the concept of "teachable moments." He found that developmental tasks of adulthood influence the

readiness to learn in adults and that new situations and social roles create an urgent need to gain certain knowledge or skill. A "teachable moment" is a point at which there is great urgency to learn in a very short time because of competence required by a new situation or new role. A "teachable moment" is a point at which education possibility is very high. The requirements for performing social roles change as the adult moves through the phases of early adulthood, middle age, and later maturity. Developmental tasks change as well as the readiness to learn certain things. "Adulthood has its transition points and its crises. It is a developmental period in almost as complete a sense as childhood and adolescence are developmental periods" (Havinghurst and Orr, 1956, p. 1).

Jensen (1964) states that adults are especially concerned with maintaining and enhancing their social worth and success. For many years of adult life, this seems to be the primary source of motivation for learning. Jensen goes on to say that in American society social worth and success are largely dependent upon continued increase in competence. Adults, therefore, have a strong need for acquiring new knowledge and skills in an instructional situation which reduces to a minimum the danger of losing "hard-won" prestige.

Another important psychological aspect of adults which is dealt with in the literature is the theory of self-concept. McClusky (1970) provides one view of the implications self-expectation being that the learning role is not a major element in life, and, therefore, both society and adults view themselves as non-learners. McClusky believes that this failure to internalize the learner role as a central feature of the self is a substantial restraint on the adult's realization of

potential learning. If and when an adult thinks that studying, learning, and intellectual adventure are as much a part of life as his occupation and obligation to his family, s/he will be much more likely to achieve a higher level of intellectual performance.

Ingalls (1972) provides a good discussion of the changing self-concept that occurs as an individual matures. He states that the self-concept of dependency to one of autonomy indicates that a person has achieved psychological maturity or adulthood. Because of this, adults tend to resent being put into situations that violate their self-concept of maturity, such as being treated with a lack of respect, being talked down to, being judged, and otherwise treated like children.

McClusky (1964) suggests that one of the most fruitful and pervasive concepts that may be employed to interpret the adult condition is that of differentation. As a person moves through the adult years, there is a diversification of abilities, skills, attitudes, interests as well as other factors. This concept has two important implications for adult education. First in dealing wih adults, it means simply that one is working with highly differentiated persons, and secondly, in attempting to anticipate the motivations, interests, skills, and abilities of adults, programming should be largely a "tailor-made" affair. The example McClusky gives is that one should not expect to discover many elements of general interest for large groups over a fairly extensive period of time, but should be prepared to organize learning experiences around smaller groups of persons whose interest in learning, except for social purposes, is highly specific.

Kidd (1973) observes that many studies and observations have reported that older people are rigid and inflexible. Kidd goes on to

state that views about politics, religion, morality, and duty may be held fixedly and are not subject to question or a review without displays of emotion. He goes on to say that anyone planning a program or curriculum involving older people must give this factor careful consideration. McClusky (1964) used the term "set" to denote this characteristic that is especially relevant for the understanding of the psychology of adult behavior. The set of the learner must be known and respected and there must be adequate provisions for readying the learner for the learning situation, and ample opportunity for use of intervals in disengaging a learner from preceding tasks in preparation for later ones.

Social/Life Cycle

Frenkel-Brunswik (1936) conducted one of the first studies on life phases. However, Erikson's theory of the eight stages of ego development (1963) has provided the basis for current research on adult development. Three of these stages (intimacy vs. isolation, generativity vs. stagnation, and ego integrity vs. despair) were identified as developmental stages for the adult. Neugarten (1968) conducted research on the characteristics of middle age and discovered five unique characteristics of this phase of life. Further research building on the idea of life crises and life stages had been done by Gould (1972) who supported Erikson by postulating that persons enter either-or identity situations at different stages of their lives. Levinson et al. (1974) studied men and their development coining the term BOOM (Becoming One's Own Man). Valiant (1972) and Lowenthal (1975) conducted additional research studies that tend to agree that adult development implies a

growth schedule common for all individuals. The findings suggest

> . . . tentativeness and vigor in early adulthood, greater assumption of adult roles and responsibility in the early portion of middle adulthood, followed by a questioning of commitments and reintegration in the latter portion of middle adulthood (Whitbourne, 1979, p. 124).

Sheehy (1976) popularized the complex findings of these researchers by providing a lay version of predictable crises in adult life. The theory of life cycle changes in adults proposes that adult development consists of the same stages, encountered at about the same age, and resolved in a manner similiar to that of all other adults.

Another school of thought regarding adult development is referred to as the "differentiation" model. It views adult development as an integrated, dynamic, and continuous process in which categorical changes according to age cannot be predicted. The concept is based on the premise that ". . . adult experiences are too varied and multifacited to be classified into age-defined discrete categories" (Whitbourne, 1979, vi Preface). Major life events that characterize each phase confront all adults, but the way the events affect and are affected by identity make each adult's life different. Expectations can be as important as an adult's actual experience.

This model is based on the work of Werner and Erikson. It was Werner who postulated that ". . . differentiation and integration underlie developmental changes over the life span of every individual" (Whitbourne, 1979, p. 7). Differentiation is the process of refinement while integration is the process of synthesis. In Erikson's theory, it is pointed out that individuals must confront certain critical issues as major life events are faced. Personal identity must always be defined and redefined by the individual. Differentiation is responsible for

change in identity while integration provides overall consistency. Identity differentiation is stimulated when there is a perceived discrepancy between one's experiences and one's identity. "The process of identity change is a cyclical one. Adults interpret experiences on the basis of what they already believe about themselves, and change this belief when their experiences contradict the belief" (Whitbourne, 1979, pp. 9-10). Deductive differentiation occurs when one's identity forms the basis for the interpretation of an experience. Inductive differentiation occurs when experiences effect change in identity. There is a similarity in this model with Piaget's concepts of assimilation and accommodation in relation to the states of equilibrium and disequilibrium.

Considering both schools of thought on the social aspects of adult development, it seems reasonable to reach a basic conclusion even in the midst of the differences stated: adulthood is to be understood not as a time of stability but as a time involving continuous potential for change.

Physical

Adult learning and its processes are directly affected by the developmental trends in physical condition and health during adulthood. Visual impairment, hearing loss, and decline in reaction time are the more common physical conditions that provide implications for adult learning. These are general trends in biological aging, but may not affect all adults. "Biological aging refers to the accumulated changes in people that lead to functional impairment and death" (Knox, 1977, p. 24). Since the body contains cells and capacity that are not essential

for normal operations the influence of biological aging on performance is reduced (Timiras, 1972).

False stereotypes about older adults are to be minimized by making distinctions between general trends in biological aging that affect everyone and specific forms of ill health that affect only some people (Knowles, 1970; Newgarten, 1968; Bischoff, 1969).

Visual acuity is at its best somewhere between the middle teens and early twenties (Bischoff, 1969; Knox, 1977). As the eye and nervous system age, the visual information received is reduced. Neugarten (1968) pointed out that few visual changes are noticed until around age 40. As the ever-yellowing lens increase, some colors are filtered out. Adults with visual impairment can compensate through other means such as using larger type, allowing a longer time for exposure, combining audio and visual forms for receiving information, simplifying sequences of information, and allowing more time for adaption between lightened and darkened surroundings (Knox, 1977, p. 282).

Auditory acuity reaches its maximum peak between the ages of 10 to 14 years (Timeras, 1972). There is a gradual decline until the fifties and then the rate increases more rapidly. Speed of hearing also lessens with age. Women have a greater decline in low frequency discrimination and men have a greater decline in high frequency discrimination (Knox, 1977). Older adults also have more difficulty screening out interfering noises. Hearing loss can be compensated for by providing amplification, recognizing that increased volume will not compensate for neural deafness, and providing clear enunciation and facial lip cues (Knox, 1977, p. 314). Hearing loss can bring great emotional stress.

With increasing age, the reaction time (the interval of time that

elapses between presentation of a stimulus and the response to it) increases. Peak reaction time is about age 20 (Timeras, 1972). Movement time (the time which elapses between the point when a muscle receives a stimulus and its eventual movement) also increases. The slowing of reaction time is greater than movement time (Knox, 1977). Older adults are helped through clear instructions, reinforcement, and the avoidance of situations that entail time pressure.

There is a loss in the power of hemeostatic adjustment as age increases. The body experiences a decline in the ability to adapt and compensate for external temperature changes.

Also, energy level decreases with age affecting the capacity for physical work. Studies indicate that a 70-year-old person's capacity for physical work is one-half of that for a 40-year-old person.

Teaching Methods

Studies searching for the most effective method or technique for helping adults learn has been termed "remarkably ambiguous" (Leahy, 1977) and have generally had results which were termed not statistically significant. No one technique seems to give predictable learning results with all types of students with various types of content.

"Unpopular" teaching has been indicated as one factor for the high dropout rates of some programs (Harris, 1975). Since dropout rates range as high as 84% in some studies (Sainty, 1971), choice of effective and popular teaching styles or techniques become imperative.

It is highly probable that those most likely to drop out are also the most affected by external (environmental) factors such as teaching technique. Boshier (1973) has theorized that dropouts can be predicated

by their reason for enrolling which reflects their level of need according to Maslow's needs hierarchy. Those students enrolling for reasons relating to a deficiency were much more likely to drop out. Students enrolling in adult education for reasons relating to personal growth were likely to be operating at the higher levels of needs such as esteem and self-actualization. Boshier goes further to relate the work of Maslow to that of Rogers in stating that Maslow's "growth motivated person" is what Rogers calls the "full functioning person."

In attempting to formulate a theory by which potential dropouts can be identified, Boshier (1973) uses Rogers' theories of self/other congruence to

> . . . hypothesize that enrolling for 'deficiency' reasons is associated with intra-self incongruence, which in turn leads to self/other incongruence and dissatisfaction with the educational environment. Growth motivation is associated with intra-self, and thus self/other congruence and satisfaction with the educational environment (p. 259).

Maslow's deficiency-motivated person is described as more dependent on and more fearful of the environment and possibly more hostile if the situation threatens to "fail or disappoint." The Growth-motivated persons tend to be more "self-directed" and less dependent on the environment. They would be better in coping with "inconsistency and disorder" in the learning environment (Boshier, 1973).

This dichotomy of learners tends to be carried into research concerning the effectiveness of teaching-learning techniques with various types of learners. Johnstone (1965) reported adults of lower socio-economic status tended to prefer informal learning situations. Older adults were also more likely to prefer home study or private tutor methods than the formal classroom.

Cognitive style mapping is a method of attempting to ascertain a

person's strongest learning skills by analyzing the way s/he encodes, processes, and decodes information. Heun et al. (1975) recommended at least a 70 percent match between a person's learning style and the mode of response demanded by the learning task for efficient learning. "Every teaching method (book, lecture, cassette tape, communication game, etc.) has its own cognitive style" (p. 4). Nunney (1978) states that at least five or six alternative teaching-learning techniques would be needed to match the learning styles of a small group of 30 students.

Sulkin (1972) tried unsuccessfully to match personality characteristics with success with certain teaching techniques. Bertinot (1978) was also unable to match choice of learning format (traditional classroom and a nontraditional format) with cognitive style or personality variables. Cawley and his coworkers (1976), however, did find a slight tendency of analytic-oriented learners to prefer formal learning environment.

While the evidence concerning cognitive style and personality factors as predictors of success with specific teaching-learning situations may be inconclusive, it is overwhelmingly in favor of the use of a variety of techniques and repetitions in order to reach as many of the students as possible.

Teaching Styles. Leighton (1976), working with a group of teachers of language for adults, found that teaching sytle was not correlated with age, sex, or length of teaching experience. Teachers tended to adopt the teaching style or techniques expected of them on their first job and carry these over into subsequent jobs regardless of differences in clientele. Teachers with more training in adult education did tend to use a wider range of teaching strategies and have

more class interaction as measured by the Flanders system.

Knowles (1978, p. 31) has stated that adults ". . . have a deep need to be self-directing". Bergevin (1966) makes an even stronger case for self-directed learning.

> This book rests on one other assumption that all persons participating in adult education need to learn something about their responsibilities as learners. They need to learn how to learn in a cooperative and mutually supporting manner (p. 8).

While the student's ability to be self-directing is tied to his level of need-satisfaction, Heun (1975) recommends a partial mismatch of teaching style and the student's favored learning style if the learning skills are low. This, while giving success in the area of overlap, would begin to build better learning skills in less preferred learning styles. Heun calls this "tactic augmentation."

Physical Characteristics and Teaching Technique. Not only must learning styles be taken into account but the physical aging process itself has implications for the planning of learning strategies. Norris (1977) points out the need for larger print and shorter reading assignments because many adults cannot read as well or as fast as when they were younger. Adults may need stronger light. The students who have some hearing loss benefit from being able to watch the instructor as he speaks. Other factors may be that the adult student may have worked all day and simply be tired by the time he reaches class. The learning activities may need to be planned so they are not prohibitive in terms of energy available. Norris (1977, p. 5) states that ". . . as adults grow older they are less able to hold an attention span over long periods of time".

Botwinick (1973) gives these suggestions for helping adults learn

and remember.

1. Slow down the pacing of events presented in the life or laboratory situation.

2. Help the older subject to organize the material better. For example, performance of both young and old improves with the use of mediational shifts (linking stimuli on the basis of likeness in shape, color, usage).

3. Give strong emotional support. Such support is initially beneficial in old-age performance, although it has only a temporary effect.

4. Employ visual and aural augmentation. The more senses the elderly use, the better they learn and remember.

5. Reduce interference until the initial learning is fairly well mastered. Younger adults can tolerate more interference while learning than can older adults.

6. Make the experiment or task meaningful and relevant to adult life. The more relevant the task, the more easily adults learn and the longer they remember. Memorizing nonsense syllables does indeed seem nonsensical to an older adult.

7. Make the task more practical. A practical answer to the question "What good is it?" appears to motivate better performance at all age levels, but particularly for the older adult (p. 112).

Lecture. The use of lectures in adult education is highly controversial. While highly expedient in the amount of information it is possible to transmit in a short time, the lecture severely limits the participation of learners. Retention from lectures is increased if a film or other media is used with the talk (Brunner, 1959).

The major problems with lecture is the low retention (10 to 20%) and the low student involvement. It appears that students of above average education and intelligence gain most from talks. Because talk has been in a normal form of communication in the lives of most people, it may not create fears and blockage of learning as may occur with the use of techniques unfamiliar to the student (Stephens, 1974, p. 57).

Discussion and Role Playing. The great effectiveness of discussion in changing habits and attitudes has been shown by several studies. Bergevin (1966, p. 51) states that over enthusiasm for the discussion has caused ". . . time to be wasted in talk with little purpose or direction, and no discipline". Brookfield (1978) cautioned adult educators not to be overly enthusiastic about using discussion techniques. There are some adults who are intimidated by attempts to encourage them to contribute and who stay out of adult education because of fears of enforced "participation."

Role playing techniques which allow the learner to assume the role of another person are another form of discussion. The intent is that role playing will promote an understanding of the concerns of other people. In addition, Kidd (1973) has stated that getting the learner actively involved is one of the most important single principles in adult learning.

Rice (1979) surveyed adult students at a college in England about the advice they would give the new teachers of adult classes. Almost one-third of the tips offered by the 41 respondents had to do with the importance of discussion in adult classes. Some students also stated that control was needed of those "class pests" who monopolized discussion. Teacher attitude and an understanding of adult students both ranked second with about 20% of the students responding. Teachers also should have respect for adult students and a sense of humor according to these students. A ". . . friendly informal, easy societal atmosphere, with the tutor of the group" was recommended (p. 21).

The choice of a successful teaching technique depends on the student, the teacher, and the situation. The learning situation should offer adults stimulus within security if students are to make the most

of their adult education endeavors. "Ideally they should have this in their relationship both with the teacher and with their companions" (Stephens, 1974, p. 43).

Environmental Factors in Adult Learning

The common thread running throughout adult education literature is the concept that adults are influenced by the environment in which they attempt to learn. Knowles (1970) states that modern adult education theorist are placing increasing emphasis on the importance of building an educative environment in all institutions and organizations that attempt to help people learn. They believe an adult may possess all of the internal preconditions for learning, but may still fail because of conditions in the immediate learning situation over which they have no control. Adult leaders categorize these factors under various headings but they generally agree that the educative environment (some use the term climate) consists of the physical settings as well as the emotional atmosphere (Verner, 1971).

Of the literature reviewed, Knowles (1970) and Ingalls (1972) presented the strongest arguments regarding environmental factors and adult learning. Ingalls places ". . . setting a climate for learning" as the first step in his seven step continuous development process for adult learners (p. 10). Knowles succinctly describes a supportive learning climate as being ". . . characterized by physical comfort, mutual respect, mutual helpfulness, freedom of expression, and acceptance of differences" (p. 52). The factors of physical comfort have strong implications in adult learning. In most instances the learner has put in a full day of work and may be under time pressures as well as other

home or work pressures. Thus, learning may be decreased for the adult learner who must climb four of five flights of stairs to a poorly lit and overheated classroom, and sit three hours in an uncomfortable chair. Knowles (1970) states that care should be given to assure the physical conditions are comfortable; such as seating, smoking, temperature, ventilation, lighting, and decorations. He also, suggests a seating arrangement conducive to interaction (i.e., no person sitting behind another person).

Knowles (1970) theorizes, the quality and amount of learning is influenced by the quality and amount of interaction between the learner and his environment and

> . . . by the educative potency of the environment. The art of teaching is essentially the management of these two key variables in the learning process--environment and interaction--which together define the substance of the basic unit of learning (p. 51).

Often many adaptions need to be made in the environment for special needs, such as when there is low sound volume, poor acoustics, and much background noise that interfers with hearing impairment. Under such circumstances, a hearing aid may not help, and if the room is to be satisfactory for adults with hearing impairments, sound amplication at the source and improved acoustics can provide the needed compensation. Elevators and ramps are other modifications of the environment that enable adults with phsyical disabilities to minimize the limitations on their activites (Knox, 1977).

Verner (1969), Ingalls (1972), Knox (1977), Knowles (1970), Houle (1961), and others support the tenet that the emotional atmosphere must be open, positive, and supportive of the adult's attempt to learn. In this connection, ". . . the attitude and behaviors of the instructor are

crucial; the adult must be treated as an equal in his/her own right, without any hint of criticism or depreciation of his attempts to learn" (Knowles, 1970, p. 7). This has particular meaning to adult students returning to a classroom for additional learning. The open, supportive classroom is necessary because the adult learner may perceive the school, classroom, and teacher as negative factors (a threat) because of past experiences in similar institutions. If the adult left school because of personal difficulties or explusion, his/her perception of the new situation will not be conducive to gaining new experiences. In a positive classroom climate with the absence of threat where the teacher accepts each student as a person of worth, mutual trust may build.

Knowles (1970), Knox (1971), and Tough (1971) among others, discourage an atmosphere of competition in which adult students are pitted against each other and the teacher sits as expert and judge. They contend this diverts the energies of the students from learning to defensive measures. A high level of emotional stress in the classroom tends to demoralize the adult and interfer with the learning process itself. Evidence of such stress would probably not be found in learning climates characterized by mutual helpfulness. Knowles stressed the importance of building relationships of mutual trust and helpfulness among the students as well as the teacher. This can be done by ". . . encouraging cooperative activities" and refraining from ". . . inducing competitiveness and judgementalness" (Knowles, 1970, p. 52).

Classroom climate is based on nonverbal as well as verbal communication. Mehrabian (1968), a noted psychologist, concludes that 93% of what we learn from the communication process is carried in verbal cues. Other estimates range from 55% upward. Nonverbal behavior by the adult

teacher can encourage or inhibit involvement by the student.

Verduin, Miller, and Greer (1977) suggest that responding to a raised hand or a puzzled look will build climate as does such positive expressions as enthusiasm and liking the students. Important also, is listening to students with patience, and showing expressions that support students, denote enjoyment, or praise. Verduin et al. point out these will aid more in climate building than expressions of aloofness, coldness, low regard, indifference, dissatisfaction, discouragement, dispargement, or punishment.

In summary, one of the most critical factors in adult learning is the climate of the classroom of the general environment in which learning is to take place. Adults who view school as an unpleasant place because of past experiences are especially sensitive to the atmosphere. The effective teacher of adults finds ways of helping students relax and feel a part of the group.

Related Research Design and Instruments

Review of instruments available as described in "Research in Education" (ERIC) and "Test Collection Bulletin" of Educational Testing Service revealed that the intended audience of almost all instruments in education is the student rather than the educator. In the case of a few instruments directed toward the educator, most try to identify a single skill. However, two exceptions were found to be germane to this study.

First and the most relevant, Conti (1979) presented a research paper on an instrument he developed for measuring the degree of instructors' support of the learning principles related to the collaborative teaching-learning mode, the Principles of Adult Learning Scale (PALS).

The collaborative mode was defined ". . . as a learner-centered method of instruction in which authority for curriculum formation is shared by the learner and the practioner" (Conti, 1979, p. 1).

The second, Hadley (1975), developed an instrument to determine adult education orientation: andragogical or pedagogical. The theoretical constructs which underlie this Educational Orientation Questionnaire are restricted to identifying those elements on which andragogy and pedagogy maintain opposite positions.

Summary of Literature Review

It is apparent from the literature that the adult enrollment in community colleges is increasing and will continue to increase. Community-junior college staff development (faculty training) is inadequate especially in relation to adult learning. Only recently have a few faculty development programs emerged that include an emphasis on the adult learner.

Furthermore, a review of literature in the field of adult education reveals some unique principals of adult learning that need to be given attention by teachers of adults. These principles are summarized in the following paragraph.

Adults can learn; intellectual abilities are not necessarily lost after early adulthood and can even improve. The speed of learning declines, but the power of learning remains. Adults are motivated to learn out of their needs related to jobs, social roles, life cycle changes, major life events, self-concept, identity, and expectations. Adults tend to be more self-directed and independent as learners in contrast to the tendencies of children and youth to be more dependent and

teacher-directed learners. Adults draw on their experience as a major resource to enhance learning. Adulthood is a time involving continuous potential for change rather than stability. Physical changes can have an effect on adult learning. Changes in vision and hearing must be taken into special consideration, and can be compensated for when given proper attention by the facilitator of learning. Environmental factors greatly influence adult learning. The climate of learning characterized by physical comfort, mutual respect, freedom of expression, and acceptance of differences is especially supportive of the adult learning process. Methods of teaching that actively involve the learner are preferred. The use of a variety of teaching methods and styles drawing from an eclectic concept of learning theories is recommended. The teacher of adults is most effective when assuming the role of facilitator. Adults benefit when they are included in establishing goals of learning and planning instructional methods.

The literature recommends that these principles related to adult learning be the basis for training of persons engaged in and responsible for the teaching of adults. These principles have great implications for the structure and content of staff development programs in institutions serving a large percentage of adult clientele. The community-junior college is one of these institutions.

CHAPTER III

METHODOLOGY AND PROCEDURES

The purpose of this study was (1) to identify the basic principles of adult learning that underlie adult education programs as affirmed by authoritative sources and (2) to determine the extent these principles were being implemented by full-time faculty in an urban junior college program. This chapter outlines the methodology and procedures used in three phases related to this study: (1) identification and validation of Principles of Adult Learning, (2) development of a data collection questionnaire, and (3) procedures used by the researcher to obtain information from the urban junior college population.

Identification and Validation of Principles

The first phase of the study was conducted by a research team of six individuals at Oklahoma State University who comprehensively reviewed the literature focusing on published research and the writings of recognized adult education authorities on the aspects of adult learning and education. The categories determined by the team that were covered by the search included (1) philosophical, (2) psychological, (3) social/ life cycle, (4) cognitive, (5) physiological, and (6) environmental and technological aspects of adult learning.

In order to conduct the review, the team first compiled a basic bibliography related to adult theory and practice. In addition, each

team member chose at least one of the basic categories in which to conduct an exhaustive literature search including textbooks, published reports of research and journal articles, including ERIC searches, and unpublished doctoral dissertations. Out of these searches, each team member submitted a written report to the group relating findings from the literature. These reports were used by each member in writing the comprehensive section in the literature chapter of this study on adult learning principles.

The principles of adult learning identified through the literature review were formed into a tentative list by the team. To form this concise and comprehensive list, a corporate decision workshop (modifed nominal group technique) was used in which each team member compiled a list of principles and concepts from the literature review. Each team member's list was combined with all other lists. The principles were then gestalted into categories and synthesized into concise statements. Through consensus the team established a tentative list of eight principles with several short explanatory statements for each principle.

These eight tentative principles were refined by a jury of experts in the field of adult education. The preliminary version of the principles along with explanatory statements was submitted to a review panel of experts (see Appendix A).

General agreement was expressed by this jury that the eight principles were indeed key to adult education. In response to the jury, the research team made modifications in the wording of the principles. In addition, this jury suggested that a ninth principle warranted separate emphasis. The research team concurred with this suggestion to include

a separate principle that focused on the unique concepts related to adult motivation. These concepts had been previously included as explanatory statements under two of the other principles (see Appendix B for the revised listing).

A second jury (consisting of adult education leaders with a high degree of visibility in the field of adult education, having geographic dispersion and philosophical heterogeneity) was utilized to validate the importance of each of the nine refined principles. See Appendix B for the validation panel and the cover letter requesting assistance. The jury was asked to rate the principles on a Likert-type scale with values from 0 to 5. Principles receiving an average of 3.75 or more were considered to be basic principles of adult learning. Through this process the following principles were determined:

PRINCIPLE 1. Adults maintain the ability to learn.

PRINCIPLE 2. Adults are a highly diversified group of individuals with widely differing preferences, needs, backgrounds, and skills.

PRINCIPLE 3. Adults experience a gradual decline in physical/sensory capabilities.

PRINCIPLE 4. Experience of the learner is a major resource in the learning situation.

PRINCIPLE 5. Self-concept tends to move from dependency to independency as an individual grows in responsibilities, experience, and confidence.

PRINCIPLE 6. Adults tend to be life-centered in their orientation to learning.

PRINCIPLE 7. Adults are motivated to learn by a variety of factors.

PRINCIPLE 8. Active learner participation in the instructional/learning process contributes to learning.

PRINCIPLE 9. A comfortable supportive environment is a key to successful learning.

All nine Principles received a value of 4.54 or higher from the validation panel. Mean values for each of the nine Principles by the validation panel are reported below:

Principle	Mean
1.	4.87
2.	4.83
3.	4.75
4.	4.66
5.	4.54
6.	4.58
7.	4.79
8.	4.87
9.	4.62

Development of the Instrument

The second phase of this study consisted of creating a data collection questionnaire which was field-tested and revised numerous times. In addition, the questionnaire was validated and checked for reliability.

From the refined listing of Principles, the research team developed numerous statements relating the use of these Principles to the instructional setting. Some of the statements were derived directly from the PALS (Principles of Adult Learning Scale) instrument created by Conti (1979). The resulting statements were incorporated into a data collection questionnaire designed to test the extent of application of the Principles. The initial questionnaire consisted of 47 statements, four to seven falling under each of the nine Principles. These statements were randomly drawn for placement order in the questionnaire. Seven statements were worded in such a manner so that the expressed concept was contrary to the identified adult learning Principles. The numbers in parenthesis in the placement listed below indicate those seven

statements. These statements that expressed contrary concepts were deliberately included in the questionnaire by the researchers to see if the respondents' paid attention to detail. The respondents were not informed that any of these statements expressed contrary concepts. The following list comprises the initial tentative placement of each item:

PRINCIPLE 1--statements 14, (17), 22, (27), 30

PRINCIPLE 2--statements 11, (26), 31, 37

PRINCIPLE 3--statements (10), (33), 36, 39, 40

PRINCIPLE 4--statements 1, 4, 19, 28, 44

PRINCIPLE 5--statements 9, 13, 21, 25

PRINCIPLE 6--statements 3, 8, 15, 24, 43

PRINCIPLE 7--statements 6, 7, 35, 38, (42)

PRINCIPLE 8--statements 5, 16, 18, 20, 23, 39, 34

PRINCIPLE 9--statements 2, 12, (32), 41, 45

Each statement according to its degree of use was to be rated by respondents on a Likert scale from 0 to 4: "not applicable" = 0, "never" = 1, "sometimes" = 2, "frequently" = 3, and "always" = 4. Definition and range for mean for each point on the scale were as follows:

"not applicable" (0 to .49) - does not apply to respondent

"never" (.50 to 1.49) - respondent does not practice this action

"sometimes" (1.50 to 2.49) - respondent practiced this action a few times in the past year

"frequently" (2.50 to 3.49) - respondent practices this action more than does not practice

"always" (3.50 to 4.00) - respondent consistently practices this action

The questionnaire was then field-tested, refined, and revised four to five separate times. The final questionnaire, reduced to 45 statements, is presented in Appendix C.

The research team made the initial placement of statements under each Principle. Further validation of the placement of statements was conducted by having a panel of experts determine the Principle to which each statement related. Validators were asked to assign a Principle number to each statement. A strong degree of consensus (over 75%) by the panel of validators indicated the final placement of each statement. See Appendix D for the cover letter and questionnaire to the validators. A list of names and institutions is also provided in Appendix D.

The final placement of statements under the nine Principles is presented below. Note that the seven statements expressing concepts contrary to the identified adult education Principles are indicated by parenthesis. Also, two statements were listed under two Principles.

PRINCIPLE 1 -- statements 14, (17), 22, (27), 30

PRINCIPLE 2 -- statements 9, 11, 14, (26), 31, 37

PRINCIPLE 3 -- statements (10), (33), 36, 39, 40

PRINCIPLE 4 -- statements 1, 4, 19, 44

PRINCIPLE 5 -- statements 13, 21, 23, 25

PRINCIPLE 6 -- statements 3, 8, 15, 24, 28, 43

PRINCIPLE 7 -- statements 6, 7, 20, 35, (42)

PRINCIPLE 8 -- statements 5, 9, 16, 18, 29, 34

PRINCIPLE 9 -- statements 2, 12, (32), 38, 41, 45

Reliability

The questionnaire was checked for reliability by test-retest with

25 people some of whom had backgrounds in college teaching, nursing and patient care, industrial training, and agriculture extension. A correlation of .70 was obtained for an average coefficient.

Questionnaire Adaption

Because the terminology for each population to be studied differed significantly, it was necessary to adapt the questionnaire to each field. Each team member changed only those terms inappropriate for their area. Those terms that created communication problems related to (1) the recipient of the educational activity (i.e., student, participant, trainee, patient), (2) the person responsible for the educational activity (instructor, teacher, trainer, facilitator), (3) the location of the educational activity (classroom, setting, program), and (4) the education activity (course, activities, class, seminar, program). Other than these modifications, the questionnaire statements remained identical.

Procedures for Data Collection

The research team selected five different fields in which to determine the extent the established Principles were being used. These specific fields as chosen were university extension, business and industry, hospital patient education, cooperative extension, and community junior college. These fields were chosen by each individual according to his/her interest area, training background, relation to field of study, and the degree to which adult learners were present in that field.

The procedures for collecting data involved the selection of subjects from which the data was to be collected, the method for securing

the data, and the process of data analysis.

Selection of Subjects

The research population of this study was composed of the full-time faculty of the metro campus of an urban junior college in the Southwest. The full-time roster of the metro campus totaled 124 faculty members who composed the subjects of this study. All faculty members taught during the months of January and February, 1981, when the study was conducted.

Data Collection Method

Permission to distribute the questionnaire constructed by the research team and modified by this researcher as previously described in this chapter was obtained from the Dean of Instruction of the metro campus. A complete roster of full-time faculty for the metro campus was provided by the Dean consisting of 124 faculty members. The researcher assigned numbers to each name on the roster from 001 to 124. The numbers were recorded on the questionnaire matching the name on the attached cover letter. See Appendix E for samples of correspondence.

The staff of the Dean of Instruction placed the designated questionnaire in each faculty member's mailbox located in the Division Office to which the faculty member was assigned. Concurrently, the Dean of Instruction informed each Division Chairman of the nature and purpose of the questionnaire to encourage response. To insure confidentiality, an envelope was attached in which to return the questionnaire. Completed questionnaires were returned to a general pick-up point which was a highly visible box in the reception area of the Office of the Dean of Instruction. A total of 34 questionnaires were returned by the first

deadline.

The Dean of Instruction made a second appeal to the Division Chairmen and reminders were sent to faculty. By the second deadline, 32 more questionnaires were received for a total of 66.

At this point, the researcher determined through the numbers coded to names on the faculty roster which faculty members had and had not returned questionnaires. A new cover letter was printed (see Appendix E) as well as a second printing of the questionnaire. The second printing of the questionnaire and the new cover letter were then distributed by the researcher to faculty members not previously responding. Again letters were placed in the appropriate mailbox. The same return procedure as the first distribution was used. From this second distribution, 12 additional questionnaires were returned giving a final total of 78 or 63% with 62% usable.

Although the overall usable response rate was 62%, the decision was made to discontinue any further attempts to gather responses. It was felt by the researcher and the Dean of Instruction that any further efforts would create problems at the college.

Data Analysis

Out of 124 questionnaires distributed, a total of 78 were returned. Data was coded and recorded by the researcher on computer punch card transcripts from which computer key punch operaters worked. A computer was programmed to compute descriptive statistics including means. The code used for each Principle to facilitate computation and to simplify table construction was as follows:

Principle	Code	Statements
1.	"ability to learn"	14, (17), 22, (27), 30
2.	"diversity"	9, 11, 14, (26), 31, 37
3.	"physical change"	(10), (33), 36, 39, 40
4.	"experience"	1, 4, 19, 44
5.	"self-concept"	13, 21, 23, 25
6.	"life-centered orientation"	3, 8, 15, 24, 28, 43
7.	"motivation"	6, 7, (20), 35, (42)
8.	"active participation"	5, 9, 16, 18, 29, 34
9.	"supportive environment"	2, 12, (32), 38, 41, 45

Statements with parenthesis around them again indicate statements expressing concepts contrary to the identified adult education Principles. The computer was programmed to reverse the mean scores of these statements so that when the statement means were grouped and a mean for each Principle was computed the Principle mean would indicate the extent the identified Principle was being utilized.

CHAPTER IV

PRESENTATION AND DISCUSSION OF FINDINGS

The nine Principles of Adult Learning determined by the study were examined in terms of means which indicated the extent of use of each principle perceived by the full-time faculty in an urban junior college program. This chapter is organized to present rank order of Principles, mean value of individual statements and a breakdown by variables. The following sections are presented in this chapter: (1) the questionnaire responses, (2) grouping of statements under Principles, (3) the mean value of individual statements, and (4) a breakdown by variable according to age, sex, faculty division, academic degree, education degree, academic institution, time of teaching experience in the academic setting, teaching experience outside the academic setting, and preparation for teaching adults.

Questionnaire Response

Sixty-three percent of the subjects (78 of 124) returned questionnaires; however, one questionnaire was not usuable, leaving a net return of 62% or 77 usable responses. Out of the junior college divisions, the Cultural and Social Services returned 16 (59%); Business returned 15 (79%), Nursing returned 14 (61%); Communications and Life Sciences returned 11 each (55% each); and Physical Sciences returned 8 (80%).

Grouping of Statements Under Principles

As explained in Chapter III, the research team developed statements relating the use of these Principles to the instructional setting. For each of these statements, a mean score was calculated from questionnaire responses. The mean for each statement was then grouped under its corresponding Principle and a corresponding mean for the grouped statements was calculated.

Each Principle was then ranked in order by mean from high to low. Table I contains a rank order by means of the nine Principles. The means range from a high of 3.15 to a low of 2.24. Principle 9 (supportive environment) had the highest mean, while Principle 2 (diversity) had the lowest mean. Of the nine Principles, eight of the Principles had means to indicate the extent of use as "frequently," while one Principle (2) had a mean to indicate the extent of use as "sometimes." The greatest gap between means occurred between Principle 2 (diversity) and Principle 1 (ability to learn).

The data indicated that the faculty perceived themselves as utilizing "frequently" eight out of the nine Principles. They perceived practicing those Principles more than they did not practice the Principles. They perceived themselves to utilize frequently the practices relating to the concept that a comfortable supportive environment is a key to successful learning. They perceived that they implemented more often than not practices that utilize experience of the learner as a major resource in the learning situation, that recognize the independent self-concept of the adult learner, that implement the life-centered orientation of the adult, that provide for a gradual decline in physical and sensory capabilities, that enable motivation to learn by a variety of

TABLE I

RANK ORDER OF PRINCIPLES

Rank	Principle Number	Mean	Principle
1.	9	3.15	A comfortable supportive environment is a key to successful learning.
2.	4	3.03	Experience of the learner is a major resource in the learning situation.
3.	7	2.92	Adults are motivated to learn by a variety of factors.
4.	6	2.81	Adults tend to be life-centered in their orientation to learning.
5.	5	2.80	Self-concept tends to move from dependency to independency as an individual grows in responsibility, experience, and confidence.
6.	3	2.66	Adults experience a gradual decline in physical/sensory capabilities.
7.	8	2.61	Active learner participation in the instructional/learning process contributes to learning.
8.	1	2.56	Adults maintain the ability to learn.
9.	2	2.24	Adults are a highly diversified group of individuals with widely differing preferences, needs, backgrounds and skills.

factors, and that permit active participation in the instructional process.

It can be observed from the data that out of the nine Principles, one of the Principles was perceived to be utilized "sometimes." In a few instances this past year, the faculty perceived themselves as practicing the actions relating to the concept that adults are a highly diversified group of individuals. More clearly stated, the faculty perceived that instructional practices recognizing and providing for diversity among adults were planned in a few instances this past year. It may be that the nature and structure of the academic setting could be contributing factors to the results of this data. The academic structure tends to operate in terms of the similarities of students rather than to emphasize the diverse nature of students. The academic institution is characterized by its pedagogical nature rather than by andragogical tendencies. Factors such as class structure, grading practices, and time limits imposed by the structure and nature of the academic institution could be a major influence on the extent that Principle 2 can be utilized by the faculty.

The Mean Value of Individual Statements

The mean for each of the forty-five questionnaire statements was calculated. Table II presents the statement means. The means ranged from a low of 1.58 (statement 10) to a high of 3.75 (statement 38). The low mean of 1.58 indicated extent of use as just within the range of "sometimes." The high mean of 3.75 indicated extent of use as "always." The lowest mean fell under Principle 3 (physical change), while the highest mean fell under Principle 9 (supportive environment).

TABLE II

MEAN VALUES FOR EACH PRINCIPLE BY QUESTIONNAIRE STATEMENTS

	Principles	Statement Number / Mean						Mean of Means
1.	Ability to learn	14 1.86	(17)* 2.95	22 3.41	(27) 1.82	30 2.76		2.56
2.	Diversity	9 2.97	11 2.13	14 1.86	(26) 1.88	31 1.76	37 2.86	2.24
3.	Physical change	(10) 1.58	(33) 2.78	36 2.16	39 3.69	40 3.08		2.66
4.	Experience	1 3.08	4 3.39	19 2.71	44 2.95			3.03
5.	Self-concept	13 2.89	21 2.45	23 2.78	25 3.07			2.80
6.	Life-centered orientation	3 3.03	8 3.09	15 2.82	24 3.13	28 2.72	43 2.07	2.81
7.	Motivation	6 2.80	7 2.44	20 3.11	35 2.08	(42) 2.38		2.92
8.	Active participation	5 1.94	9 2.97	16 2.68	18 3.12	29 2.17	34 2.79	2.61
9.	Supportive environment	2 3.30	12 2.38	(32) 2.61	38 3.75	41 3.23	45 3.43	3.15

*( ) indicates statement scores reversed for analysis.

Statement 10, receiving the low mean of 1.58, was a statement that expressed a concept contrary to adult education principles. In computation the mean score was reversed. Thus, it would appear that faculty members perceived themselves as using subdued colors "frequently" for students rather than sharp contrasting visual aids, whereas adult education Principles recommend sharp contrasting materials (Knox, 1977).

The next lowest mean, 1.76 (statement 31) was grouped under Principle 2 (diversity). The questionnaire statement was worded, "Cultural backgrounds of students are considered when planning learning activities." The data here reveal that the faculty members perceived themselves "sometimes" to consider cultural backgrounds of students when planning learning activities, whereas research on adult learning has indicated that cultural backgrounds are very important considerations for the adult learner (Cross, 1980).

In addition to the highest statement mean (statement 38), the second highest statement mean was 3.69 (statement 39). This statement was grouped under Principle 3 (physical change). These were the only two statements that had means to indicate the extent of use as "always." It would appear from these data that the faculty perceived themselves as consistently treating the questions and comments of students with importance giving a sincere response. The faculty also perceived that adequate lighting is consistently provided for the adult learning environment.

The highest means (3.75) fell under Principle 9 which was first place in rank order. The next highest mean (3.69) fell under Principle 3 which was sixth in rank order. It should be noted that under Principle 9 only statement 38 received a score indicating extent of use as

"always," while only statement 12 received a score indicating extent of use as "sometimes;" the four other statements grouped under this Principle fell in the range of "frequently."

Mean Values for Each Principle by Age

The mean for each Principle was calculated by four categories of age: (1) under 30, (2) 31-40, (3) 40-50, (4) over 50. The data are presented in Table III. The largest number of respondents was from the 31-40 age group (42 out of 77). The second largest number of respondents was the 40-50 age group (17 out of 77). The smallest number of respondents was under 30 age group with 5 out of 77.

The under 30 age group scored the lowest mean on Principle 1 (ability to learn), Principle 4 (experience), Principle 5 (self-concept), Principle 2 (diversity), Principle 6 (life-centered orientation), Principle 8 (active participation), and tied for lowest mean on Principle 7 (motivation). Of Principles 1, 5, 6, 7, and 8, the under 30 age group indicated extent of use as "sometimes," whereas on these Principles the older groups indicated extent of use as "frequently" (except the 31-40 age group scored "sometimes" on Principle 7). The under 30 age group scored a higher mean than the 31 to 40 age group on Principle 3 (physical change) and Principle 9 (supportive environment); however, the two older groups scored higher means for these Principles and all groups remained in the same range of use.

Observation of these data would indicate that faculty in the under 30 age group perceived themselves to use the Principles to a lesser extent than the older age groups. However, because of the relatively small number of respondents in the under 30 age group these data should

TABLE III

MEAN VALUES FOR EACH PRINCIPLE BY AGE

Principles	-30 N=5	31-40 N=42	40-50 N=17	50+ N=13
1. Ability to learn	2.47	2.64	2.53	2.61
2. Diversity	1.88	2.27	2.17	2.30
3. Physical change	2.25	2.04	2.71	2.49
4. Experience	1.75	2.03	1.90	2.13
5. Self-concept	2.42	3.40	2.65	2.91
6. Life-centered orientation	2.29	2.93	2.75	2.85
7. Motivation	2.40	2.40	2.50	2.51
8. Active participation	2.25	2.63	2.51	2.81
9. Supportive environment	3.00	2.73	3.05	3.06

be used with caution, and more research should be conducted for the age variable.

Mean Values for Each Principle by Sex

Table IV records means for each Principle according to sex. Females consistently scored a higher mean for every Principle except Principle 3 (physical change) -- the difference of means being slight here (male, 2.73; female, 2.48), and yet, the range on extent of use indicating "frequently" for males and "sometimes" for females. The greatest gap between the mean of sexes was on Principle 5 (self-concept) -- male, 2.59; female, 2.96 (these scores remained in the range of "frequently"). From the observed data it appeared that females perceived themselves as supporting independence in the instructional/learning process to a greater extent than males perceived themselves. Females were more aware of using instructional processes that support the independent nature of the adult learner. For Principles 1, 4, 7, and 8, female faculty perceived their extent of use as "frequently" while male faculty perceived their extent of use as "sometimes." Overall, female faculty perceived that they used practices supporting all the Principles except one to a greater extent than the male faculty.

Mean Values for Each Principle
by Faculty Divisions

Faculty Division Means for each Principle are reported in Table V. Nursing had the highest means for Principles 1, 2, 3, 5, and 8. Communications had the highest means for Principles 4, 6, and 9. Business had the highest means for Principle 7. Life Sciences and Health

TABLE IV

MEAN VALUES FOR EACH PRINCIPLE BY SEX

Principles	Male	Female
1. Ability to learn	2.45	2.66
2. Diversity	2.07	2.35
3. Physical change	2.73	2.48
4. Experience	1.85	2.07
5. Self-concept	2.57	2.96
6. Life-centered orientation	2.72	2.85
7. Motivation	2.47	2.54
8. Active participation	2.38	2.75
9. Supportive environment	2.89	3.20

TABLE V

MEAN VALUES FOR EACH PRINCIPLE BY FACULTY DIVISIONS

Principles	Business N=15	Communications N=11	Nursing N=14	Cultural and Social Services N=16	Life Science and Health N=11	Physical Science N=8
1. Ability to learn	2.60	2.62	2.68	2.45	2.51	2.53
2. Diversity	2.21	2.41	2.50	2.02	2.11	2.10
3. Physical change	2.76	2.40	2.84	2.48	2.51	2.45
4. Experience	1.92	2.32	2.25	1.82	1.70	1.79
5. Self-concept	2.70	2.86	3.29	2.59	2.50	2.78
6. Life-centered orientation	2.94	3.02	2.76	2.66	2.52	2.75
7. Motivation	2.91	2.35	2.71	2.28	2.49	2.48
8. Active participation	2.54	2.82	2.93	2.32	2.36	2.50
9. Supportive environment	3.04	3.48	3.32	3.07	2.56	2.69

Division scored the lowest means for Principles 4, 5, 6, and 9. Cultural and Social Services scored the lowest means for Principles 1, 2, 7, and 8. Communications scored the lowest mean for Principle 3. These data would indicate that the Nursing Division faculty perceived themselves to have the highest implementation of the Principles, while the Life Sciences and Health Division and Cultural and Social Sciences faculty perceived themselves to have the lowest implementation of the Principles.

For Principle 1, 5, 6, and 9 extent of use was scored by all Divisions as "frequently." Principle 4 (experience) was scored by all Divisions as "sometimes." For Principle 2 (diversity), the Nursing Division scored extent of use as "frequently" while all other Divisions scored extent of use as "sometimes." Business, Nursing, and Life Sciences scored "frequently" for Principle 3 (physical change), while Communication, Cultural and Social Services, and Physical Science scored extent of use as "sometimes." For Principle 7 (motivation), Business and Nursing indicated extent of use as "frequently," while Communications, Life Sciences and Health, and Physical Sciences indicated extent of use as "sometimes." The extent of use of Principle 8 (active participation) was "frequently" for Business, Communications, Nursing, and Physical Sciences but "sometimes" for Cultural Services and Life Sciences and Health.

The highest mean scores computed were for Principle 9 (supportive environment) by the Communications Division (3.48) and the Nursing Division (3.32). All Divisions except Physical Science scored their highest mean on Principle 9. All Divisions scored their lowest mean on Principle 4 (experience). The data would indicate that by Division the

faculty perceived itself to provide a comfortable supportive environment in the instructional/learning process more than any other Principle. All Divisions perceived themselves as utilizing experience of the learner less than any other Principle.

For Principle 4 (experience) there was an apparent difference between means for the Communications Division (2.32) and Life Sciences and Health Division (1.70). These data would suggest that the Communications Division implemented processes that recognize experience as a major resource for learning to a much greater degree than the Life Sciences and Health Division. This may be influenced by the nature of the subject matter in the two divisions. Bloom's Taxonomy may give some clues here. The Life Sciences may be involved in teaching concepts and facts at the lower level of the taxonomy (knowledge and comprehension), while subjects such as speech, literature, composition, and language may tend to relate to and pull from human experience involving application and synthesis.

Another apparent difference appeared between Divisions on Principle 7 (motivation) -- Business Division, 2.91; Cultural and Social Services, 2.28. These data would indicate that the Nursing Division perceived that they implemented processes to motivate adults to learn by a variety of factors to a greater extent than the Cultural and Social Services. For Principle 9 (supportive environment), there was quite a difference in perception of implementation between the Communications Division (3.48) and the Physical Sciences Division (2.56). It would appear that the Communications Division was much more involved in processes that contributed to a supportive environment than was the Physical Sciences Division. Again, this might be accounted for by the nature of subject

matter. Speech, language, and composition by nature require interaction between students, while Physical Science deals with materials, chemicals, formulas and the interaction of other such sources rather than human resources.

Mean Values for Each Principle
by Academic Degree

Four categories of Academic Degrees and mean scores for each Principle are reported on Table VI. Of the respondents, 12 had bachelors degrees, 45 had master's degrees, 10 had doctoral degrees. For almost all the Principles mean scores showed only a slight difference between the three groups. However, on Principles 2 (diversity), 5 (self-concept), and 8 (actice participation) the doctoral degree category scored noticeably lower means than the bachelors and master's. The greatest gap in mean scores appeared on Priniciple 8 (doctoral, 1.97; master's, 2.71; bachelors, 2.63). From the observed scores it appears that faculty with more formal training perceived themselves to implement to a lesser degree processes designed to involve adults in active learner participation. Doctoral degree indicated extent of use for Principle 8 as "sometimes" while the others indicated extent of use as "frequently." Also, doctoral degree tended to practice less processes that recognize the independent self-concept of the adult. On Principle 5 (self-concept) doctoral degrees scored extent of use as "sometimes" while the others scored extent of use as "frequently." Master's degrees indicated extent of use for Principle 7 (motivation) as "sometimes" while the others indicated "frequently." Overall, faculty with doctoral degrees perceived themselves as implementing the Principles to a lesser extent than the

TABLE VI

MEAN VALUES FOR EACH PRINCIPLE BY ACADEMIC DEGREE

Principles	Bachelors N=12	Masters N=45	Doctors N=10
1. Ability to learn	2.53	2.59	2.54
2. Diversity	2.36	2.26	2.08
3. Physical change	2.63	2.52	2.70
4. Experience	1.99	2.06	1.77
5. Self-concept	2.90	2.89	2.30
6. Life-centered orientation	2.89	2.79	2.70
7. Motivation	2.78	2.43	2.64
8. Active participation	2.63	2.71	1.97
9. Supportive environment	3.07	3.09	3.02

faculty with bachelors or master's degrees. This may be due to the level of expertise and specialization required by the higher degrees and longer exposure to pedagogical methods on which formal faculty methods are modeled.

Mean Values for Each Principle
by Education Degree

It can be noted from Table VII that scores are almost uniform for faculty with and without education degrees. The only noticeable difference in means is observed for Principle 2 (diversity). Faculty with education degrees perceived that they implemented to a slightly greater extent practices that recognized adults as a highly diverse group differing in preferences, needs, background, and skills.

Principle 7 (motivation) is the only Principle for which there is an observed difference in range on the scale between the two groups. For Principle 7 faculty with no education degree indicated perceived extent of use as "frequently" while faculty with education degrees indicated extent of use as "sometimes."

Mean Values for Each Principle by
Other Academic Institution Experience

Table VIII reports means values for each Principle by six categories of academic experience in addition to junior college teaching. Sixty nine of the respondents indicated having experience in academic institutions in addition to the junior college. Junior college faculty who had experience teaching in Adult Basic Education scored consistently higher means on all Principles except Principles 6 (life-centered

TABLE VII

MEAN VALUES FOR EACH PRINCIPLE BY EDUCATION DEGREE

Principles	No Education Degree N=50	Yes Education Degree N=24
1. Ability to learn	2.53	2.63
2. Diversity	2.11	2.43
3. Physical change	2.54	2.67
4. Experience	1.98	1.95
5. Self-concept	2.79	2.76
6. Life-centered orientation	2.77	2.78
7. Motivation	2.54	2.43
8. Active participation	2.57	2.58
9. Supportive environment	3.06	3.04

TABLE VIII

MEAN VALUES FOR EACH PRINCIPLE BY EXPERIENCE
IN OTHER ACADEMIC INSTITUTIONS

Principles	Secondary Public Schools (27)	Adult Basic Ed. (4)	Liberal Arts College (8)	Comprehensive 4-yr. College (13)	Doctoral Granting University (14)	Research University (3)
1. Ability to learn	2.53	2.90	2.70	2.66	2.51	2.40
2. Diversity	2.26	2.63	2.21	2.28	1.93	2.28
3. Physical change	2.53	2.60	2.23	2.66	2.49	2.93
4. Experience	1.97	2.29	2.17	2.10	1.73	1.94
5. Self-concept	2.85	3.06	3.00	2.90	2.57	2.58
6. Life-centered orientation	2.75	3.13	3.17	3.03	2.56	3.06
7. Motivation	2.52	2.75	2.33	2.62	2.47	2.53
8. Active participation	2.52	2.92	2.94	2.71	2.25	2.33
9. Supportive environment	3.05	3.33	2.83	3.10	2.96	2.89

orientation) and 3 (physical change) in which faculty with experience in Liberal Arts Colleges and Research University scored slightly higher, respectively. Faculty with experience in Doctoral Granting Universities scored consistently lower means for all Principles except Principle 1 (ability to learn) on which the Research University category scored slightly lower, and Principle 3 (physical change), Principle 7 (motivation) and Principle 9 (supportive environment) on which Liberal Arts category scored slightly lower. All faculty having experience in other academic institutions indicated perceived extent of use for Principles 5 (self-concept), Principle 6 (life-centered orientation), and Principle 9 (supportive environment) as "frequently." All faculty in these categories indicated perceived extent of use for Principle 4 (experience) as "sometimes." Except for Principle 4 faculty with experience in Adult Basic Education perceived their extent of use of all other Principle as "frequently." For Principle 1 (ability to learn) all categories of faculty perceived extent of use as "frequently," while Research University indicated extent of use as "sometimes." For Principle 3 (physical change) and Principle 7 (motivation) Liberal Arts and Doctoral Granting University indicated extent of use as "sometimes" while all others scored "frequently." On Principle 8 (active participation) Doctoral Granting University and Research University indicated extent of use as "sometimes" while the other categories perceived use as "frequently."

Over all, the observed data reveal that Junior College faculty who have had experience teaching in Adult Basic Education perceived practicing the Principles to a greater extent, while faculty with experience in Doctoral Granting Universities practice the Principles to a lesser extent. Leighton's study (1976) revealed that faculty tend to maintain

the style of teaching expected on their first job and to carry this style over into subsequent jobs regardless of differences in clientele. However, caution should be used concerning the data reported above due to the small number of respondents with experience in Adult Basic Education. More research is needed in regard to the variable of Academic Institution Experience.

Mean Values for Each Principle by Experience Teaching in Other Fields

Mean Values by Experience Teaching in Other Fields are recorded for each Principle on Table IX. Forty-five respondents had not taught in other fields and 29 had taught in other fields. The scores are very close, and yet for Principles 3 (physical change), 7 (motivation), and 8 (active participation) faculty not having taught in other fields implement these "frequently," while faculty having experience in other fields implement these "sometimes." From these data it appears that faculty who have not had experience in other fields tend to implement the Principles more than faculty who have taught in other fields. Considering mean scores, all scores are higher for those not having taught in other fields than those having taught in other fields except for Principle 1 (ability to learn).

Mean Values for Each Principle by Non-Academic Teaching Experience

Non-Academic Teaching Experience was reported in four categories: "none," "community service," "church," business and industry." The mean of these categories in relation to each Principle is recorded in Table

TABLE IX

MEAN VALUES FOR EACH PRINCIPLE BY TEACHING EXPERIENCE IN OTHER FIELDS

Principles	Has Not Taught in Other Fields N=45	Has Taught in Other Fields N=29
1. Ability to learn	2.54	2.60
2. Diversity	2.29	2.10
3. Physical change	2.67	2.44
4. Experience	2.04	1.87
5. Self-concept	2.79	2.75
6. Life-centered orientation	2.84	2.67
7. Motivation	2.60	2.36
8. Active participation	2.63	2.48
9. Supportive environment	3.16	2.90

TABLE X

MEAN VALUES FOR EACH PRINCIPLE BY NON-ACADEMIC TEACHING EXPERIENCE

Principles	None N=29	Community Service N=10	Church N=5	Business and Industry N=5	Community Serv. and Church N=9	Comm. Serv. and Bus. and Ind. N=5
1. Ability to learn	2.46	2.74	2.60	2.48	2.67	2.52
2. Diversity	2.03	2.22	2.40	2.27	2.43	2.47
3. Physical change	2.48	2.78	2.56	3.00	2.47	2.68
4. Experience	1.92	1.93	2.13	1.87	2.06	2.03
5. Self-concept	2.66	2.80	2.75	2.80	2.81	3.10
6. Life-centered orientation	2.66	2.80	2.83	2.77	2.85	2.87
7. Motivation	2.30	2.82	2.56	2.80	2.47	2.72
8. Active participation	2.38	2.67	2.60	2.83	2.76	2.77
9. Supportive environment	2.93	3.02	3.20	3.33	3.41	3.07

X. The means of all Principles are lower for faculty who had no teaching experience outside the academic. All the categories responded to the extent of use as "frequently" for Principles 5, 6, and 9 and as "sometimes" for Principles 2 and 4. Those faculty with no teaching experience outside the academic setting perceived that their extent of use of Principle 8 (active participation) was "sometimes" while faculty with teaching experience outside the academic setting perceived their use of this Principle as "frequently." For Principle 3 (physical change) and Principle 7 (motivation) those faculty with no experience outside the academic and those faculty in the combined category of Community Service and Church perceived their extent of use as "sometimes" while the other categories indicated "frequently." On Principle 1 (ability to learn), faculty not having experience teaching outside the academic and faculty who had had experience teaching in Business and Industry indicated that they perceived their extent of use of this Principle as "sometimes" while the other categories reported perceived use as "frequently." It could be observed from these data that those faculty members who have had teaching experience outside the academic setting perceived that they implement the practices related to the Principles to a greater extent than faculty who have had no teaching experience outside the academic setting.

Mean Values for Each Principle by Years of Teaching in Academic Fields

The mean values for each Principle by years of teaching in an academic field is recorded in Table XI. Years are grouped into four categories: (1) under five, (2) 5 to 10, (3) 10 to 15, and (4) over 15.

TABLE XI

MEAN VALUES FOR EACH PRINCIPLE BY YEARS TEACHING IN ACADEMIC FIELD

Principles	-5 (N=12)	5-10 (N=23)	10-15 (N=26)	15+ (N=12)
1. Ability to learn	2.55	2.56	2.48	2.66
2. Diversity	2.21	2.24	2.15	2.31
3. Physical change	2.50	2.64	2.71	2.61
4. Experience	1.91	2.00	2.12	1.57
5. Self-concept	2.60	2.28	2.70	2.05
6. Life-centered orientation	2.83	3.01	2.33	2.69
7. Motivation	2.50	2.76	2.50	2.41
8. Active participation	2.33	2.77	2.53	2.62
9. Supportive environment	2.93	2.95	3.14	3.00

Faculty having taught under 5 years, 10 to 15 years, and over 15 years each scored lowest means on 3 of the Principles. Faculty with 5 to 10 years did not score the lowest mean for any of the Principles.

Those faculty members who had taught in an academic field for 10 to 15 years scored the highest mean on Principles 3, 4, 5, and 9. Faculty teaching over 15 years scored highest on Principles 1 and 2. Faculty who had taught less than five years did not score highest on any Principle. The observation from these data would be that faculty having taught in the field more than five years perceived themselves to implement the Principles to a greater extent than faculty who have taught less than five years.

Mean scores indicated that all the faculty regardless of age perceived themselves as using Principles 3 (physical change), Principle 4 (experience) and Principle 9 (supportive environment) to the extent of "frequently." All faculty for this variable indicated perceived use of Principle 2 (diversity) as "sometimes." Faculty having taught from 10 to 15 years perceived using Principles 1 and 6 to the extent of "sometimes" while the others used them "frequently." For Principle 5 (self-concept) the 5 to 10 year group and the over 15 year group indicated perceived use as "sometimes" while the others were "frequently." Principle 7 (motivation) was used "sometimes" by the over 15 years group and Principle 8 was perceived as being utilized "sometimes" by the faculty having taught less than 5 years, while other categories used both these Principles "frequently."

TABLE XII

MEAN VALUES FOR EACH PRINCIPLE BY PREPARATION FOR TEACHING ADULT LEARNERS

Principles	None N=11	Workshops Inservices Conferences N=24	Formal Degree Program N=4	Workshops Inservices Conferences Courses (N-10)	Workshop Inservice Conferences Formal Degree (N=3)	Combination of All N=16
1. Ability to learn	2.67	2.53	2.50	2.70	2.27	2.51
2. Diversity	2.35	2.04	2.13	2.53	2.00	2.23
3. Physical change	2.16	2.59	2.90	2.66	2.73	2.73
4. Experience	2.93	2.88	2.69	2.98	2.67	3.25
5. Self-concept	2.75	2.79	2.38	2.98	1.92	3.05
6. Life-centered orientation	2.86	2.84	2.63	2.90	1.95	2.77
7. Motivation	2.51	2.42	2.30	2.84	2.00	2.58
8. Active participation	2.49	2.51	2.63	2.70	2.33	2.81
9. Supportive environment	3.02	3.25	2.96	2.88	2.56	3.13

Mean Values for Each Principle by Preparation for Teaching Adult Learners

Table XII reports the means for each Principle in relation to Preparation for Teaching Adult Learners. The highest means for each of the Principles was scored by one of those categories indicating preparation for teaching adults. It would appear from these data that faculty who have had some preparation for teaching the adult perceived themselves to use the Principles to a greater extent than those who have had no preparation for teaching adult learners. The greatest number of high mean scores was recorded by faculty who had a combination of all the kinds of preparation: these high means were scored on Principles 4, 5, 8, and 9. The two categories that had the fewest number of respondents showed the greatest number of low mean scores. Since the number of respondents are so few for the category of Formal Degree and the category combining Workshops, Inservice, Conferences and Formal Degree, these data should be used with caution. Thus, if these two categories are disregarded for the sake of establishing a pattern among the other four categories, it can be noted that the greatest number of low mean scores are recorded by faculty who have had no preparation for Teaching Adult Learners. These data would tend to support the observation that faculty who have had some preparation for teaching the adult learner perceived themselves to implement the Principles to a greater extent than faculty not having preparation for teaching the adult.

If these two categories are disregarded again, all the other categories have recorded scores to indicate the perceived use of Principles 1 (ability to learn), 4 (experience), 5 (self-concept), 6 (life-centered orientation), and 9 (supportive environment) as "frequently." For

Principle 3 (physical change) and Principle 8 (active participation) all faculty indicated extent of use as "frequently" except those not having preparation who perceived use as "sometimes."

Specialization and Subject Fields

There were no apparent groupings or patterns for the specialization and subject fields. Therefore, it was impossible to find any meaningful information from the responses.

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Discussion in this chapter is presented in three parts. The first section presents a synthesis of the study. The researcher's conclusions are presented next, and implications for research and practice are discussed in the last section of the chapter.

Summary

The purpose of this study was (1) to identify the basic principles of adult learning that underlie adult education programs as affirmed by authoritative sources and (2) to determine the extent these principles are being implemented by the full-time faculty in an urban community junior college program.

Through a comprehensive literature review a research team of six individuals identified nine Principles of Adult Learning. These Principles were validated by a jury of adult education leaders. From the validated Principles, a questionnaire was developed to measure the extent of application of Principles. The questionnaire was verified, checked for reliability, and then adapted for the several populations to be studied by the research team.

The research population of this study was composed of the full-time faculty of the Metro Campus of an urban junior college in the Southwest. Out of 124 questionnaires distributed to the faculty, 78 were returned.

From the data collected, descriptive statistics including means were computed to indicate the extent of use of each Principle as perceived by the faculty. The Principles were rank ordered by means, and the mean value of each Principle was examined in terms of the following variables: age, sex, faculty divisions, formal degrees, education, degree, academic institution experience, time of teaching experience in the academic setting, and preparation for teaching adults. The study was based on observed data, and no statistical tests were utilized.

The major findings of this study may be summarized as follows:

1. Nine basic Principles of Adult Learning were identified.
2. At an urban junior college in the Southwest, the faculty perceived themselves to utilize "frequently" eight of the Principles (1, 3, 4, 5, 6, 7, 8, 9) and to utilize "sometimes" one of the Principles (2).
3. The under 30 age group perceived themselves as implementing the Principles to a lesser extent than the three older groups.
4. Female faculty perceived that they used practices supporting the Principles to a greater extent than the male faculty.
5. The Nursing Division faculty perceived themselves to have the highest implementation of the Principles, while the Life Sciences and Health Division faculty and Cultural and Social Services Division faculty perceived themselves to have the lowest implementation of the Principles.
6. Faculty with doctoral degrees perceived themselves as implementing the Principles to a slightly lesser extent than the faculty with bachelors or masters degrees.
7. Faculty with education degrees and faculty without education

degrees perceived their implementation of the Principles as about the same.

8. The faculty who have had experience teaching in Adult Basic Education perceived themselves as practicing the Principles to a greater extent than other faculty, while faculty with experience in Doctoral Granting Universities perceived themselves as practicing the Principles to a lesser extent.
9. Faculty who have not had experience teaching in other fields perceived themselves as practicing the Principles to a slightly greater extent than the faculty who have had experience in other fields.
10. Faculty members who have had teaching experience outside the academic setting such as in Community Service, Church, Business and Industry perceived that they implement the practices related to the Principles to a greater extent than faculty who have had no teaching experience outside the academic setting.
11. Faculty having taught in an academic field more than five years perceived themselves to implement the Principles to a greater extent than faculty who have taught less than five years.
12. Faculty who have had some preparation for teaching the adult perceived themselves as implementing the Principles to a greater extent than those faculty who have had no preparation for teaching adult learners.

Conclusions

The conclusions from the study are as follows:

1. This study effectively identified nine basic Principles of

Adult Learning.

2. The developed questionnaire is a potentially effective tool for analyzing practices in the community college setting. Its primary value is in the exploration of the application of the nine Principles.
3. This study demonstrated that faculty of an urban junior college perceived themselves as "frequently" implementing the majority of the Principles of Adult Learning.
4. This study also demonstrated that perception of the extent of implementation of the Principles by this particular faculty is observed to vary according to such factors as sex, age, faculty division, formal degrees, other academic settings, teaching experience outside the academic, and preparation for teaching the adult learner.

Implications

The results of this study have implications for research and practice. Some of the more important implications are as follows:

1. Future research on the Principles should be conducted to identify significant differences that may exist among the variables presented in this study in order that inferences may be made to other populations.
2. The present study dealt with the perceived utilization of the Principles by the faculty. Future research could concentrate on the actual utilization in the classroom setting perhaps by the use of observational techniques.
3. This study could be extended to additional community junior

colleges.

4. The study could be conducted to examine the extent of Principle implementation by the part-time faculty.
5. The questionnaire could be used again in other settings to further test adult education practices.
6. The results of this study and other studies could be examined for their use in developing preservice and inservice education programs for community junior college teachers.
7. This study could be correlated to the other studies conducted by the research team.
8. Students could be included to determine student perception of utilization of Principles of Adult Learning by the faculty.
9. Additional studies are needed to determine the effect that different kinds of preparation for teaching the adult learner can have on the extent of actual implementation of the Principles in adult learning settings.
10. Another pertinent study would be to determine the effect that teaching in settings outside the academic has on faculty practices in the academic setting.
11. Further research is needed to determine extent of use of these Principles according to age.
12. Further study is needed to determine the effect of the structure of academic institutions on the implementation of the Principles.

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APPENDICES

APPENDIX A

PRELIMINARY STATEMENTS OF PRINCIPLES AND REVIEW PANEL

Directions:

Listed below are eight principles of adult education that have been identified from an exhaustive review of the literature related to adult education. Included with each are sample supportive statements which further define each of the eight basic concepts.

On the response sheet, place an X over the number which you feel most closely reflects your perception of the statement as an underlying principle of adult education.

1. Adults maintain the ability to learn.

    a. There is a decline in the rate of learning but not in the ability to learn.

    b. Age patterns and intellectual ability may vary among and within adults.

    c. Exercise of the intellectual function tends to increase the capacity to learn.

2. Adults are a highly diversified group of individuals with widely differing preferences, needs, backgrounds, and skills.

    a. Adult development is continuous and multifaceted.

    b. Categorical changes in adults cannot be predicted.

    c. Adult learning styles are varied and require an eclectic approach.

3. Experience of the learner is a major resource in the learning situation.

    a. New learning should be related to past experience.

    b. Individual experience provides resources for group learning.

4. An individual's self concept tend to move from dependency to independency as responsibilities, experience, and confidence are built up.

    a. The adult sees himself as being able to make his own decisions and face their consequences to manage his own life.

5. Evolving life roles and events influence adults' readiness to learn.

    a. Adults tend to have an expectation of immediate application of knowledge.

    b. Expectations for the future can be as important for motivation for learning as actual experience.

c. Needs related to changes in life style and responsibility bring about teachable moments.

6. Active learner participation in the instructional/learning process is important.

   a. Adult learning occurs best when the student is motivated to identify needs, set goals, and evaluate progress.

   b. The quality of learning is directly related to the quality of interaction within the learning environment.

   c. Adults learn best when they become actively involved in the learning activities.

7. A comfortable supportive environment is a key to a successful learning experience.

   a. Physical conditions such as seating arrangements, room temperature, ventiliation, and lighting have an impact.

   b. The emotional atmosphere must be open, positive, and supportive of the adults' attempts to learn.

   c. Instructor creates a nonauthoritarian climate with mutual respect and acceptance of differences.

8. There is a gradual decline in physical/sensory capabilities.

   a. Visual impairment, hearing loss, and decline in reaction time are the more common physical conditions that provide implications for adult learning.

   b. There are general trends but these may not affect all students.

Initial Review Panel

Dr. Malcolm Knowles, Professor Emeritus, North Carolina State University

Dr. Albert Campbell, Associate Professor of Adult Education, Texas A&M University

APPENDIX B

REFINED PRINCIPLES AND VALIDATION PANEL

(COVER LETTER)

November 7, 1980

The School of Occupational and Adult Education at Oklahoma State University is conducting an exhaustive research attempting to (1) identify the basic principles underlying adult education programs, and (2) determine the extent to which that these principles are being utilized in a variety of adult learning settings.

Literature review has now been completed by a team to determine the repetition of various adult learning principles in research and in the recognized literature of the field. The following areas were covered in the comprehensive literature review:

a. Philosophical background of Adult Education

b. Cognitive factors in Adult Learning

c. Psychological factors in Adult Learning

d. Social/life cycle factors in Adult Learning

e. Physiological/Environmental methodology for Adults

f. Teaching/Instructional methodology for Adults

We need your help to verify and/or refute basic principles we have synthesized from the literature. Would you please review the nine statements on the enclosed questionnaire rating each statement as you feel appropriate? Thank you in advance for your cooperation.

Sincerely,

Marie Oberle
Graduate Student

MO/km

VALIDATION PANEL

1.	Dr. Art Burrichter	Professor of Adult Ed., Florida Atlantic University
2.	Dr. Mary Grefe	President, American Association of University Women/Post
3.	Dr. Roger Heimstra	Professor of Adult Ed., Syracuse University
4.	Dr. Carol Kasworm	Assistant Professor Adult Education University of Texas
5.	Dr. Chester Kelvins	Dean of Continuing Education City University, Los Angeles
6.	Dr. Alan Knox	Professor of Adult Education University of Illinois - Urbana
7.	Dr. Bianca Marguglia	Department of Nursing University of Hawaii at Monoa
8.	Dr. Peggy Mezaros	Associate Director of Home Economics Cooperative Extension, Oklahoma State Univ.
9.	Dr. Leonard Nadler	Professor of Adult Education George Washington University
10.	Dr. Robert Reisbeck	Extension Communications Training Specialist Oklahoma State University
11.	Dr. William Rivera	Project Director Clearinghouse of Resource for Educators of Adults Syracuse University
12.	Dr. Don Seaman	Professor of Adult Education Texas A&M University

PRINCIPLES OF ADULT LEARNING

Directions:

Listed below are nine PRINCIPLES OF ADULT EDUCATION that have been identified from an exhaustive review of the literature related to adult education. Included with each are *supportive concepts* which further define each of the nine basic principles.

Place an X over the number in the left margin which you feel most closely reflects your perception and acceptance of the statement as an underlying principle of adult education. There will be a total of nine responses--one for each numbered principle; the lettered concepts are explanatory in nature.

Use the following scale to respond. 1 is Not Acceptable, 5 is Acceptable.

Not Acceptable	Questionable	Undecided	Some Reservations	Acceptable
/	/	/	/	/

Not Acceptable — Acceptable

1 2 3 4 5

1. ADULTS MAINTAIN THE ABILITY TO LEARN.

This principle includes the following concepts:

a. *There is a decline in the rate of learning but not in the ability to learn.*

b. *Age patterns and intellectual ability may vary among and within adults.*

c. *Exercise of the intellectual function tends to increase the capacity to learn.*

Not Acceptable — Acceptable

1 2 3 4 5

2. ADULTS ARE A HIGHLY DIVERSIFIED GROUP OF INDIVIDUALS WITH WIDELY DIFFERING PREFERENCES, NEEDS, BACKGROUNDS, AND SKILLS.

This principle includes the following concepts:

a. *Adult development is continuous and multifaceted.*

b. Some categorical changes in adults cannot be predicted.

c. Adult learning styles are varied and require an eclectic approach.

Not Acceptable — Acceptable

1 2 3 4 5

3. ADULTS EXPERIENCE A GRADUAL DECLINE IN PHYSICAL/SENSORY CAPABILITIES.

This principle includes the following concepts:

a. Visual impairment, hearing loss, and decline in reaction time are the more common physical conditions that have implications for adult learning.

b. The rates of decline for specific capabilities vary with each individual.

Not Acceptable — Acceptable

1 2 3 4 5

4. EXPERIENCE OF THE LEARNER IS A MAJOR RESOURCE IN THE LEARNING SITUATION.

This principle includes the following concepts:

a. New learning is most effective when related to past experience.

b. Individual experience provides resources for group learning.

Not Acceptable — Acceptable

1 2 3 4 5

5. SELF-CONCEPT TENDS TO MOVE FROM DEPENDENCY TO INDEPENDENCY AS AN INDIVIDUAL GROWS IN RESPONSIBILITIES, EXPERIENCE, AND CONFIDENCE.

This principle includes the following concepts:

a. The adult sees self as being able to make own decisions and face their consequences to manage own life.

b. Adults preconditioned by school experiences to perceive the role of learners to be dependent may need help in reconceptualizing the role of learner as self-directed.

Not Acceptable — Acceptable

1 2 3 4 5

6. ADULTS TEND TO BE LIFE-CENTERED IN THEIR ORIENTATION TO LEARNING.

This principle includes the following concepts:

a. *Activities and events in lives of adults have an impact on their involvement in learning experiences.*

b. *Needs related to changes in life tasks and responsibilities bring about teachable moments.*

c. *Adults tend to have an expectation of immediate application of knowledge.*

Not Acceptable — Acceptable

1 2 3 4 5

7. ADULTS ARE MOTIVATED TO LEARN BY A VARIETY OF FACTORS.

This principle includes the following concepts:

a. *The need to grow, as an individual, influences an adult's motivation to learn.*

b. *Negative self-concept, fear of failure and inaccessibility of learning opportunities are some of the factors that may influence the degree of motivation.*

c. *Expectations for the future can be as important for motivation for learning as actual experience.*

Not Acceptable — Acceptable

1 2 3 4 5

8. ACTIVE LEARNER PARTICIPATION IN THE INSTRUCTIONAL/LEARNING PROCESS CONTRIBUTES TO LEARNING.

This principle includes the following concepts:

a. *Adult learning occurs best when the student participates in identifying needs, setting goals, and evaluating progress.*

b. The quality of learning is directly related to the quality of interaction within the learning environment.

c. Adults learn best when they become actively involved in the learning activities.

Not Acceptable / / / / Acceptable

1 2 3 4 5

9. A COMFORTABLE SUPPORTIVE ENVIRONMENT IS A KEY TO SUCCESSFUL LEARNING.

This principle includes the following concepts:

a. An atmosphere that is open, positive, and supportive of the adult's attempts to learn enhances learning.

b. A nonauthoritarian climate, with mutual respect and acceptance of differences, facilitates learning.

c. Phsyical conditions such as seating arrangements, room temperature, ventilation, and lighting influence learning.

APPENDIX C

FINAL QUESTIONNAIRE

DIRECTIONS: The following questionnaire contains numerous statements about teaching/learning activities for adults. For each statement please indicate how often you practice the action described in the item. Using the following scale, circle the appropriate number for each item. For example:

Never - You do not practice this action.
Sometimes - In a few instances this past year you have practiced this action.
Frequently - You practice this action more times than you do not practice this action.
Always - You consistently practice this action.

If the item does not apply to you, please circle NA (not applicable).

Not Applicable	Never	Sometimes	Frequently	Always
NA	1	2	3	4

1. Students are helped to relate new learning to their prior experiences. NA 1 2 3 4
2. Errors are accepted as a natural part of the learning process. NA 1 2 3 4
3. Courses are presented that are relevant to the current problems and needs of the various students served. NA 1 2 3 4
4. Knowledge and competencies are utilized to achieve educational objectives. NA 1 2 3 4
5. Students are included in making decisions about the material that will be covered. NA 1 2 3 4
6. An attempt is made to utilize the factors that keep students participating in offerings. NA 1 2 3 4
7. Classes are scheduled at locations that provide the greatest accessibility to as many people as possible. NA 1 2 3 4
8. Students are helped to identify problems that they need to solve. NA 1 2 3 4
9. Students are encouraged to choose and use the most suitable means to accomplish their goals. NA 1 2 3 4
10. The instructor uses subdued colors rather than sharp contrasts in visual aids. NA 1 2 3 4
11. Instructional objectives are adapted to match the individual abilities of the student. NA 1 2 3 4
12. The meeting room is arranged so that it is easy for students to interact. NA 1 2 3 4

Not Applicable	Never	Sometimes	Frequently	Always
NA	1	2	3	4

13.	Students and instructors relate to each other as partners in learning.	NA	1	2	3	4
14.	Students are allowed to work at their own rate regardless of the amount of time it takes them to learn a new concept.	NA	1	2	3	4
15.	Subject matter is related to problems of everyday living.	NA	1	2	3	4
16.	Students are helped to diagnose the gaps between their goals and their present level of performance.	NA	1	2	3	4
17.	Learning situations stress the student's ability to learn based on memorization.	NA	1	2	3	4
18.	Methods that foster discussion, involvement and class interaction are used.	NA	1	2	3	4
19.	Learning activities are planned to take into account the students' prior experiences.	NA	1	2	3	4
20.	Resources for further learning are identified and/or presented.	NA	1	2	3	4
21.	Students are encouraged to see themselves as the best judge of what they are learning.	NA	1	2	3	4
22.	Students are presented with new concepts on a regular basis.	NA	1	2	3	4
23.	Students are encouraged to decide how well they are learning the material.	NA	1	2	3	4
24.	The instructor presents knowledge and techniques that the students can apply immediately.	NA	1	2	3	4
25.	Activities are planned that encourage independent learning.	NA	1	2	3	4
26.	The same materials are used for all students.	NA	1	2	3	4
27.	A time limit is imposed when asking for recall of information and/or completion of tasks.	NA	1	2	3	4
28.	Learning activities are organized according to real life experiences.	NA	1	2	3	4
29.	Students are encouraged to make input into the various types of programs conducted.	NA	1	2	3	4
30.	Previously learned information is reviewed before new material is presented.	NA	1	2	3	4

Not Applicable	Never	Sometimes	Frequently	Always
NA	1	2	3	4

31.	Cultural backgrounds of students are considered when planning learning activities.	NA	1	2	3	4
32.	Competition among students is encouraged.	NA	1	2	3	4
33.	The instructor speaks rapidly when instructing adults.	NA	1	2	3	4
34.	Students are helped to develop short-range as well as long-range objectives.	NA	1	2	3	4
35.	Courses are arranged to minimize conflicts with other activities in which the target audience may be involved.	NA	1	2	3	4
36.	Extra time is allowed for the eyes of the students to adapt when visual information is presented.	NA	1	2	3	4
37.	Different instructional techniques are used depending on the material to be taught and the student's needs.	NA	1	2	3	4
38.	Questions or comments offered by students are treated with importance and given a sincere response.	NA	1	2	3	4
39.	Adequate lighting is provided in the adult learning environment.	NA	1	2	3	4
40.	The learning environment is adapted to the student's physical needs.	NA	1	2	3	4
41.	A comfortable and supportive environment is provided.	NA	1	2	3	4
42.	No attempt is made to determine what causes people to attend various courses offered.	NA	1	2	3	4
43.	Courses are designed to help people cope with recent or expected changes in their lives.	NA	1	2	3	4
44.	Students are encouraged to share their experiences with others in the group.	NA	1	2	3	4
45.	Informal counseling of students is offered where needed.	NA	1	2	3	4

Please complete the following:

1. Age: under 30 ( ) 31-40 ( ) 40-50 ( ) over 50 ( )
2. Sex: M ( ) F ( )
3. Degrees attained and areas of specialization _____
   _____
4. The Division you teach in: _____
5. Your primary subject area: _____
6. How long have you taught in this position? _____
7. How long have you taught in this field? _____
8. Have you taught in other fields? Yes ( ) No ( ) If yes, What? _____
   _____
9. Have you had experience teaching in settings other than the academic one? Yes ( ) No ( )
10. If Yes, what? community service ( ), church ( ), business and industry ( ), other ( ) _____
11. What academic institutions have you taught in other than the junior college? none ( ) secondary public schools ( ) Adult Basic Ed. ( ) Liberal Arts College ( ) Comprehensive 4-year college ( ) doctoral granting university ( ) research university ( ) other ( ) _____
12. Have you participated in any of the following that helped prepare you for teaching the adult learner? Workshops ( ) Inservice ( ) Conferences ( ) Courses ( ) Formal Degree Program ( ) Other ( ) _____

APPENDIX D

PLACEMENT OF QUESTIONNAIRE STATEMENTS UNDER PRINCIPLES

PRINCIPLES OF ADULT LEARNING

Please categorize each of the following questions into one of the nine principles of Adult Learning listed on the separate page. These principles have been identified from an exhaustive and comprehensive review of the literature. Mark the number of one principle at the left of each of the 45 questions. The questions will be used in different adult learning settings, so assume the instructor/student nomenclature to be appropriate for your particular situation (instructor/patient, facilitator/learner, etc.). Please note that some of the items may be stated in a manner contrary to accept principles of adult learning. The first question has been categorized as an example.

4 1. Students are helped to relate new learning to their prior experiences.

_____ 2. Errors are accepted as a natural part of the learning process.

_____ 3. Programs are presented which are relevant to the current problems and needs of the various clientele served.

_____ 4. Knowledge and competencies that students possess are utilized to achieve educational objectives.

_____ 5. Students are included in making decisions about the material that will be covered.

_____ 6. An attempt is made to utilize the factors that keep students participating in offerings.

_____ 7. Programs are scheduled at locations that provide the greatest accessibility to as many people as possible.

_____ 8. Students are helped to identify problems that they need to solve.

_____ 9. Students are encouraged to choose and use the most suitable means to accomplish their goals.

_____ 10. The instructor uses subdued colors rather than sharp contrasts in visual aids.

_____ 11. Instructional objectives are adapted to match the individual abilities of the student.

_____ 12. The meeting room is arranged so that it is easy for students to interact.

_____ 13. Students and instructors relate to each other as partners in learning.

_____ 14. Students are allowed to work at their own rate regardless of the amount of time it takes them to learn a new concept.

_____ 15. Subject matter is related to problems of everyday living.

_____ 16. Students are helped to diagnose the gaps between their goals and their present level of performance.

_____ 17. Learning situations stress the student's ability to learn based on memorization.

_____ 18. Methods that foster discussion, involvement, and class interaction are used.

_____ 19. Learning activities are planned to take into account the students' prior experiences.

_____ 20. Resources for further learning are identified and/or presented.

_____ 21. Students are encouraged to see themselves as the best judges of what they are learning.

_____ 22. Students are presented with new concepts on a regular basis.

_____ 23. Students are encouraged to decide how well they are learning the material.

_____ 24. The instructor presents knowledge and techniques which the students can apply immediately.

_____ 25. Activities are planned that encourage independent learning.

_____ 26. The same materials are used for all students.

_____ 27. A time limit is imposed when asking for recall of information and/or completion of tasks.

_____ 28. Learning activities are organized according to real life experiences.

_____ 29. Students are encouraged to make input into the various types of programs conducted.

_____ 30. Previously learned information is reviewed before new material is presented.

_____ 31. Cultural backgrounds of students are considered when planning learning activities.

_____ 32. Competition among students is encouraged.

_____ 33. The instructor speaks rapidly when instructing adults.

_____ 34. Students are helped to develop short-range as well as long-range objectives.

_____ 35. Programs are arranged to minimize conflicts wtih other activities in which the target audience may be involved.

_____ 36. Extra time is allowed for the eyes of the students to adapt when visual information is presented.

_____ 37. Different instructional techniques are used depending on the material to be taught and the student's needs.

_____ 38. Questions or comments offered by students are treated with importance and given a sincere response.

_____ 39. Adequate lighting is provided in the adult learning environment.

_____ 40. The learning environment is adapted to the student's physical needs.

_____ 41. A comfortable and supportive environment is provided.

_____ 42. No attempt is made to determine what causes people to attend various programs offered.

_____ 43. The program is designed to help people cope with recent or expected changes in their lives.

_____ 44. Students are encouraged to share their experiences with others in the group.

_____ 45. Informal counseling of students is offered where needed.

COMMENTS:

List of Validators

Dr. Margaret Callsen
Assistant Professor
Oklahoma State University

Dr. Al Campbell
Associate Professor
Adult Education
Texas A&M University

Dr. Neal Chalosky
Assistant Professor
Adult Education
Virginia Polytechnic Institute
and State University

Dr. Dan Gardner
Assistant Professor
Adult Education
Florida Atlantic University

Dr. Mike Hannah
Urban Extension Agent
Oklahoma State University

Dr. Ken McCullough
Associate Professor
Adult Education
University of Tennessee

Dr. Harvey Nye
Director of Extension
Tinker Air Force Base

Dr. John Peters
Professor
Adult Education
University of Tennessee

Dr. Don Seaman
Professor
Adult Education
Texas A&M University

Dr. Doug Smith
Associate Dean
Continuing Education
Drake University

Dr. Wendell Smith
Dean of Continuing Education/Extension
University of Missouri-St. Louis

APPENDIX E

SAMPLE LETTERS REQUESTING PARTICIPATION IN RESEARCH PROJECT

Oklahoma State University

SCHOOL OF OCCUPATIONAL AND ADULT EDUCATION

STILLWATER, OKLAHOMA 74078
CLASSROOM BUILDING 406
(405) 624-6275

Dear Faculty Member:

The number of adults participating in higher education is rapidly increasing. The community junior college has especially observed the influx of the adult learner. In 1978 the median age of all students enrolled in the credit programs of Tulsa Junior College was 27.1 years. The presence of adults is making an impact on the learning environment, but it is not known to what extent. The community junior college needs to consider this impact and plan for the adult learner.

An independent study through Oklahoma State University School of Occupational and Adult Education is being conducted for the first time in relation to this problem. Data obtained from faculty is essential for the study to proceed. Your participation would be greatly appreciated.

The attached questionnaire contains numerous statements about teaching/learning activities for adults. Please take a few minutes to fill out the questionnaire by checking each item according to your particular situation. For each statement indicate how often you practice the action described in the item. Please complete the biographical section at the end. All aspects of the study have been designed to insure that responses will remain confidential.

For your convenience and to maintain confidentiality, please return the questionnaire in the attached envelope to Room 101 by Monday, February 9.

Thank you for your participation.

Sincerely,

Elizabeth Box Price

Elizabeth Box Price

12420 E. 33rd Street
Tulsa, OK 74145
February 21, 1981

Dear Faculty Member:

Last semester I taught at TJC, met many of you, and was impressed by the quality of full-time undergraduate teaching being done here. Through a literature review I discovered that junior college teaching is regarded as among the best in higher education. However, more research data is needed to strengthen this position especially in relation to adult learning principles. Faculty can benefit from such data. Negotiations can be strengthened. The attached questionnaire is one possibility for collecting such data. Your input is needed.

You may have already filled out the questionnaire. If so, please return it to Room 110. If not, please reconsider the value of your response in contributing to this data and take a few minutes to check each item of the questionnaire and complete the biographical section. Room 110 has been offered as a convenient point for me to pick up the questionnaires. An envelope is provided to insure confidentiality.

Thank you.

Sincerely,

Elizabeth Price
Doctoral Candidate, OSU
Ed. Ad. and Higher Education/Teaching
with the School of Occ. and Adult Ed.

Please return by Feburary 24th.

VITA

Elizabeth Box Price

Candidate for the Degree of

Doctor of Education

Thesis: AN ANALYSIS OF ADULT LEARNING PRINCIPLES AND PRACTICES IN AN URBAN JUNIOR COLLEGE

Major Field: Higher Education

Biographical:

Personal Data: Born in Aberdeen, Mississippi, June 27, 1941, the daughter of Isaac Page Box and Grace Jones Box; married John R. Price, September 5, 1965; two children - Joye Michelle Price and Charles Jonathan Price.

Education: Graduated from Aberdeen High School, Aberdeen, Mississippi, in May, 1959; received Bachelor of Arts degree in Religion from Millsaps College in 1963; received Master of Religious Education degree from Perkins School of Theology, Southern Methodist University in 1965; completed requirements for the Doctor of Education degree at Oklahoma State University in May, 1981.

Professional Experience: Certified Director of Christian Education of the United Methodist Church, 1966-1981; Director of Youth Ministry, Parkcrest United Methodist Church, Houston, Texas, 1965-1966; Director of Christian Education, The Methodist Church of Nichols Hills, Oklahoma City, Oklahoma, 1966-1968; Director of Christian Education for Children and Youth, Centenary United Methodist Church, Lawton, Oklahoma, 1974-1977; Adjunct Faculty, Oral Roberts University, Tulsa, Oklahoma, 1978; Research Associate, National Science Foundation, Tulsa, Oklahoma, 1979; Part-time Faculty, Tulsa Junior College, Tulsa, Oklahoma, 1980.

Professional Organizations: Phi Delta Kappa, Religious Education Association, Adult Education Association, Christian Educators Fellowship, United Methodist Association of Professors of Christian Education.