A COMPARISON OF LEARNING OUTCOMES OF SECONDARY AND ADULT STUDENTS INTEGRATED INTO VOCATIONAL PROGRAMS IN OKLAHOMA AREA VOCATIONAL TECHNICAL SCHOOLS

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CHAPTER I

INTRODUCTION

The 1980's have been a period of significant change for vocational education in the state of Oklahoma. The decline of the oil industry along with the depressed economy has brought many challenges to the state. Among those challenges has been the mission of providing vocational training for Oklahoma's secondary students, as well as training and retraining adult students for the state's changing job market. Oklahoma vocational education has met those challenges by creating innovative programs and introducing the latest technology in its existing programs, to fulfill the mission assigned to vocational education.

Secondary students, as referred to in this study, are eleventh and twelfth grade high school students enrolled in vocational education programs in area vocational schools. Adult students, as referred to in this study, are students who have earned at least a high school diploma, or its equivalent, or students eighteen years of age or older who have otherwise exceeded eligibility requirements for secondary education according to the laws of the state of Oklahoma.

It has been practice in Oklahoma area vocational technical schools to enroll both secondary and adult students concurrently in vocational programs. Some states did not practice that educational delivery strategy. One of those states was Wisconsin (Joyce, 1989), another one was New Hampshire (Demers, 1989). However, mixing secondary and adult students into the same program has been based on a pragmatic understanding of economics and demographics in the state of Oklahoma. Some area vocational technical schools had difficulty in filling classes with secondary students and it might not have been possible, in that locale, to serve the adult student by any other means. As adult education has progressed in Oklahoma area vocational technical schools, the integration practice has continued.

Educators are aware of the differences in the way adults learn as compared to the way secondary students learn. Because of those differences, a conflict of adult education principles and vocational education practices may exist. The achievement levels of the adult and secondary students may or may not be appropriately served by mixing the two student groups into the same vocational program. This study needs to be conducted in order to determine if a difference exists in the growth level of learning, the learning outcome, in each of these two categories of students. Specifically, when secondary and adult students are integrated into the same program, are

the learning growth levels of the secondary or adult students different, than those of secondary and adult students when their classes are totally secondary or totally adult?

Once completed, this research could potentially result in better understanding of factors making a difference, or no difference, in student learning outcomes. Delivery strategies of vocational programs could be adjusted to best benefit students served.

Statement of the Problem

In order to strengthen a primary educational consideration, student learning outcomes, and better serve all students enrolled in Oklahoma area vocational schools, it is important to consider the effect of educational program delivery strategies on student learning outcomes. Secondary students and adult students have different learning characteristics (Knowles, 1978) and integrating these students into the same educational program may not be in the best educational interest of either of these two groups. The problem then is to determine if mixing secondary and adult students in the same vocational program affects the learning outcomes of either of the two types of students.

Purpose of the Study

The purpose of this study was to determine if there

were differences between the learning growth levels of secondary and adult students when the two types of students were integrated into the same vocational classroom, compared to the learning growth level of secondary and adult students when their classes were totally secondary or totally adult. This study is necessary in order to provide area vocational school administrators information which will allow them to make better decisions affecting implementation and delivery strategies of vocational education programs in the state of Oklahoma. If an integrated approach affects the growth level of student knowledge, then informed administrators of Oklahoma vocational education can arrange more effectively a quality program of vocational education for individual students as well as increase benefits to the community.

Limitations

The study is limited by the following:

1. The study is limited to those students enrolled in full-time programs in Oklahoma area vocational technical schools in the winter/spring of 1989.
2. The results of this study are specific to Oklahoma area vocational technical schools. Generalization about area vocational technical schools in other states should be made with caution.

3. The researcher was not able to control the lessons assigned to the students during the treatment process.
4. The researcher was not able to control the instructional techniques of the teachers.
5. The analysis of the students' affective areas of performance was limited to the business and office occupational area.
6. Competency examinations were not available for all occupational areas.
7. There were no secondary practical nursing students tested in the study.
8. The researcher was not able to control the testing conditions for the pretests and the posttests.

Assumptions

The study was conducted with the following assumptions:

1. The differences in instructor's teaching style had an essentially random effect over the large sample.
2. All students were exposed to the subject matter of each participating program.
3. All participating programs contain a mix of student learning styles.

CHAPTER II

REVIEW OF LITERATURE

The review of literature in this study was subdivided into five sections:

1. An Overview of Oklahoma Area Vocational Schools.
2. Learning Patterns.
3. Learning Implications in Vocational Education.
4. Learning Outcomes and Measurement.
5. Summary of Review of Literature.

An Overview of Oklahoma Area Vocational Schools

The development of area vocational technical schools in Oklahoma during the past two decades has been a significant event in Oklahoma education. Before the establishment of area vocational schools, vocational education had been the responsibility of comprehensive high schools and community junior colleges. Area vocational schools accepted the responsibility of vocational education for both high school students and adult students, and in doing so developed an identity separate from both comprehensive high schools and the community junior colleges.

Oklahoma area vocational schools have changed significantly since their beginning. They are no longer considered as only a place where secondary students go to learn a trade. Initially vocational schools provided skills training to high school students and those who had finished high school or dropped out of high school (Stewart, 1982). However, during the last two decades, vocational schools developed into state-of-the-art training facilities. The facilities not only provide multiple opportunities for secondary students, adult students, business, and industry, but also provide education programs which contribute to the economic development of the State of Oklahoma (Friedemann, 1989). According to the written philosophy of the Oklahoma State Department of Vocational Technical Education, "Vocational technical education is an integral part of a total education system and is an effective vehicle for developing individual occupational and related skills" (Strategic Plan for Vocational and Technical Education in Oklahoma, 1987, p.3). Additionally, vocational education is considered to be a "critical component of an individual's life and....all vocational programs should be relevant to individual and societal needs and should be provided at the state and local levels by highly qualified staff in effective educational settings" (Ibid, p.3).

According to Stewart (1982), Oklahoma vocational education has been a model vocational system for all the

nation. Its record for innovation makes Oklahoma a place which federal authorities and vocational educators from other states enjoy visiting (Stewart, 1982). The success of vocational education in the state has been the result of strong leadership from the only three state directors that Oklahoma vocational education has ever had, J. B. Perky, Dr. Francis Tuttle, and the current director, Dr. Roy Peters (Stewart, 1982; Peters, 1987). Dr. Francis Tuttle was cited by Peters (1987) as attributing the success of vocational education in Oklahoma, during Dr. Tuttle's term as state director, to the "continuity of leadership" (p. 58) that occurred between the director of Oklahoma vocational education and the state superintendent of public instruction, Dr. Leslie Fisher. It was during the time of Dr. Tuttle's tenure as state director of vocational education (July 1967 - December 1985) that 24 area vocational schools were created (Peters, 1987). Tuttle, as cited by Peters (1987), pointed out that during his term as state director,

> we increased the number of vocational programs in the comprehensive schools, initiated quick-start training, and implemented the first short-term adult education division, the first productivity division, and the first human resources development division in the nation. This tremendous growth and innovativeness would not have been possible if we would have had to stop and orient a new superintendent of public instruction every four years (p. 59).
>
> Since we had worked together for so many years and interacted on a regular basis, Dr. Fisher and I understood each other's special interests (p. 59).

Dr. Tuttle also indicated that "longevity in the position of state director" (Peters, 1987, p. 59) was a key ingredient in the successful leadership of vocational education in the state of Oklahoma. J. B. Perky was the state director for 26 years while Dr. Francis Tuttle was the state director for 18 years (Stewart, 1982; Peters, 1987).

Peters (1987) indicated the long tenure of the state directors in Oklahoma, along with a "clear vocational philosophy... and a clear mission statement" (p. 78), were key factors in the success of vocational schools in Oklahoma. According to that vocational philosophy, as stated in the Strategic Plan for Vocational and Technical Education in Oklahoma (1987),

> vocational and technical education, a major contributor to the economic growth and well-being of the state, is vital to the personal and career development of Oklahomans. Vocational and career development is a critical component of an individual's life. Therefore, all vocational and technical education programs should be relevant to individual and societal needs (p. 3).

Friedemann (1989), Assistant State Director of Area Vocational Schools for Oklahoma, is an advocate of that philosophy and assesses "market sensitivity as the prime attribute of the success of Oklahoma area vocational schools" (n.p.). Because area vocational schools are "controlled by local boards of education within their district, the schools meet the local community needs with flexibility" (n.p.). Friedemann points out that area

vocational schools aggressively "appeal to their markets" (n.p.) and meet the needs of the local mix of students.

Whether the area vocational schools are serving secondary students, adult students or business and industry clients, they strive to maintain excellence (Friedemann, 1989). It is within their stated philosophy to provide programs which are "consistent with advancing technologies and relevant to the needs of individuals and society" (Strategic Plan for Vocational and Technical Education in Oklahoma, 1987, p. 3). Additionally, the Oklahoma area vocational schools have the clear mission to

> provide a delivery system of relevant instructional and support services for individuals, businesses, and industry to develop the knowledge, skills and attitudes for successful employment which will contribute to the economic well-being of the state of Oklahoma (p. 10).

Learning Patterns

Zahn (1967) discussed differences between adults and youth that affected learning. The differences revolved around physical development, experience differences, and reaction changes as the result of age. Zahn pointed out that speed of performance and reaction speed declined with age. However, Zahn noted that among older people, those who were faster in doing manipulative tasks were also the most accurate in accomplishing those tasks.

Zahn (1967) also acknowledged that when learning was measured without strict time limits, an individual's

learning ability did not decline between the ages of twenty and sixty. That is, the speed of learning declined, but the ability to learn did not. Subject areas that showed a decline in performance speed as the result of age included arithmetic, perception, and dexterity. However, older adults performed better in vocabulary and other information areas which allowed for accumulated experience. Hulsey (1977) determined that adult learners responded more positively to questions concerning the usefulness of a class. Hulsey found that adults were also more concerned about the type and condition of equipment used in a class. Hulsey additionally pointed out that adults were more aware of the teacher's knowledge of subject matter as well as of that teacher's ability to present that subject matter effectively.

According to Zahn (1967), there are three primary physical changes which inhibit learning. Those are eidetic imagery, reaction speed, and acuteness of hearing. Eidetic imagery is the ability to visualize in the mind's eye what one has seen on a page. It declined steadily after one's teen years. After the early twenties, sight was found to decline slowly until the middle forties, when bifocal vision appeared. Reaction speed is a decline in the speed of sight. The speed of sight is the time needed to focus on an object especially when shifting from an object far away to an object close at hand. The speed of sight loss was equivalent to the loss of keenness of

sight. Acuteness of hearing was also found to decline, beginning with the late teen years.

Zahn (1967) suggested that methods of teaching children could not be used, without change, to teach adults and recommended changes to accomodate adults. Because adults no longer had the speed of learning, the keenness of sight, or the acuteness of hearing, the teacher should speak more distinctly, use visuals more, and allow more time for the completion of assignments. Because adults performed better than children if the learning was based on accumulated experience, teachers of adults should use those experiences as a teaching resource.

Larson (1970) suggested that adults who returned to school were motivated by two factors--economics and the drive to self-actualization. Among the adults with less than twelve years of education, the need for a better job was the dominant motivation. For the adult learner with twelve years or more of formal education, the motivation for returning to school was the desire to develop themselves, and to better understand other people and society. Regardless of the motivation, Larson reported that adults learned much more quickly and effectively in a non-competitive atmosphere which allowed cooperation with other class members, and encouraged the use of the learner's experiences in solving a common problem.

According to Larson (1970), a major concern for adult

educators was the reduction of anxiety in the adult student. Adults brought a good deal of insecurity to the learning environment. Any competitive situation added to the insecurity of the learner and hindered the learning process. Teachers who added competitive stress to the learning situation defeated the academic purpose.

Larson (1970) suggested nine factors of interest concerning adult learning patterns. These nine factors are summarized as: (a) Intelligence continued almost unchanged until about age sixty-five; (b) There were several intelligence, aptitude, and achievement tests which could be used in the advisement and placement of adult learners; (c) Adults slowed down in reaction time as they matured; (d) Chronic physical diseases slowed down the learning process; (e) Adults had problems unlearning some things, but were capable of doing so; (f) Adults learned faster than children, if the new material was based on past experiences; (g) Adults functioned better in a cooperative, non-competitive situation; (h) Adults were often insecure and anxious about their ability to succeed in a new learning situation; and (i) Learning was maximized when anxiety was reduced.

Parsons and Johnson (1978) provided an organizational framework for the research on learning patterns. The first type of research was the documentation of practical experiences by the adult educator who had a philosophical orientation. Among those placed in that category of

educators were Malcolm Knowles and J. Roby Kidd.

Knowles (1970, 1978, 1984) has been a primary figure among adult educators. Knowles distinguished the discipline of adult education from other types of education through the development of the term andragogy, "the art and science of teaching adults" (Knowles, 1970, p. 37). Andragogy assumed that as a person matured, his learning characteristics changed. Among the changes were: (a) The movement from a dependent personality toward one of self-dependence, (b) the accumulation of experiences which become a resource for learning, (c) a strengthening relation between learning and the developmental tasks related to age, and (d) the increased desire for immediate application of knowledge. Knowles (1970) stated that the acceptance of the assumptions of learning characteristics unique to adults required technological changes in the learning climate, the planning process, the evaluation of learning, the emphasis on experiential techniques, the curriculum organization, the timing of learning and the grouping of learners.

According to Knowles (1970), the "most critical difference between children and adult learners" was the assumption concerning self-concept (p. 44). As a result, Knowles placed great emphasis on removing symbols of childishness in the learning environment. These symbols included podiums, chairs placed in rows, chalkboards, and in many instances, the school buildings themselves.

Additionally, Knowles felt that instructor behavior, getting to know each student individually combined with active listening, was critical in establishing a positive learning climate.

Knowles (1970) felt that involving the adult learner in the planning and the evaluation processes provided acceptance of the learner as a self-directed personality. In andragogy, the planning of activities and experiences is considered to be a mutual responsibility of the teacher and the learner. A person is committed to a decision or activity, to the extent that he participated in planning it. In the evaluation process, the use of grades and the evaluation of one adult by another was viewed by Knowles to be another example of childlike dependency. In an andragogical system, evaluation was a system of self-evaluation, with the instructor aiding the student in determining his progress.

Kidd (1973) was listed in Parsons and Johnson's (1978) framework for research on learning patterns as an empirical adult education researcher. While Kidd quoted Knowles extensively, great effort was made to validate and evaluate the philosophical foundations of adult education. Among the concerns of Kidd were: the process of aging, motivation of adults, cognitive learning and thinking, the effects of maturity upon the self-concept, psychological theories of learning, environmental factors in learning, and the role of the teacher in the learning climate. Some

of the conclusions Kidd (1973) made were that individual housing as well as economic and social position did affect the educational performance of the adult; that differences existed between the adult learner and the child; and the learner, regardless of age, was capable of a large amount of self-directed learning, and as such, could be assisted to become an increasingly effective self-directed learner.

The main distinction made by Kidd (1973) between the adult learner and the secondary learner, involved the experiences of the adult learner. "The adult has had more experiences and they have had different kinds of experiences. Adult experiences were organized differently" (Kidd, 1973, p. 46). In the adult years, the range of experiences was greater between adults than the range was between children. Additionally, adults generally had interactions with individuals of all ages, while the interactions of children were generally limited to family members. As a result of the frequency and variety of experiences, adults develop a greater ability to understand ideas and to perceive how those facts affect their lives. Later research (Kendall and Sproles, 1986) indicated that because adolescents had not arrived at the more adult centered stages of learning, their learning style characteristics might not only differ from those of adults, but differ from those of other adolescents as well.

Learning Implications in Vocational Education

Delivering Vocational Instruction to Adult Learners (1976) was a study conducted by the Illinois State Department of Education, and Southern Illinois University. The results of the study were directed toward new adult vocational educators with the purpose of describing how adults learn, suggesting effective instructional techniques and arranging content for better adult learning.

The study pointed out several observations regarding adult learning. Adults generally possessed the ability, willingness, and maturity to sacrifice and make commitments for the future. Most adults possessed experiences which could be useful in the learning situation. Adults were task oriented and learned better through participation. Most adults needed successful experiences when learning. Additionally, most adults had the basic freedom to select what they wanted to learn, and generally chose areas of learning which they viewed to best benefit them. Finally, most adults learned in a step-by-step fashion in which progress was made slowly. Content arrangement, for better adult learning, should progress from simple to complex, general to specific, concrete to the abstract, and chronologically. Arranging course content from simple to the complex encouraged the use of less complex information as a means of learning

through association, then progressing to more complex or difficult concepts. That arrangement provided the student essential initial success in learning and also allowed the teacher to teach prerequisite knowledge. The general to specific arrangement allowed the student to obtain a broad understanding of the subject matter. That method was positively related to learning because it made it easier for learners to retain specific information. The concrete to abstract arrangement was advocated because it provided a reliable reference point to which the learner could relate more complex and abstract material. It also required learners to observe and manipulate the materials used in teaching. Chronology was used to illustrate a successive relationship of one event to another. It was a method which learners readily understood and could also be used to demonstrate a cause and effect relation (Delivering Vocational Instruction to Adult Learners, 1976).

Hulsey (1977) studied the purposes and the effectiveness of part-time adult education programs in Oklahoma area vocational schools. Hulsey's results for vocational education students in Oklahoma paralleled the results in Larson's study (1970) of the reasons adults return to school. In the Hulsey study, the reasons most commonly cited for taking classes were learning a skill for personal use (30%), personal enjoyment (28%), preparation for a new job (21%), and advancement in the

respondent's present job (8%). Using inferential statistics, Hulsey determined that age and acquiring skills to get a new job were related, with over 50% of the respondents under age thirty responding positively. Students who were young, unmarried, unemployed, and female appeared to derive greater benefit from the classes than other students.

Patterson (1978) developed a competency-based vocational program for adult students in Alabama. Patterson indicated that one of the advantages of performance-based instruction was that it placed a large share of the responsibility for learning with the learner. Additionally, assessment was criterion-referenced, rather than norm-referenced, meaning that there was no apparent interpersonal competition in the program. With criterion-referenced assessment, the learner was told in advance what performance was required for completion of the program. Additionally, performance-based instruction allowed for more individualization and personalization of instruction. Individualized instruction allowed self-pacing, choosing among alternative and optional activities, and allowed tailor-made learning experiences which could meet the learner's interests and needs.

Patterson's (1978) findings agreed with those of Kidd (1973) in relation to the motivation of adults, the self-concept, environmental factors in learning and the role of the teacher in the learning climate, the

difference being that Patterson's findings are in a vocational environment. According to Patterson (1978), performance-based instruction implied several things about learning patterns of adult students. The implications were: (a) Learning should be problem-centered; (b) Learning should be experiencecentered; (c) The learning experiences must be meaningful to the student; (d) The student must be free to examine the experiences; (e) The student should participate in helping set goals; and (f) The student must have feedback about progress toward his educational goals.

Kendall and Sproles (1986) conducted a study to determine "what factors actually characterize the primary learning styles of secondary vocational students" (p. 1). As cited by Kendall and Sproles, Dunn (1984) defined a learning style as "the way each person absorbs and retains information and/or skills" (p. 2).

Kendall and Sproles (1986) identified six types of learning styles:

> the serious, analytical learner; the practical learner; the observation-centered learner; the passive, accepting learner; the concrete, detail, fact-oriented learner; the nonadaptive, struggling learner (p. 9).

The study recommended grouping students with "similar learning styles, matching teaching styles to learning styles and further developing learning theory" (p. 13). That grouping process would allow teachers to enhance students' learning capability by matching teaching tools

with students' learning preferences or limitations. Kendall and Sproles indicated that "learning is a lifelong process that changes dramatically from childhood to adulthood" (p. 12), that "experiential learning theory is implicitly adult centered" (p. 13) and that "secondary learning style characteristics differ not only from adult, but from other adolescents, as well" (p. 13).

Those cited studies indicated that student physical development, student experience level, student learning styles, teacher effectiveness, as well as learning objectives and delivery systems, all have implications that affect student learning outcomes.

Learning Outcomes and Measurement

Sparks (1986) conducted research on the effectiveness of teacher training in changing teaching practices. The problem addressed in the research was:

> what relationships exist between types of in-service training activities and changes in teaching behavior....additionally, what teaching practices positively influence student learning (p. 217).

That problem is relative to student learning outcomes because, if "change in teaching practices is critical to the improvement of teaching" (p. 218), then some implications exist for improving student learning performance with that improvement in teaching practices.

If teachers are to enhance student learning outcomes by matching teaching tools with students' learning

abilities as Kendall and Sproles (1986) suggest, then the administrative responsibility of in-service teacher training should be addressed. As cited by Sparks (1986), Gage (1985) found that "teachers' management practices, instructional techniques, and expectancies are associated with (and cause) significant gains in pupil learning" (p. 217). Sparks found that "stability of teaching behavior" (p. 220) affected the reliability and validity in measures of teaching practices. Additionally, peer observation training activities during in-service programs appeared to be more powerful training activities than those which merely provided instruction or coaching. "Just watching a colleague teach....may have helped them analyze their own behavior...and enabled them to make more significant changes in their own teaching" (p. 223). Such observation allowed teachers to identify and adapt teaching practices that positively influence and affect student learning outcomes.

Guskey (1984) conducted a study questioning "what happens to teachers when they adopt more effective instructional practices and as a result are able to have more of their students learn very well" (p. 246). If there is a positive effect, characteristics of those teachers might exist which teachers and administrators could identify and relate to increased student learning outcomes.

In organizational climate relationships, it has been

established that the interaction of individuals within the organization impacts behavior in that organization. Guskey (1984) cited studies by Soar and Soar (1972), McNeil and Pomham (1973), and Medley (1977) which support that. Additional studies by Crandall, Kotkovsky, and Crandall (1965), DeCharms (1976), and Bar-Tal (1978) indicated that "when successful outcomes are judged to be the result of one's effort, the typical effective responses include an increase in personal responsibility for the result" (Guskey, 1984, p. 246). Teachers who adopt effective classroom techniques and practices and experience more positive student learning outcomes attribute that positive change to their own personal efforts. Guskey (1984) verified in his study that teachers who had experienced a positive change in the learning outcomes of their students "felt more responsible for both positive and negative student outcomes and expressed more positive attitudes toward teaching" (p. 252). That reinforces climate relationship theory between the teacher and student, indicating that positive or negative teacher student interaction produces behavior that results in positive or negative student learning outcomes.

Duhamel, Cyze, Lamacraft and Larocque (1979) questioned which of three "methods of evaluating teachers best indicate teacher improvement" (p.26). Those three methods were: the process approach, which provided

"emphasis on behavioral norms such as organization and presentation as determinants of effective teaching" (p.27); the presage approach, which "emphasizes teacher qualifications, personal qualities and physical appearance" (p. 28) as determinants of effective teaching; and the product approach, which "emphasizes learning outcomes of students as the key determinant of teacher effectiveness" (p. 29). That study directly related the teacher evaluation process to student learning outcomes.

Duhamel, Cyze, Lamacraft and Larocque (1979) emphasized that the product approach (student learning outcomes) in teacher evaluation should be the "key determinant of teacher effectiveness" (p. 29). Keeping in mind that student growth should be the primary objective of education, administrative implications of evaluating teacher effectiveness, in those terms, would "allow a teacher to be measured by the movement of a student along the development continuum" (p. 29).

Belcher (1987) questioned,

> are colleges and universities emphasizing 'value added' intellectual development in their students? The value-added approach...focuses on changes in students between the beginning and the end of their college careers (p. 31).

Those changes are the students' learning outcomes as a result of purposeful learning objectives and students' growth relative to the entry point of the student and his or her graduation from the college or university.

Belcher (1987) questioned college and university

curriculum in much the same way that Duhamel et al (1979) questioned teacher evaluation. Belcher determined that student learning outcomes were the best measurement of the success of curriculum used in postsecondary institutions for building competencies in graduates of the institution. "Value-added assessment emphasizes growth....competency based curriculum would have to be taught, and competency based evaluation would have to be conducted" (p. 32). Belcher cited Astin and Ewell (1985) as indicating that colleges and universities are in the business of developing student learning outcomes. Belcher emphasized that "a value-added perspective asks faculty to state objectives for the curriculum and to think in developmental terms" (p. 33). The conclusions of Duhamel et al agreed with Belcher's, that student learning outcomes are the actual evidence that the desired student growth has been achieved.

Day and Baskett (1982) re-examined some basic beliefs regarding the delivery systems of continuing education to adults and questioned, "are they congruent with the actual behavior or needs of professionals in that field?" (p. 143) Additionally, Day and Baskett questioned "the notion that there is a theory of adult education (andragogy) which is distinct from a theory of child education (pedagogy)" (p. 143) which affect delivery systems of adult education and therefore adult learning outcomes.

Day and Baskett (1982) contended that there was a "mis-match between patterns of professional learning and the product of the process" (p. 145) within the current theory of adult and professional education. Their research relates to the theories of andragogy and pedagogy of Knowles (1978). Day and Baskett contended that Knowles' theories were "process oriented models of education" (p. 149) and cited Knowles as providing "procedures and resources for helping learners acquire information" (p. 149) and indicated that "andragogy is...inquiry-based learning" (p. 150). Day and Baskett indicated that McKenzie (1979) and Lawson (1979) showed confusion in what research appears to report concerning product oriented learning, which emphasizes student learning outcomes, and the theories of Knowles. Day and Baskett indicated that practitioners of andragogy have "become involved in a closed subsystem of thought about how professionals learn...which is inconsistent with the on-the-job behaviors of professionals" (p. 146). Day and Baskett cited Argyris and Schon (1974) concerning professional practices, "this inconsistency is...part of the restricted professionality...where espoused theory is never tested against theory-in-use (actual behavior)" (p. 146). Andragogy, according to Day and Baskett, "is not always the most effective means of educating" (p. 150) and that the "distinction between andragogy and pedagogy is based on an inaccurately conceived notion of pedagogy" (p.

150). That is, there are fundamental educational values or concepts that may be common to both children and adults, and these concepts are that each individual has his own learning style, pace and attributes, and andragogy does not always applicably address these for maximum learning outcomes.

Summary of Review of Literature

Research indicated that student learning outcomes were products of student physical development, student experience levels, student learning styles, teacher effectiveness, delivery systems and curriculum. Learning outcomes, however, were also able to be utilized by administrators to evaluate teacher effectiveness, delivery systems and curriculum, as well as to provide information characteristic to student learning styles.

There was some agreement as well as confusion among scholars concerning characteristics affecting student learning outcomes. Hulsey (1977) agreed with Larson (1970) concerning the reasons adults return to school. Patterson (1978) indicated that performance based instruction for adults placed a large share of learning responsibility with the learner. That agreed with Kidd's (1973) conclusion that learners, regardless of age, were capable of large amounts of self-directed learning. Kidd (1973) also referred to the importance of the role of the teacher in the learning climate. Hulsey (1977) also

indicated the importance of the role of the teacher in an effective vocational learning setting. Belcher (1987), agreed with Duhamel et al (1979) that student learning outcomes establish learning objectives and goals, develop appropriate learning programs, and provide evidence of student growth. Guskey (1984) and Sparks (1986) both concluded that in-service training alone may be insufficient for effective change in teachers. Guskey (1984) emphasized student learning outcomes as a factor and Sparks (1986) emphasized peer observation to increase effectiveness of teachers. Both emphasized student learning outcomes as the key result of each of their respective studies.

Knowles (1970) believed that learning characteristics change as a person matures, and that the planning of activities and experiences is considered to be a mutual responsibility of the teacher and the learner. The Illinois State Department of Education (Delivering Vocational Instruction to Adult Learners, 1976) indicated that adults learn best in a step-by-step fashion in which learning progresses from simple to complex. Day and Baskett (1982) argued that there were fundamental educational concepts that may be common to both children and adults. Kendall and Sproles (1986) indicated that "secondary learning style characteristics differ not only from adult, but from other adolescents, as well" (p. 13).

There were no studies of vocational education found

which examined the learning outcomes of adults or secondary students integrated into the same vocational education classroom. Therefore, the question still exists concerning the learning outcomes of adult and secondary students who are mixed into the same classroom. In order to move toward maximum effectiveness in serving the needs of both of those groups of students, the literature has, at least, given insight to the characteristics of the adult learner as well as those of the secondary learner. Additionally, it has provided a background of beliefs concerning learning styles, teacher effectiveness and delivery systems which reflects the growth and development in adult education during the 1960's, 1970's and 1980's.

CHAPTER III

METHODOLOGY

The primary purpose of this study was to determine if there were differences between the learning growth levels of secondary and adult students enrolled in area vocational schools, when the two types of students were integrated into the same vocational classroom, compared to the learning growth level of secondary and adult students when their classes were totally secondary or totally adult.

A preexperimental design, pretest, posttest, was used to test the null hypothesis, H_0: there is no significant difference between the learning growth levels of secondary and adult students integrated into the same vocational education classroom and the learning growth levels of secondary and adult students enrolled in totally secondary and totally adult vocational education classrooms.

This chapter is devoted to reporting the methods used to accomplish the purpose of the study. The five sections are:

1. Selection of the Subjects.
2. Development of the Instrument.
3. Collection of the Data.

4. Research Design.

5. Analysis of the Data.

Selection of the Subjects

The population for this study was all secondary students, full-time adult students, and part-time adult students who were enrolled in Oklahoma area vocational technical schools during the winter/spring semester of 1989. The total number of enrollees was approximately 14,555 secondary students and 11,786 adult students. The combined enrollment was approximately 26,341 students. The student population information was provided by the information services section of the Oklahoma State Department of Vocational Technical Education, Stillwater, Oklahoma. The sample was a purposeful, cluster type sample and the sample size was 645 students. The sample was based upon obtaining large enough numbers, with the right mix in various classes, to achieve randomness of the sample. Programs having a mix of secondary and adult students, as well as pure secondary and pure adult, were identified by the Oklahoma State Department of Vo-Tech Education. The teachers in each program were contacted and asked to participate in the study. The programs were categorized according to "occupational" areas and those selected were seven computer/information processing programs, eleven business and office programs, four printing programs, five allied health programs, and four

practical nursing programs. Those 31 programs were selected based on the student mix, or nonmix, and stratified according to the location of the area vocational schools. This stratification was made in order to assure representation from each geographical area of the state and provide a representative sample of students from various socio-economic backgrounds, as well as students with diversified needs. Fifteen different area school districts participated in the study from 24 different campus locations throughout the state. The regions of Oklahoma represented by these area vocational schools included the northwest, northeast, southeast, southwest, north central and south central regions of the state. All students in the sampled class units in each of the programs were given a pretest. After administering the treatment (instruction), the same students were given a posttest.

Development of the Instrument

The learning growth instruments used were competency based examinations developed by the Oklahoma State Department of Vocational Technical Education. These tests were approved for competency examination by the Oklahoma State Department of Vocational Technical Education and were tested for content validity by the state department's testing and evaluation section. The instruments administered were program specific to the applicable

vocational discipline and the same test was administered to the student in the posttest that was administered in the pretest. All examinations consisted of 100 questions except those in the allied health areas. One allied health exam had 109 items, one had 106 items, two had 85 items and one consisted of 82 items. The last 15% of the business and office instruments consisted of scenario sets which measured the affective area of student performance. The remaining 85% of the business and office instruments and 100% of all other instruments measured the cognitive area. The learning growth scores were determined by a pretest, posttest of each student involved in the study. The pretest was administered during the second week of classes in January, 1989. The posttest was administered the third week of April, 1989.

Collection of the Data

Data were collected during the winter/spring semester of 1989. During October, 1988, the information services section of the Oklahoma State Department of Vocational Education was requested to provide a sort from the student records data base. This sort was requested to indicate what occupational programs in which area vocational schools throughout the state were totally of secondary enrollment, totally of adult enrollment, or contained mixed secondary and adult enrollment. Selection of the subjects was made from those area vocational schools. In

November, 1988, administrators of each of these area vocational technical schools were contacted to obtain permission for the programs in their area school to participate in the study. A request for the competency based examinations was made from the testing and evaluation section of the state department of vo-tech.

After receiving administrative approval for program participation in the study, the instructors of each identified program were contacted to arrange for the pretest and the posttest. During the last week of December, 1988, the examinations were categorized, duplicated and mailed with administering instructions to each occupational program selected for the study. The pretest was administered during the second week of classes in January, 1989. The posttest, which was an identical copy of the pretest, was administered during the third week of April, 1989.

Research Design

The following diagram outlines the design of the study.

Group 1	R	O-1	X-a	O-2 (A-only)
Group 2	R	O-1	X-as	O-2 (A/S Mixed)
Group 3	R	O-1	X-s	O-2 (S-only)

R = random sample; O-1 = Pretest; O-2 = Posttest;

X-a = treatment for adults only
X-as = treatment for adults and secondary mix
X-s = treatment for secondary only

Analysis of the Data

Data were coded and recorded by the researcher on a computer data base in the form of an ASCII file. The data were then analyzed utilizing SPSS-X release 3.0 statistical software on the IBM 3081K in the Computer Center at Oklahoma State University.

The mean gain scores of each group of students were compared utilizing a t-test. Group one (adult) gain scores were compared against the gain scores of group two (mixed) and of group three (secondary). Group three (secondary) gain scores were compared to those of group two (mixed). Group one (adult) gain scores were also compared to the gain scores of the adults within group two (mixed), and the gain scores of group three (secondary) were compared to the gain scores of the secondary students within group two (mixed). The difference in the scores was used to represent the learning growth level of each group and to indicate learning outcome. Those data group pretest, posttest scores were additionally analyzed using the analysis of covariance in order to statistically control any initial differences in the student groups. The results of the analysis of covariance were used to verify the results of the t-test analysis. The groups were analyzed in terms of sex, student status, and age. The statistical procedures applied to the data were the t-test and the analysis of covariance. An alpha level of .05 was selected to determine statistical significance.

CHAPTER IV

FINDINGS

Introduction

The purpose of this study was to determine if there were differences between the learning growth levels of secondary and adult students when the two types of students were integrated into the same vocational classroom, compared to the learning growth level of secondary and adult students when their classes were totally secondary or totally adult students. The null hypothesis tested was, H_0: there is no difference between the learning growth levels of secondary and adult students integrated into the same vocational education classroom and the learning growth levels of secondary and adult students enrolled in totally secondary and totally adult vocational education classrooms.

The initial sample for this study was 645 students enrolled in 15 Oklahoma area vocational school districts from 24 campus locations across the state. Those students were both adult and secondary and were enrolled in vocational classes for microcomputer studies, business and office skills, vocational printing instruction, allied health education, and practical nurse training. However,

because of student absences, student dropouts, miscoding of returned instruments, or non-returns from entire programs, the usable responses in the sample totalled 500 students. Group one (adults only) consisted of 135 students. Group two (mixed) consisted of 228 students, 135 secondary and 93 adults. Group three (secondary only) consisted of 137 students. The usable responses came from 14 Oklahoma area vocational school districts and 22 campus locations. The occupational areas were represented by five microcomputer programs, eleven business and office programs, three printing programs, five allied health programs, and four practical nursing programs.

Presentation of Data

To organize and analyze the data, location descriptors were removed. The data were listed according to assigned identifiers with corresponding pretest, posttest score, and gain score (pretest score minus the posttest score). Gain scores, both cognitive and affective, were converted to percentages, students' identifiers were removed and organized according to groups of pure adult, mixed secondary and adult, and pure secondary. Sex was identified as male or female. Students' status was secondary morning, secondary afternoon, adult full-time, or adult part-time. Age was defined as 18 and below, and 19 and above. Each group comparison was examined by means of a t-test. An analysis

of covariance was made of the raw pretest and posttest scores using the pretest as the covariant. The analysis of covariance was used to determine if any statistical significance existed between the groups and sex, groups and student status, and groups and age. Additionally, the analysis of covariance controlled any initial differences in the pretest scores of the student groups as well as any possible regression to the group mean created by use of the gain scores and percentage gain scores for data analysis. All data analysis was performed on the IBM System 3081K computer utilizing SPSS-X version 3.0 statistical software.

Analysis of Data

As previously mentioned, gain scores were grouped according to adult, secondary, adult-mixed, and secondary-mixed. The mean of each of those groups was determined and analyzed by the t-test. A comparison of the means of the cognitive gain scores, classified by groups, can be found in Table I. The alpha level of .05 was selected to determine statistical significance. The corresponding t-value and probability levels of significance are also shown. The probability levels are precise and are not table values. If a calculated probability is equal to or less than the .05 alpha level, the difference in the means is determined to be statistically significant. If the calculated probability

is greater than the .05 alpha level, the means are not significantly different. In Table I, the cognitive gain scores of the adult group compared to those

TABLE I

T-TEST BETWEEN GROUPS, SEPARATE VARIANCE ESTIMATE, COGNITIVE PERCENT GAIN SCORES

Groups Compared	T-Value	Probability
Adult / Secondary	3.14	.00 *
Adult / Mixed	4.25	.00 *
Adult / Adult-Mixed	1.94	.05 *
Secondary / Mixed	-1.09	.27
Secondary / Secondary-Mixed	2.18	.03 *

Alpha = .05
* = Statistical Significance Exists

of the secondary group were statistically significant beyond the .05 level. The cognitive gain scores of the adult group compared to those of the entire mixed group were also statistically significant beyond the .05 level. The cognitive gain scores of the adult group compared to the adult-mixed group were statistically significant at the .05 level. The cognitive gain scores of the secondary group compared to the secondary-mixed group were statistically significant within the .05 level of

confidence. There was no statistical significance between the cognitive mean gain score of the secondary group and those of the entire mixed group of students.

Table II depicts the cognitive mean gain scores expressed as a percentage of the total possible points by

TABLE II

COGNITIVE MEAN GAIN SCORES, EXPRESSED AS A PERCENTAGE OF TOTAL POINTS POSSIBLE, BY GROUP

Group	N	Mean
Adult Only	135	12.32
Entire Mixed	228	5.88
Secondary Only	137	7.39
Adult-Mixed	93	8.78
Secondary-Mixed	135	3.88
Total Population	500	7.99

the respective groups. From the probability levels in Table I, one can look at Table II to determine where the significance exists. The total adult group scored 4.93 mean percent gain points higher than the total secondary group. The total adult group also scored 6.44 mean percent gain points higher than the entire mixed group. Additionally, the total adult group scored 3.54 mean

percent gain points higher than the adults in the mixed group of students. The difference in the mean gain scores between the total secondary student group and the entire mixed group was 1.51 percent points which was not statistically significant. However, the difference in the gain scores of the total secondary group compared to the scores of the secondary students in the mixed group was 3.51 percent points which was statistically significant.

Analysis by Sex

Data collected to describe the population included the sex, male or female, of the student. To further evaluate the pretests and posttests scores of the groups, an analysis of covariance was calculated (using the pretest as the covariant) to analyze the scores between the sex of the student and the scores of the groups. Table III shows the results of that analysis of covariance. Each group was analyzed to determine if the results between the pretests and the posttests varied between the grouping of students and the sex of the students in the group. The F value and the significance of F between the groups is listed in Table III. The significance levels are precise and are not table values. The alpha level of .05 was selected to determine statistical significance. If the calculated significance of F is equal to or less than the .05 alpha level, then statistical significance exists. If the significance of F

TABLE III

ANALYSIS OF COVARIANCE,
PRETEST/POSTTEST
SCORES, BY GROUP
AND SEX

Groups Compared	F Value	Significance of F
Adult/Secondary	17.65	.00 *
Adult/Mixed	22.36	.00 *
Adult/Adult-Mixed	7.16	.00 *
Secondary/Mixed	.10	.90
Secondary/Secondary-Mixed	2.18	.12

Alpha = .05
* = Statistical Significance Exists

is greater than the .05 alpha level, then no statistical significance exists.

As shown in Table III, the resulting pretest, posttest scores of the total adult group of students compared to those of the total secondary group of students, when categorized by sex, were statistically significant beyond the .05 level. This indicated a greater statistical difference in pretest, posttest scores because of the grouping of the students than between the scores because the students were male or female. Stated differently, there was more significant difference in pretest, posttest scores due to student grouping than significant difference in pretest, posttest scores because

the students were male or female. The comparison of the cognitive pretest, posttest scores of the adult group and the cognitive pretest, posttest scores of the mixed group when classified according to the sex of the group indicated statistical significance beyond the .05 level. This indicated a greater statistical difference in pretest, posttest scores due to the grouping of adult students and the grouping of the mixed students than the difference in the pretest, posttest scores because the students were male or female. Additionally, the cognitive pretest, posttest scores of the adult group and the cognitive pretest, posttest scores of the adults within the adult-mixed group when compared according to the sex of the group was statistically significant beyond the .05 level. This again indicated a greater statistical difference in pretest, posttest scores because of the grouping of adult students and the adults in the mixed group of students than between the pretest, posttest score differences because the students were male or female. The difference between the cognitive pretest, posttest scores of the secondary group and the cognitive pretest, posttest scores of the entire mixed group of students when compared by sex was not statistically significant. When analyzed by sex, the cognitive pretest, posttest scores of the total secondary group of students compared to the cognitive pretest, posttest scores of the secondary students in the mixed group of students were not

statistically significant. That is, there is no reason to indicate that the group classification, or the sex of the students, affected the gain scores of either of those groups of students. Table IV indicates the mean gain scores of each group, by sex, and verifies the significance levels indicated by the covariance analysis shown in Table III.

TABLE IV

COGNITIVE MEAN GAIN SCORES, EXPRESSED AS A PERCENTAGE OF TOTAL POINTS POSSIBLE, BY SEX OF STUDENTS

Group	Male	Female
Adult Only	19.28	11.58
Entire Mixed	6.12	5.85
Secondary Only	7.04	7.48
Adult-Mixed	11.90	8.36
Secondary-Mixed	2.14	4.12

Comparing the significance of F (Table III) with the mean percent gain scores in Table IV, by inspection it can be seen that the mean gain scores for both males and females in the adult only group were statistically greater than the mean gain scores for the males and females of the secondary only group. The mean gain scores for the males

and females in the adult only group were also statistically greater than the mean gain scores of the males and females of the entire mixed group. The mean gain scores for the males and females of the adult only group were statistically greater than the mean gain scores of the male and female adults in the mixed group of students. There was no statistical significance in the mean percent gain scores of the secondary group and the entire mixed group, compared to the mean percent gain scores and the sex of the students in the groups. There was no statistical significance between the mean percent gain scores of the secondary group compared to the mean percent gain scores of the secondary students in the mixed group.

Analysis by Student Status

Data collected to describe the population included the status of the student. This status categorized secondary students into either morning or afternoon status, and the adult students into either full-time or part-time status. To further evaluate the cognitive gain scores of the students, an analysis of covariance was calculated between the cognitive pretest, posttest scores by student status and the cognitive pretest, posttest scores by the student groups. Table V shows the results of that analysis of covariance. Each group was analyzed to determine if the cognitive gain score varied because of

TABLE V

ANALYSIS OF COVARIANCE, PRETEST/POSTTEST SCORES, BY GROUP AND STUDENT STATUS

Groups Compared	F Value	Significance of F
Adult/Mixed	16.14	.00 *
Adult/Adult-Mixed	6.59	.00 *
Secondary/Mixed	5.32	.00 *
Secondary/Secondary-Mixed	2.15	.12

Alpha = .05
* = Statistical Significance Exists

Note: Table V does not make a comparison of the adult group and the secondary group because such a comparison does not create a valid covariance matrix. Total adult classes have no morning or afternoon status and total secondary classes have no full-time or part-time status. The comparison of the adult and the secondary groups are shown in Table I as a t-test.

student grouping or varied because of the status of the students in the group. The F value and the significance of F between the groups is listed in Table III. The significance levels are precise and are not table values. The alpha level of .05 was selected to determine statistical significance. If the calculated significance of F is equal to or less than the alpha level of .05, then statistical significance exists. If the significance of F

is greater than the .05 alpha level, then no statistical significance exists.

As shown in Table V, the comparison of the cognitive pretest, posttest scores of the adult group and the cognitive pretest, posttest scores of the mixed group when classified according to the student status of the groups indicated statistical significance beyond the .05 level. This indicated a greater statistical difference in pretest, posttest scores between the groups of adult students and the entire mixed group of students due to the grouping, than between pretest, posttest score differences due to full-time and part-time student status. The comparison of the cognitive pretest, posttest scores of the adult group and the cognitive pretest, posttest scores of the adults within the mixed group when classified according to the student status of the group also indicated statistical significance beyond the .05 level. This indicated a greater statistical difference in pretest, posttest scores between the groups of adult students and the adults within the mixed group of students due to grouping, than between pretest, posttest score differences due to student status. The comparison of the cognitive pretest, posttest scores of the secondary group of students and the cognitive pretest, posttest scores of the mixed group when classified according to the student status of the group indicated statistical significance beyond the .05 level. This indicated a greater

statistical difference in pretest, posttest scores between the groups of secondary students and the entire mixed group of students due to grouping, than between pretest, posttest score differences due to student status. When analyzed by morning or afternoon status, the difference between the cognitive gain scores of the total secondary group of students and the cognitive gain scores of the secondary students in the mixed group of students were not statistically significant. Table VI indicates percent gain score of each group, by student status, and verifies the significance levels of Table V.

The cognitive gain scores of each group are categorized in Table VI according to student status. The difference in the scores was statistically significant between the grouping of students (Table V). There was consistency between the adult group performing better than

TABLE VI

COGNITIVE MEAN GAIN SCORES,
GROUP COMPARISON BY
STUDENT STATUS

Group	Second. AM	Second. PM	Adult Part Time	Adult Full Time
Adult Only	-	-	9.17	12.75
Entire Mixed	2.12	5.29	11.00	6.20
Secondary Only	9.11	4.57	-	-

the mixed group, as well as the secondary group performing better than the mixed group. (This can also be confirmed by referencing Table II.) There was not a statistical difference between the time status, or of the secondary students due to morning or afternoon status.

Analysis by Age

Data collected to describe the population included the age of the student. The age classifications were divided into two groups, 18 years and younger, and 19 years and older. The age analysis was conducted in order to evaluate the data by an analysis of covariance. Both the analysis of covariance and the t-test compare the mean scores of the groups. However, the analysis of covariance was utilized to control statistically any initial differences in the students' knowledge which might have been present and would have compounded differences in scores between the groups of students. This analysis of the groups by age provided a table of data comparable to the information found in Table I. The analysis of covariance provided information according to groups and age, and by characteristics of the groups. There were few secondary students 19 years old or older in the secondary group or the secondary-mixed group. Likewise, there were few adult students in the 18 years and below category in the adult group or the adult-mixed group of students. Table VII shows the results of that analysis of

covariance. The alpha level of .05 was selected to determine statistical significance. If the calculated significance of F is equal to or less than the .05 alpha level, then statistical significance exists. If the significance of F is greater than the .05 alpha level, then no statistical significance exists. The significance levels are precise and are not table values.

TABLE VII

ANALYSIS OF COVARIANCE, PRETEST/POSTTEST SCORES, BY GROUP AND AGE

Groups Compared	F Value	Significance of F
Adult/Secondary	17.52	.00 *
Adult/Mixed	33.37	.00 *
Adult/Adult-Mixed	8.39	.00 *
Secondary/Mixed	10.54	.00 *
Secondary/Secondary-Mixed	1.62	.20

Alpha = .05
* = Statistical Significance Exists

As shown in Table VII, the cognitive pretest, posttest scores of the total adult group of students compared to those of the total secondary group of students, when classified by age, revealed a statistically

significant difference beyond the .05 level. This indicated a greater statistical difference in pretest, posttest scores related to the grouping of adult students and secondary students, than differences of the pretest, posttest scores due to age. There was more significant difference in pretest, posttest scores due to student grouping than significant difference in pretest, posttest scores because the students were 18 and under or 19 and over. The comparison of the cognitive pretest, posttest scores of the adult group and the cognitive pretest, posttest scores of the mixed group when classified according to the age of the group indicated statistical significance beyond the .05 level. This indicated a greater statistical difference in pretest, posttest scores due to the grouping of adult students and the grouping of the mixed students than the difference in the pretest, posttest scores because of students' age. Additionally, the cognitive pretest, posttest scores of the adult group and the cognitive pretest, posttest scores of the adults within the adult-mixed group when compared according to the age of the group was statistically significant beyond the .05 level. This again indicated a greater statistical difference in pretest, posttest scores because of the grouping of adult students with the adults in the mixed group of students than between the pretest, posttest score differences because of student age. The comparison of the cognitive pretest, posttest scores of the secondary group

and the cognitive pretest, posttest scores of the mixed group when classified according to the age of the group indicated statistical significance beyond the .05 level. This indicated a greater statistical difference in pretest, posttest scores due to the grouping of secondary students and the grouping of the mixed students than the difference in the pretest, posttest scores because of students' age. When analyzed by age, the cognitive pretest, posttest scores of the total secondary group of students compared to the cognitive pretest, posttest scores of the secondary students in the mixed group of students were not statistically significant. There was no statistical significance that student grouping, or age of the students, affected the pretest, posttest scores of either of those groups of students.

Table VIII indicates the mean percent gain score of each group by age. The adult only group and the adult mixed group contained only ten students in the 0 to 18 age bracket. Similarly, the secondary group and the secondary students in the mixed group contained only six students in the 19 and over age bracket. Consequently, the scores with the small N's have little effect on the mean score of that group. Table VII indicated statistical significance between all groups compared except between the secondary and the secondary-mixed groups. Table VIII compares the mean percent gain scores by age and verifies the groupings by adults and secondary students. The adult only group of

TABLE VIII

COGNITIVE MEAN GAIN SCORES, EXPRESSED AS A PERCENTAGE OF TOTAL POINTS POSSIBLE, BY GROUP AND AGE

Group	Age 0-18 N	Age 0-18 % Gain	Age 19 + N	Age 19 + % Gain
Adult Only	2	6.00	133	12.42
Adult-Mixed	8	1.75	85	9.44
Entire Mixed	139	3.74	89	9.23
Secondary-Mixed	131	3.86	4	4.75
Secondary Only	135	7.45	2	3.00

students scored higher than the adults in the mixed group of students, the entire mixed group of students and the secondary only students. The adults in the mixed group performed better than the secondary students in the mixed group, and better than the secondary only group. The secondary only students had higher gain scores than the secondary students in the mixed group, but there was no significance that the group classification had any greater effect on those scores than the age classification of those students.

Analysis of Affective Data

One occupational area of the study, business and office education, provided student gain scores in the affective area. The mean of the gain scores (expressed by

percent) of each of the student groups, within the business and office occupational discipline, was determined and analyzed by the t-test. A comparison of the means of the affective percent gain scores, classified by groups, can be found in Table IX. The .05 alpha level

TABLE IX

T-TEST RESULTS, SEPARATE VARIANCE ESTIMATE, AFFECTIVE PERCENT GAIN SCORES, COMPARING GROUPS

Groups Compared	T-Value	Probability
Adult / Secondary	1.49	.15
Adult / Mixed	11.04	.00 *
Adult / Adult-Mixed	9.85	.00 *
Secondary / Mixed	-21.09	.00 *
Secondary / Secondary-Mixed	17.77	.00 *

Alpha = .05 Business & Office Education Only
* = Statistical Significance Exists

was selected to determine statistical significance. The corresponding t-value and probability levels of significance are also shown. As in the cognitive calculations, the probability levels are precise and are not table values. If a calculated probability is equal to or less than the .05 alpha level, then the group means are determined to be statistically significant. If the

calculated probability is greater than the .05 alpha level, then the group means are not statistically significant. In Table IX, the affective gain scores of the adult group compared to the affective percent gain scores of the secondary group are not statistically significant. The affective percent gain scores of all of the remaining group comparisons are statistically significant beyond the .05 level.

Table X reports the affective mean percent gain scores of the business and office education area by group.

TABLE X

AFFECTIVE MEAN GAIN SCORES, EXPRESSED AS A PERCENTAGE BY GROUP

Group	N	Mean
Adult Only	29	8.07
Entire Mixed	133	1.99
Secondary Only	17	7.34
Adult-Mixed	45	1.19
Secondary-Mixed	88	2.40
Total Population	179	3.48

The probability levels in Table IX determine where the significance exists. In Table X, the total adult group scored only .73 mean percent gain points higher than the total secondary group. That difference was not

statistically significant at the .05 alpha level. The total adult group scored 6.08 mean percent gain points higher than the entire mixed group, and 6.88 mean percent gain points higher than the adults in the mixed group of students. Both of these differences were significant beyond the .05 level. The total secondary student group scored 5.35 mean percent gain points higher than the entire mixed group, and 4.94 mean percent gain points higher than the secondary students in the mixed group. Both of these differences were statistically significant beyond the .05 level.

Examination of the Hypothesis

Cognitive Data

The data presented in this study revealed a statistical significance in the difference in cognitive percent gain scores, representing learning outcomes, of students enrolled in Oklahoma vocational education programs during the spring semester of 1989. The data shows that adult students, when placed in a group of adult only students, statistically have a greater mean percent gain score than the mean percent gain score of secondary only students, mixed secondary and adult students, and other adult students in classes of adult and secondary mixed students. These significant differences were reinforced by an analysis of covariance which controlled statistically any initial differences in the students

knowledge which might have been present and would have compounded differences in scores between the groups of students. From the analysis of covariance it was determined that differences in the cognitive pretest, posttest scores of the total adult group and the secondary only group, the entire mixed group, and the adult-mixed group when compared by sex of the group, were due more to the grouping of the students than whether the student was male or female. The difference in the cognitive pretest, posttest scores of the total adult group and the entire mixed group, the total adult group and the adults in the mixed group, as well as the secondary group and the entire mixed group, was due more to student grouping than to adult part-time, full-time or secondary morning or afternoon status. Finally, comparing the data by group and by age of the students, the adult only group again had higher cognitive pretest, posttest scores than those cognitive pretest, posttest scores of the secondary, mixed, adult-mixed or secondary-mixed groups of students. This greater cognitive pretest, posttest score was due more to the grouping of students than to the age group of the student. The difference in the cognitive pretest, posttest score of the secondary only group of students when compared to the mixed group of students was statistically significant. The secondary only group showed a greater cognitive pretest, posttest score than the mixed group. This pretest, posttest score was due

more to the grouping of students than was due to the students' status. There was no significant difference between the pretest, posttest scores of the secondary only students and the secondary students within the mixed group, when compared by the group and by age.

The null hypothesis tested was, H_0: there is no difference between the learning growth levels of secondary and adult students integrated into the same vocational education classroom and the learning growth levels of secondary and adult students enrolled in totally secondary and totally adult vocational education classrooms. Based on the results of the analysis of the data, the researcher rejects the null hypothesis of this study in relation to the cognitive mean gain scores of the student groups.

Affective Data

The data presented in this study revealed a statistical significance in the difference in affective percent gain scores, representing learning outcomes, of students enrolled in Oklahoma vocational education programs during the spring semester of 1989. The data shows that adult students, when placed in a group of adult only students, compared to the group of mixed students, and the group of adult-mixed students, statistically have a greater affective mean percent gain score than the affective mean percent gain score of the other groups of students. There was no significant difference in the

affective mean percent gain scores of the adult only group and the secondary only group.

The null hypothesis tested was, H_0: there is no difference between the learning growth levels of secondary and adult students integrated into the same vocational education classroom and the learning growth levels of secondary and adult students enrolled in totally secondary and totally adult vocational education classrooms. Based on the results of the analysis of the data, the researcher fails to reject the null hypothesis of this study in relation to the affective mean gain scores of the pure adult and pure secondary student groups. However, the researcher does reject the null hypothesis when comparing the affective gain scores of the adults only group to those of the entire mixed group as well as to the adult-mixed group. The researcher also rejects the null hypothesis in comparing the affective gain scores of the secondary group to those of the entire mixed group and the secondary-mixed group.

CHAPTER V

SUMMARY, FINDINGS, AND CONCLUSIONS

Summary

This study was conducted to determine if there were differences between the learning growth levels of secondary and adult students when the two types of students were integrated into the same vocational classroom, compared to the learning growth level of secondary and adult students when their classes were totally secondary or totally adult.

This study sought to answer the null hypothesis, H_0: there is no difference between the learning growth levels of secondary and adult students integrated into the same vocational education classroom and the learning growth levels of secondary and adult students enrolled in totally secondary and totally adult vocational education classrooms.

A review of the literature was conducted by the researcher which indicated that student learning outcomes were products of student physical development, student experience levels, student learning styles, teacher effectiveness, delivery systems and curriculum. The

review also indicated the importance of the role of the teacher in effective vocational learning settings.

The population of the study was the approximate 26,341 students enrolled in Oklahoma vocational education during the spring semester of 1989. The sample for the study produced 500 adult and secondary students who completed a pretest and a posttest to provide gain scores for the measurement of learning outcomes. The sample was divided into three groups. Group one (adults only) consisted of 135 students. Group two (mixed) consisted of 228 students, 135 secondary and 93 adults. Group three (secondary only) consisted of 137 students. The sample was from 14 Oklahoma area vocational schools and 22 campus locations.

The data were analyzed on the IBM 3081K computer system at the Oklahoma State University Computer Center utilizing SPSS-X statistical software, version 3.0. A comparison of the group mean percent gain scores was made through the t-test. Further analysis of the group pretests and posttests scores was conducted using an analysis of covariance. That analysis was conducted to determine whether the resulting student differential scores were significantly, or not significantly, different due to the classroom grouping of the students, or due to the students' sex, student status, and age. Additionally, the analysis of covariance was selected in order to control statistically any initial differences in the

knowledge levels of students which might have been present and which might compound differences between the groups of students. The analysis of the cognitive percent gain scores and pretest, posttest scores was the primary focus of the study. However, the affective gain scores of 179 business and office students were analyzed in order to indicate differences in attitudes and judgement in the groups of students.

Findings

Analysis of the data for the study resulted in the following findings:

1. Adult students, when placed in a classroom of adult only students, have a significantly higher cognitive mean percent gain score, as well as pretest, posttest scores than the corresponding scores of secondary only students, mixed secondary and adult students, as well as other adult students in classes of adult and secondary mixed students.

2. The difference in the cognitive pretest, posttest scores of the total adult classroom and the secondary only classroom, the mixed classroom, and the adult-mixed group when compared by sex of the group, were due more to the classroom grouping of the students than to whether the students were male or female.

3. The difference in the cognitive pretest, posttest scores of the total adult group and the adults within the

mixed group, the entire mixed group, and the secondary-mixed group, were due more to student grouping than to adult part-time, full-time or secondary morning or afternoon classroom status.

4. Comparing the data by group and by age of the students, the adult only group again had higher cognitive pretest, posttest scores than those cognitive pretest, posttest scores of the secondary, mixed, adult-mixed or secondary-mixed groups of students. These higher cognitive pretest, posttest scores were due more to the grouping of students than to the age group of the students.

5. The difference in the cognitive percent gain score of the secondary only group of students when compared to that of the secondary-mixed group of students was statistically significant. The secondary only group showed a higher cognitive percent gain score than the secondary-mixed group. Additionally, there was statistical significance indicating that the higher cognitive pretest, posttest scores of the secondary only students compared to the entire mixed group of students, were due more to the grouping of the students than were due to the students' status.

6. The study also revealed that within the business and office students, the total adult group of students, compared to the group of mixed students, and the group of adult-mixed students, statistically had a greater

affective mean percent gain score than the affective mean percent gain score of the other groups of students.

7. There was no significant difference in the affective mean percent gain scores of the adult only group and the secondary only group.

8. There was a significant difference (higher) between the mean percent gain score of the secondary group over the mean percent gain score of the entire mixed group, as well as between the mean percent gain score of the secondary students within the mixed group.

Conclusions

Although the results of this study identified statistical differences in student groups, they also identified additional questions which prohibit sound conclusions. The conclusions of this study should be interpreted with extreme caution until additional research is conducted that investigates some of the questions identified while conducting this study. Based on the findings, the researcher reached the following conclusions for the study:

1. Adults students achieve a greater cognitive learning growth level when placed in adult only classes.

2. Secondary students achieve a greater cognitive learning growth level when placed in secondary only classes.

3. Adult and secondary students achieve a greater

affective growth level when the adult students are placed in adult only classes and the secondary students are placed in secondary only classes.

Recommendations

Oklahoma vocational education administrators should consider the effectiveness of program delivery strategies on the student population in Oklahoma vocational education. As the demographics of students served by Oklahoma vocational education indicates, 11,786 adults compared to 14,555 secondary students served in the spring semester of 1989, the mix of students is nearly equal (55% secondary and 45% adults). To serve adequately the needs of both groups of students, further study should be conducted to additionally evaluate the practice of mixing the secondary and adult students into the same classroom. Present practices in program implementation and delivery strategies in Oklahoma vocational education may not currently provide for the primary educational consideration, competent student achievement levels, whether they be cognitive or affective. The information provided by this study is preliminary. It is not recommended that any statewide policies or practices regarding program delivery strategies be implemented based on these findings. Additional occupational area examinations should be developed and completely tested for validity and reliability. Those examinations should be

validated for both adult and secondary student groups. Oklahoma vocational education administrators need to be informed of the results of this study and be invited to participate in any further studies which might provide additional information concerning student learning outcomes and the mixed classroom concept. As competency examinations are developed in other occupational areas, pretests and posttests should be conducted in those areas to determine if findings exist comparable to this study.

Recommendations for Further Research

Findings of this study answered the questions raised by the reseacher and created some new ones. In order to provide additional information concerning student acheivement levels, the following recommendations for further research are made:

1. A study should be conducted to evaluate learning outcomes as affected by the instructors' teaching style in separate adult and secondary classrooms, and mixed classrooms.

2. A further study should be conducted evaluating student learning styles in mixed classrooms compared to total adult and total secondary classrooms.

3. Conduct a study to determine the teachers' ability to accomodate the various learning styles in adult classrooms, secondary classrooms, and mixed classrooms.

4. Conduct a study to determine if student

scholastic ability influences student learning performance in separate adult classes compared to separate secondary classes and mixed classes.

5. A further study should be conducted to determine if student learning growth level in adult, secondary and mixed classes is affected by the educational level of the instructor.

6. Conduct a study identifying the needs of students enrolled in adult, secondary and mixed classes, and determine if the program arrangement and organization satisfied the needs of those students.

7. Conduct a study to determine if student learning levels differ between occupational areas of vocational education.

It is the opinion of the researcher that the findings from the above proposed studies would provide additional and more definitive information to assist in the maximization of learning outcomes and delivery strategies for students, both secondary and adult, enrolled in Oklahoma vocational education.

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APPENDIX

SAMPLE INSTRUMENT

12/27/88 BUSINESS AND OFFICE COGNITIVE TEST 85 ITEMS
RECEPTIONIST GM

```
**********************************************************************
*                                                                    *
*   INSTRUCTIONS:                                                    *
*                                                                    *
*   Each of the items provided on this test is  followed by four     *
*   possible responses.  Choose the one  which best answers the      *
*   question or completes the statement.  WITH PENCIL ONLY, mark     *
*   your selection  on your answer  sheet.  DO NOT WRITE IN THIS     *
*   TEST BOOKLET.  An example of proper marking  is provided on      *
*   your answer sheet.                                               *
*                                                                    *
**********************************************************************
```

1. As in face-to-face communication, it is important in telephone conversation to be:

   A. brief
   B. courteous
   C. fascinating
   D. informative

2. Calls are transferred for numerous reasons. However, it is NOT necessary to transfer a call when the caller:

   A. can be handled better by another person
   B. can be helped by the secretary
   C. has reached the proper person
   D. has reached the wrong extension

3. In order to place a credit card or collect call it is usually necessary to first dial:

   A. "0"
   B. "1"
   C. "555"
   D. "8-405"

4. In placing telephone calls, how many times should you let the phone ring before hanging up:

   A. 1
   B. 3
   C. 5
   D. 10

5. Tone is the quality and emotion indicator of the voice. Therefore, it is important to smile when answering the phone because:

   A. co-workers and clients will be impressed by the attitude shown
   B. one may be on closed circuit TV
   C. the vocal cords will then relax and it is reflected in the voice
   D. those observing can see a nice appearance

6. It has been said that 70% of communication is visual--facial expressions gestures and posture. However, when using the telephone there is only one thing to consider:

   A. personality
   B. power
   C. prestige
   D. voice

7. When answering a business telephone, the conversation cannot begin until the person answering:

   A. asks the caller for their name
   B. asks the caller if they can be of help
   C. identifies the firm, office or department
   D. tells the caller good morning

8. A procedure used to determine who is calling, and/or why they are calling is:

   A. communicating
   B. evaluating
   C. procrastinating
   D. screening

9. Use "magic words" whenever possible in telephone conversation. Which of the following are NOT "magic telephone words":

   A. I'm sorry
   B. please
   C. thank you
   D. uh-huh

10. To insure that your boss receives telephone messages, you should:

   A. designate a special place for messages to be picked up
   B. leave messages on your desk
   C. place messages on the biggest pile of papers
   D. put messages on his desk

11. An accurate, written telephone message should:

A. eliminate guess work
B. only be left if the caller requests one
C. read like a road map
D. require the help of a private detective

12. Telephone messages should be delivered to your employer:

A. as soon as possible
B. at the end of the day
C. when it is convenient
D. when the boss requests them

13. Accurate note-taking can be useful for future follow-up as well as messages. Notes and messages should include names as well as:

A. all pertinent information
B. height, weight and age of caller
C. home telephone number of caller
D. the caller's social security number

14. In many offices telephone messages are recorded on:

A. company letterhead stationery
B. printed memos for taking telephone messages
C. scratch paper from adding machines
D. tape recorders

15. The yellow pages section of the telephone directory will list most of the local dealers, under a word or trademark design in:

A. alphabetical order
B. chronological order
C. geographical order
D. numerical order

16. Telephone directories suggest that you dial which of the following number sequences for directory assistance outside the local area code:

A. 0 + area code + 555-1212
B. 1 + area code + 555-1212
C. 1 + 800 + 555-1212
D. 1 + 1411 + 555-1212

17. Telephone directories serve basically the same functions throughout cities, communities, and states. However, some directories may:

A. arrange all sections geographically
B. list all known 800 telephone numbers
C. maintain color page divisions
D. vary in size depending on the number of telephone listings

18. When using the telephone directory and seeking a particular item, what section can be used to make shopping easier:

A. classified section
B. community information guides
C. index to yellow pages
D. white pages

19. Which of the following is necessary to correctly express the meaning of a sentence:

A. dependent clause
B. essential clause
C. introductory dependent clause
D. introductory phrase

20. An exclamatory sentence is one that expresses strong feeling. Which of the sentences below expresses strong feeling:

A. Don't remove these files.
B. Please close the door.
C. Send the check by mail.
D. When does this conference begin.

21. Select the sentence below that reflects correct adverb usage:

A. I feel badly about her accident.
B. I feel sure she can complete the task competently.
C. She seemed real sure of her abilities.
D. She spoke clear and loud into the microphone.

22. Which of the following sentences reflects correct word usage:

A. I kept silent out of deference to her views.
B. There is a deference of $2.70 in the totals.
C. This process is differently than the one we used previously.
D. We did things different when I began working here in 1980.

23. Select the sentence below which reflects correct word usage:

A. The new clerk is doing as good as could be expected.
B. We must go further to get to Exit 10.
C. We sure appreciate your efforts on this project.
D. You must check further into the case before making a determination.

24. Which of the following sentences is worded correctly:

A. His pay raise is on account of his diligence.
B. She transferred due to personal conflicts.
C. The promotion is due to her skill and dependability.
D. The schedule change is because of several staff requests.

25. Which of the following verbs will correctly complete this sentence: It is necessary that these letters _____ answered by Friday.:

A. are
B. be
C. get
D. were

26. Which of the following is NOT a redundant expression:

A. invisible to the eye
B. joined together
C. new and innovative
D. small and lightweight

27. Indicate which sentence below is most forceful:

A. All adjustments in the report will be made by the office manager.
B. Learning your opinion of our new work schedule is of great interest to us.
C. The assignment should be completed by Tuesday.
D. Your instructions are being sent by Ms. Oar, who will be in Norman this week.

28. Applying the rules for abbreviations with personal names, select the correct item from the following list:

A. Dr. Lynn Perks
B. Dr. Mary Byrd, M.D.
C. Gov. Terri Nigh
D. Sen. Jo Johnson

29. Indicate the example of correctly writing a date from the items below:

A. Aug. 9, 1984
B. August 9, 1984
C. August 9th, 1984
D. 8/9/84

30. Indicate the INCORRECT capitalization rule. Capitalize:

A. all official titles of honor when they precede personal names
B. an independent question within a sentence
C. each item displayed in a list
D. the second part of a sentence when it is set off by dashes or parentheses within another sentence

31. Which of the following sentences uses the colon correctly:

A. Employer expectations for employees consist of: Appearance, dependability, and skill.
B. Employers have definite employee expectations: For example, appearance, dependability, and skill.
C. Employers have three major employee expectations: Appearance, dependability,and skill.
D. The following are qualities employers expect from employees. These have been determined by surveys. They are: Appearance, dependability, and skill.

32. Which sentence below is punctuated correctly:

A. A lot of time, and effort, and money went into this program.
B. I hope you will read the article, and that you will give me your opinion.
C. In 1984 we redesigned our entire approach to customer relations.
D. Pat and I are willing to work on the project but Carl, Lynn, and Jo aren't sure.

33. A style of punctuation which uses no punctuation after the salutation and complimentary close of a businesss letter is:

A. closed
B. mixed
C. open
D. variable

34. Which of the words listed below will correctly complete the following sentence.
This diet is _____ prepared to meet the patient's nutritional requirements:

A. especial
B. especially
C. special
D. specially

35. Select the correct usage of numbers from the sentences below:

A. The appliance division recorded sales of 5 refrigerators, 2 ranges, and 12 air conditioners by only three salespersons.
B. The appliance division recorded sales of five refrigerators, two ranges, and twelve air conditioners by only three salespersons.
C. The appliance division recorded sales of five refrigerators, two ranges, and 12 air conditioners by only three salespersons.
D. The appliance division recorded sales of 5 refrigerators, 2 ranges, and 12 air conditioners by only 3 salespersons.

36. The primary purpose of a procedures manual is to:

A. aid in creating a smooth work climate
B. clarify company functions and history
C. list the fringe benefits for employees
D. specify employee rights and responsibilities

37. One of the best sources of information for writing an office policy manual is:

A. company magazine or newsletter
B. manuals from office operations similar to yours
C. occupational outlook handbook
D. secretarial procedures textbook

38. The three R's governing effective office manuals are ease of reading, reference, and:

A. rationale
B. re-education
C. revision
D. rotation

39. A procedures manual will often insure that tasks are completed:

A. by the end of the month
B. by the supervisor
C. in a uniform and consistent manner
D. under tight deadlines

40. In sorting through her in-basket at the beginning of the day, the secretary finds the following written instructions;
1. Type the attached agenda for tomorrow's conference and make 15 copies.
2. Make sure the conference room is outfitted with writing pads, pencils, and ashtrays for the meeting.
3. Write checks for the invoices that are due on the 10th of next month.
4. Call Herb White, 683-2492, and tell him I'd like to take him to lunch today. If he can go, I will pick him up at his office fifteen minutes before noon.
Which of the tasks should be accomplished first:

A. 1
B. 2
C. 3
D. 4

41. On a copy that has been reviewed and corrected, three lines drawn under a letter indicates the letter should be:

A. capitalized
B. moved to the right
C. omitted
D. reduced to lower case

42. A combination telephone and teleprinter system that enables its subscribers to dial directly any other subscriber and send or receive a message is a:

A. datacom
B. data-phone
C. telemaster
D. telex

43. A machine used for transmitting written words or figures over telephone or telegraph wires is the:

A. cathode ray tube
B. information processor
C. teletypewriter
D. word processor

44. Select the INCORRECT rule for scheduling your employer's appointments:

A. avoid appointments on the first day after your employer's absence of several days
B. avoid late-afternoon appointments so your employer can complete the day's work
C. on any day, leave time in the appointment schedule for your employer to take care of his mail
D. schedule as many appointments as possible on Monday to leave the rest of the week free for other business

45. A secretary must often keep records of an executive's personal expenses. A good method for keeping track of when insurance premiums are due would be to:

A. let the accounting department put all information on computer
B. let the insurance company send an "account due" notice
C. request the executive's agent call you each time a premium is due
D. use a tickler file

46. A secretary is sometimes responsible for an expression of sympathy to an executive's collegue or collegue's family. In lieu of flowers as an expression of sympathy to an Orthodox Jewish family, a secretary should send:

A. a cash donation to the deceased person's favorite charity
B. a cash donation to the deceased person's synagogue
C. a fruit basket
D. a sympathy card

47. The secretary must provide the following information when scheduling a conference room:

A. an agenda, list of participants and equipment needed
B. day of meeting, refreshments needed, equipment needed and number of participants
C. employer's name, date of the meeting, number of participants, and equipment needed
D. employer's name, the day of the meeting, and an exact agenda

48. Which of the following statements is FALSE regarding the use of office time standards to schedule work:

A. employees generally do more and better work
B. productivity levels of an individual or the office staff as a whole can be determined
C. they provide more efficient control of office costs
D. they show favoritism to faster workers

49. Which of the following is NOT a concern of the office manager in scheduling work:

A. evaluating work output in terms of cost only
B. minimizing peak work loads
C. placing similar work in the same unit
D. utilizing established work standards

50. One way an office manager can be sure that all tasks are completed in a consistent manner by all office workers is to provide uniform:

A. control
B. pay scales
C. procedures
D. punishments

51. In what part of a letter would you find a reference notation:

A. body
B. closing
C. heading
D. opening

52. The complimentary close is generally double spaced below the letter's:

A. body
B. heading
C. inside address
D. salutation

53. A letter style that is similar to block style, except that the salutation and complimentary close are omitted is:

A. AMS simplified
B. block
C. modified
D. standard

54. The part of the business letter containing information in paragraph form and generally single spaced is called the:

A. body
B. complimentary close
C. heading
D. salutation

55. When sending an interoffice memo, the secretary should place the memo in a:

A. large manila envelope
B. windowed envelope
C. 6 3/4" envelope
D. #10 envelope

56. How far from the left should you begin one or two line entries on file labels:

A. 1/2 inch from the left
B. 1 inch from the left
C. 2 spaces from the left
D. 5 spaces from the left

57. An itinerary includes:

A. dates of family birthdays, anniversaries, etc.
B. date, time, and place of all departures and arrivals
C. emergency numbers of police, doctors, hospitals
D. numbers of all travelers checks

58. The U.S. Postal Service's E-COM system provides for delivery of a customer's messages to any point in the continental United States within how many business days:

A. one
B. two
C. three
D. five

59. An acronym is a shortened form derived from the initial letters of the words that make up the complete form. Which of the following is an acronym:

A. Corp
B. Inc.
C. Jct.
D. MADD

60. When using a rubber eraser on typed copy, one should avoid disturbing the allignment of the page. If the erasure is to be made on the upper 2/3 of the page, turn the cylinder:

A. backward
B. backward two lines
C. forward
D. forward two lines

61. When a business name begins with a number, which procedure would be followed to index the name:

A. place the number at the end of the name in digit form
B. spell out the number in words and consider it as one indexing unit
C. use the number in digit form and file numerically
D. write the number in words and consider each digit as a separate unit

62. Color coding is used in an alphabetic filing system to:

A. assure that all persons in the office will know filing procedures
B. make it possible for only the file clerk to use the files
C. guarantee that the files will be neat in appearance
D. speed up the process of information retrieval

63. When placing captions on a file folder label, it is a good idea to:

A. print the caption so that it can be read easily
B. print the surname and write out the remaining parts of the name
C. type the entire caption so that it can be read easily
D. write the caption in your best handwriting

64. Lynn has recently been hired as a secretary in a law firm. One of the job duties is filing. On the first day of work, Lynn is asked to file correspondence in the alphabetic files. As Lynn is filing, she notices that the files are not being utilized as they could be. What should Lynn do to correct this situation:

A. change all the labels and captions on the folders
B. convert the files to a numeric system so that they can be found easier
C. spend the day rearranging the file folders
D. wait until she has established credibility as an employee then suggest appropriate changes in the system

65. Numbers are used to file correspondence in which of the following filing systems:

A. chronological
B. geographic
C. numeric
D. subject

66. If a secretary utilizes the geographic filing system, under what heading would a folder for Jamie L. Brown,1011 Tenth Street, St. Louis, Missouri, be found:

A. Br-Bz
B. Brown, Jamie
C. Missouri
D. St. Louis

67. Papers should be filed in appropriate subject folders in which of the following manners:

A. future dates first
B. latest date in the front
C. past dates in front
D. retrieval position

68. To subject file, one must identify the most important subject areas their business encounters. Labels can then accurately be prepared for:

A. file cabinets
B. folders
C. lists
D. procedures

69. In addition to subject files, what other files are often used by businesses to organize their correspondence:

A. alphabetic
B. cross-reference
C. miscellaneous
D. numeric

70. The proper way to type a label for a customer named Lynn L. Lane would be:

A. Lane, Lynn L.
B. L. L. Lane
C. Lynn Lane L.
D. Lynn L. Lane

71. While routinely processing incoming mail, you notice an enclosure is missing from a letter. You should:

A. call the person listed on the return address and call it to their attention
B. note the omission in the margin of the letter
C. not worry about it and send the correspondence on to the adressee
D. send a memo to the person listed on the return address requesting the omitted enclosure

72. Enclosures should be:

A. attached to the letters they relate to
B. filed immediately
C. folded and placed back in the envelopes
D. thrown in the trash

73. Which of the following is NOT an advantage of marking mail with the date and time received:

A. it encourages a prompt reply
B. it lets the supervisor know how long it takes to process incoming mail
C. it may be important regarding financial documents
D. it may be of importance on contracts and insurance

74. Unless your employer has given you previous permission, you should NOT open mail that is marked:

A. first class
B. interoffice
C. personal
D. urgent

75. In sorting first class mail which is not addressed to a specific person in the organization, the secretary should first:

A. decide, based on return address, the company writing and direct to the letter to the proper person
B. place in one stack and deliver to a secretary in the last office mail for the day
C. place on the boss' desk and let him determine to whom it should be sent
D. scan the text or subject heading to decide to whom it will be delivered

76. Which of the following is NOT a secretarial practice that will assist an employer with her or his daily mail:

A. add marginal reminders and suggestions that may be helpful in replying
B. note any missing enclosures
C. tell employer important points and how to respond
D. underscore important points with a red pen

77. The secretary will generally take responsibility for handling:

A. confidential mail
B. personal mail
C. routine mail
D. urgent mail

78. When sorting mail, which category listed below is considered the least important, and requires the least attention:

A. ads, circulars and other printed material
B. catalogs
C. magazines
D. parcel post packages

79. What is branch mail:

A. employee's personal mail
B. employer's private mail
C. mail sent in regular interoffice envelopes to other offices throughout the state
D. mail sent to other departments

80. What is the first step in sorting mail:

A. check addresses and place in binder
B. put each person in office mail in a particular stack
C. separate the interoffice mail from the first class mail
D. sort the small envelopes from the large ones

81. When using transfer letters on paste-ups, transfer from the plastic sheet to the base sheet by rubbing with a blunt instrument. This instrument is called a:

A. burnishing tool
B. fluid brush
C. measuring rod
D. stylus

82. For best results, illustrations to be in paste-ups should be:

A. black and white
B. carbon copies
C. color copies
D. mixtures of black, white and color

83. When attaching materials to a master sheet, what is the best adhesive to use so that materials may be easily lifted and repositioned:

A. Elmer's glue
B. mucilage
C. rubber cement
D. super glue

84. Which copier requires that the master copy lay flat for copying and remain in place as it is copied:

A. feed-through
B. flat-bed
C. irregular
D. stencil

85. The type copier you are using when the master is fed into the machine and ejected after it is copied is:

A. carbon
B. feed-through
C. flat-bed
D. offset

12/27/88 BUSINESS AND OFFICE SCENARIO TEST 5 SETS
RECEPTIONIST GM

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*                                                                    *
* INSTRUCTIONS:                                                      *
*                                                                    *
* These test items contain a situation statement followed by         *
* several related questions. First, carefully read the situation     *
* statement. Using this information, answer the related questions.   *
* Each has four possible responses. Choose the response that best    *
* answers that question or completes that statement. WITH PENCIL     *
* ONLY, mark your selection on your answer sheet. DO NOT WRITE IN    *
* THIS BOOKLET. An example of proper marking is provided on your     *
* answer sheet.                                                      *
*                                                                    *
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You are working as a secretary in the law firm of Walace and Reed. Your responsibilities include answering the telephone. One of the partners in the firm, Mr. Bill Reed, has informed you that he will be out of the office until 8:00 a.m. tomorrow morning. You are to take all necessary messages, or refer the caller to his partner, Mr. Jim Walace.

1. Which of the following statements is the correct way to answer the telephone at this law firm:

   A. "Hello, this is Jane Doe for Walace and Reed"
   B. "Jane Doe, may I help you?"
   C. "Jane here, can I help you?"
   D. "Walace and Reed, Jane Doe speaking"

2. Which of the following would be the correct response if someone calls and asks to speak with Mr. Reed:

   A. "He hasn't come in today, could I take a message for you?"
   B. "Mr. Reed is not in today, would you like to call back tomorrow?"
   C. "Mr. Reed will be out of the office until tomorrow morning, could Mr. Reed's partner assist you, or would you care to leave a message?"
   D. "No, I don't know where he is, but I will be glad to take a message."

3. Which of the following information would you need in order to accurately complete a telephone message for Mr. Reed:

   A. date and time of call, caller's name, name of company, telephone number, and the message
   B. date of call, name of caller, and the telephone number
   C. date of call, name of company, and the message
   D. date of call, name of company, and the time

Janice is the secretary for six people. She is to divide her time equally. She tries to complete the priority work first, but sometimes several assignments are equally important and are needed as soon as possible. Mr. Brown, gives Janice more work than any of the other staff members, and his assignments often include lengthy personal jobs. Janice works steadily, through breaks, and sometimes stays late trying to keep up with the work. The other staff members have been complaining that Janice spends most of her time working for Mr. Brown and lets their work wait.

4. Which of the following could Janice have done to prevent this situation from occuring:

   A. Janice should have gone into Mr. Brown's office and cried until he gave her less work
   B. Janice should have quit her job and found a job with only one boss
   C. Janice should have spoken angrily with Mr. Brown refusing to handle his personal matters
   D. When Janice first noticed her work load becoming too heavy, she should have talked with Mr. Brown about the possibility of having someone else handle his personal jobs

5. Which of the following should Janice do in order to remedy this situation:

   A. ask some of the other secretaries to help her complete the work
   B. be honest with Mr. Brown, make him aware of the situation
   C. go to her other employers and speak poorly of Mr. Brown
   D. try to stay longer in the evenings so she will get her work done

6. Should Janice have been asked to perform personal jobs for her employer:

   A. no, personal duties do not have a place in a business office
   B. that would depend upon the job duties agreed upon when Janice was first employed
   C. yes, all secretaries are required to perform personal jobs for their employers
   D. yes, no matter what her job description states, she is supposed to follow her employer's orders

The public relations program in action has been your major concern since you started the business at Window's, Inc., three years ago. Customers, vendors, and employees are very aware of the public ralations program enforced by the company. As one of the first objectives in rewriting your personnel handbook, you want the handbook to express sincerity, honesty, and the direct handling of employees' problems. You want to obtain a fair but firm policy of communications with each and every employee. Employees form their opinion of the employer on the basis of the employer's personnel policies and the quality of supervision they receive. You have decided to appoint Harry P. Lemms, a vice-president, to help you revise or make a new personnel handbook that might take care of the majority of personnel problems that arise.

7. Mr. Brown, the vice-president of your company, has suggested that all communications be typed out and put in the employees' mail boxes. He feels that employees should be told what to do and it is none of their business why they are asked to do the job. He indicates that input by employees cannot add to the success of a job which depends strictly on the management's training and abilities. Based on your study of communications, what is your opinion of what Mr. Brown has suggested:

   A. communications feed-back is not a primary tool for establishing good human relations with employees
   B. communications is a two-way process, and it is difficult for employees to be either intelligent or enthusiastic if they do not know the reasons for such orders and instructions
   C. employees cannot be treated as people, they should be treated as employees
   D. employers will not respond to positive or negative feed-back by employees, after all the employer is the boss

8. You have decided to hire a personnel expert, Jim Brown to assist firm with strategies to improve communications between workers and management. Jim's company is known for their expertise in working with small companies in making the company more effective. You feel if working relations with your employees could be improved the company would be more effective and more productive. Jim has been with the company two weeks visiting with personnel and looking at the firm as a whole. What suggestions do you feel Jim would be making about communications within the firm:

   A. communications can be improved by taking into account the problems that do not fit a rule book and handling them on a face-to-face basis
   B. quick answers save time and are usually OK in solving personnel problems within small companies
   C. studying each employee's problem can be costly because you have to concentrate on the management of the company as a whole
   D. there is no danger in handling personnel problems on a case-to-case basis

9. As your firm has grown from five to fifteen employees in the last three years, you have noticed some break down in communications with your employees. It is realized that smallness creates a unique situation in the staffing functions of your firm. The atmosphere of a small firm creates distinctive opportunities and problems in developing good relations among its members. You have decided to discuss at length the pros and cons of having a written handbook for employees with your vice-president Mr. Brown. What do you think Mr. Brown's suggestion might be regarding a written handbook for employees:

   A. effective human relations are more effective if they can be handled personally rather than using the handbook as final decision making
   B. the employer will not work that closely with his employees and the handbook would be sufficient for employee problems
   C. the handbook is a must because of the time involved dealing with people on an individual basis
   D. the handbook is needed because time is money and usually, it will take the boss' time to solve employee complaints

Jennifer is the newest regional word processing supervisor at Peachtree Enterprises. Travis, the former supervisor, is quite different from Jennifer and had an entirely different concept of the way an efficient office was handled. Complaints of unrealistic goals set by Travis, coupled with low employee performance levels and general dissatisfaction comprised the situation when Jennifer assumed her new duties. Having heard through the grapevine of the problems awaiting her, she has done some homework before beginning work, in order to ease the transition period. Consider the following situations and select the most appropriate responses.

10. Jennifer, unlike Travis, knows how to set realistic goals for her staff. She understands the power of:

   A. deception and trickery
   B. intrigue and ambiguity
   C. motivation and encouragement
   D. silence and secrecy

11. Presidents and chairmen of the board get the greatest productivity from their employees when they employ all of the following EXCEPT:

   A. aggressiveness
   B. concern
   C. decency
   D. fairness

12. Travis has employed the "silent" treatment to his staff to communicate to them his:

A. ability to convey his displeasure to a subordinate in a positive way
B. effectiveness in controlling his tongue and temper
C. own inadequacy in dealing with a problem
D. superiority and power in gaining their attention and respect

Debi is a young business executive who has reached her goals early in life as a result of goal setting and executing. She believes to succeed in any venture, you must plan your work, then work your plan. She has learned the value of communication skills and how to use them to her advantage in her business relations. In each of the following situations, which response will bring about the best results for Debi.

13. Debi realizes one of the greatest secrets of success in dealing with others is the art of listening. She has learned to listen to what is said and what is left unsaid. This technique is called:

A. aggressive listening
B. passive listening
C. projected listening
D. sensitive listening

14. Debi knows the "halo" effect can be positive or negative. It is also a key factor in the make-it-or-break-it moments of her life. In meeting a new person from a business similar to hers, she decides to employ a positive "halo" effect. In order to do this, Debi will:

A. ask questions about the person's personal life to show her interest
B. divulge certain tidbits of gossip she feels are amusing to her new acquaintance
C. do her homework on the person she is meeting so that she will be able to discuss some common interests
D. let the person know she finds him physically attractive

15. In order to succeed in business, Debi understands most of the rules of the "game". However, there is one rule that is NOT conducive to success. Indicate that rule from the following examples:

A. arrive late and leave early
B. be visible
C. keep moving
D. make yourself noticeable

VITA

Gary Alvin Moon

Candidate for the Degree of

Doctor of Education

Thesis: A COMPARISON OF LEARNING OUTCOMES OF SECONDARY AND ADULT STUDENTS INTEGRATED INTO VOCATIONAL PROGRAMS IN OKLAHOMA AREA VOCATIONAL TECHNICAL SCHOOLS

Major Field: Occupational and Adult Education

Biographical:

Personal Data: Born in Oklahoma City, Oklahoma, December 27, 1945, the son of Irvin A. Moon and Ester L. Moon. Married to Janet Marie Moon, July 1, 1977.

Education: Graduated from Wellston High School, Wellston, Oklahoma, in May, 1963; received Bachelor of Business Administration, University of Oklahoma in August, 1968; received Master of Arts in Teaching, Oklahoma City University in December, 1972; received Distributive Education Certificate from Central State University in July, 1972; received Secondary Administrative Certification from Central State University in July, 1987; completed requirements for the Doctor of Education Degree at Oklahoma State University in July, 1989.

Professional Experience: Accountant, Oklahoma Gas and Electric Company, 1968-69; Accountant, Texaco Inc., 1969-71; Accountant, General Electric Credit Corporation, 1971-72; Distributive Education Teacher-Coordinator, Shawnee High School, 1972-75; Instructor, Distributive Teacher Education, University of Missouri, 1975-76; Coordinator of Special Programs, Tulsa County Area Vo-Tech, 1976-79; business owner and operator, BMI Systems, 1979-83; business owner and operator, Alpha

Enterserch Inc., 1983-88; Assistant Director, Cooperative Vocational Education (CVE) Institute, Central State University, summers of 1986, 1987; Self-Employment Training Facilitator, Francis Tuttle Vo-Tech Center, 1988-present.