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EFFECTS OF DIRECT INSTRUCTION AND PRECISION TEACHING ON
ACHIEVEMENT AND PERSISTENCE OF ADULT LEARNERS

by

JOHN H. AUTREY

DISSERTATION

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

in partial fulfillment of the requirements

for the degree of

DOCTOR OF EDUCATION

1999

MAJOR: HIGHER EDUCATION

Approved by:

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Advisor Date

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Dedication

I would like to give thanks to God for allowing me to complete this dissertation. I dedicate this thesis to past family members and future members of the Autrey family.

It is dedicated to both my deceased Aunt Zenobra L. Lewis and Uncle Edward Lewis, the two people who had the greatest influence on my life. You accepted an infant and gave him the educational foundation that allowed the youngster to excel academically and subsequently obtain a doctorate.

This document is also dedicated to my granddaughter, Ariel Nicole Autrey. My hope is to inspire her to pass on the educational legacy and values that Zenobra and Edward Lewis gave me.

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CHAPTER I

STATEMENT OF THE PROBLEM

Background of the Study

Major urban areas in the United States are populated by under-educated and under-employed youth for a variety of socioeconomic and educational reasons. It has been estimated that in the United States over 25 million adults have less than a high school diploma (Rachal, Jackson, & Leonard, 1987). Increasingly, automated technology, maturing industries, changes in consumer demand and the emergence of more dynamic world-wide competition all have worked together to produce an almost insurmountable barrier for young urban high school dropouts. No longer can a high school dropout plan on factory work leading to self sufficiency in the United States, particularly in the Detroit metropolitan area.

There is a large number of at-risk, under educated, under-employed youth in the city of Detroit. According to the Detroit Public Schools 1992 statistics, the drop out rate over a four year period from 1986-1990 averaged 38.8%. Of approximately 6,700 high school graduates in 1991, 32% received uncertified diplomas. These students tested below the eighth grade level in both reading and mathematics. Social and economic indices revealed that the city has major problems to be resolved. Detroit has the highest youth poverty rate of any large city in the United States. According to a 1989 statistic, nearly 47% of Detroit youth live in poverty. A 1993 figure put youth unemployment at 23.5%. The employment prospects for youth are bleak. Most jobs require higher reading levels for problem- solving than ever before. A major 1984 study of occupational

settings (Mikulecky, 1984) found that 70% of the reading material in a cross section of jobs is between the 9th and 12th grade level in difficulty, and that 15% is above 12th grade reading level. Workers today confront a wide range of reading material. Lengthy handbooks, memoranda, procedural checklists, and written materials are often accompanied by graphs, charts, and numbers. Advances in technology increase the need for employees to produce and comprehend written material. Thus, many employees possess the rudiments of basic skills need retraining because they are not fluent readers and lack a general knowledge base. In order to increase their reading and mathematics levels of comprehension, a few employees have enrolled in Adult Basic Education (ABE), Adult Secondary Education (ASE), and Adult Literacy Programs (ALP) offered through the various state school districts, including the Detroit Public Schools. This has not completely resolved their educational deficiencies, alternative methods must be researched.

Adult education programs have historically been plagued with high attrition rates of 40 to 60% (Darkenwald & Valentine, 1985). In 1985 only 2.6 million adults actually participated in organized adult education programs. Of this 2.6 million, less than 8% actually completed their academic objective (Pugsley, 1987).

The aforementioned scenario is prompting adult educators to vigorously seek ways to change the trend and to identify strategies that will improve the adult learning process. An alternative to the adult education techniques presently utilized are Direct Instruction (DI) and Precision Teaching (PT) methods of instruction. Both methods of teaching claim to increase time on task and to

increase student achievement. However, adult educators remain skeptical about the effectiveness of the techniques in meeting the needs of the adult learner. The lack of research in this area has not helped to mitigate their doubt.

Although the concerns of adult educators reflect the thought that DI and PT are just another education "fad," more important is the question, can these methods of instruction increase achievement for the adult learners. Are DI and PT more effective than current adult education practices? Are they effective only with students enrolled in K-12 programs?

Adult educators are clearly in need of alternative strategies and methodologies to increase achievement and reduce attrition in ABE and ASE programs. DI and PT have the potential of providing these alternatives. Only through investigating and evaluating the relationships of these instructional methodologies to the diverse learning styles of the adult learner will it be possible to develop effective strategies to improve the adult learning process.

Problem Statement

Direct Instruction and Precision Teaching have been touted solutions to many of problems facing adult educators. Both have put forth claims of improving achievement and enhancing the educational process for all adult learners. However, the research is slow to prove the effectiveness of these systems for the population under investigation in this study. The question is whether these systems are effective for adult learners with educational deficiencies. This study will examine effects of learner characteristics and combined Direct Instruction and Precision Teaching methodologies to achieve persistent learning with adult learners resulting in a lower percentage of dropouts.

Direct Instruction

The need to combine strategies to rapidly establish basic skills required for success in school and on the job cannot be overstated. Neither the students, nor the community can afford a long period of remedial or developmental education. Hence, the emphasis must be placed on educational technologies shown to work not only effectively, but quickly.

Direct Instruction (DI) is part of the legacy of psychologist B.F. Skinner to education. This educational practice is derived from his pursuit of the science of learning and behavior (West, 1990). Documented evidence supports the fact that DI when used in a classroom setting increases grade level scores one to four years in reading (Snider, 1990). The increase in grade level scores has been attributed to the DI instruction model that places emphasis on explicit, systematic and well-structured scripted presentations, with review and practice. Feedback and practice insure a more efficient learning outcome, practice is done 90% of the time. This constant review of the class material is conducted until the educational task is automatic and commits the information to long term memory (Snider, 1990).

The most obvious feature of the DI method is the high level of involvement of both the teachers and the students in teaching and learning. Gertsten (1991) indicated that DI must be teacher directed with clarity and student success remaining at the heart of this method. Other features include:

1. Students participating in fast-paced, small group instruction;
2. Teacher and students using curricular materials which are well designed, carefully sequenced, and include carefully worded instruction for the teachers and interesting and relevant activities for the students;

3. Students receiving daily feedback about their achievements and progress, and
4. The presence of positive attitudes toward learning exhibited by both students and their teachers.

Upon first inspection, DI seems to be some form of rote learning, in which students memorize a lot of facts, but have no idea how these facts apply to anything. This does not have to be the case: DI has often been falsely equated with skilling and drilling, in which children are taught to mindlessly apply skills in artificial situations (Spiegel, 1992). According to Berquam (1982), DI can be used to learn the following educational concepts: reading skills, study skills, cooperation, legal concepts, following of written directions, math and social studies. A summarization of DI suggests that it is a teacher's role to provide students with a repertoire of learning strategies to meet their needs. Thus, modeling DI involves describing to learners' situations in which a strategy might be needed, how to select from the alternatives which strategy to use, and modeling how one thinks when using the strategy.

Precision Teaching

Precision Teaching (PT) originated as, and largely remains, a measurement and analysis technique that can be used to determine if other techniques work. Recording a student's daily performance on charts provides valuable feedback for the student and the teacher. It is an efficient way to observe changes in behavior that may not otherwise be recognized. Through regular charting, teachers are given concrete information showing where the participants are functioning (evaluation), where they are going (performance

goals), and how they are getting there (growth) (Rosenshine, 1979).

However, it is not as a data analysis tool that PT has the greatest potential for widespread use in education. The teaching procedures that good precision teachers use in conjunction with charting daily student progress are the same procedures that are used in other effective programs such as direct instruction (Rosenshine, 1979). These techniques are well documented in the “teacher effectiveness” research: clear goals, practice, monitoring and feedback, and expectations for high accuracy in performance (Lindsley, 1991). The unique element in precision teaching is the direct emphasis on fluency development. Fluency is defined as easy, accurate, automatic, rapid performance. The result of precision teaching has produced learners with high rates of fluency on targeted skills. This commitment to fluency is what distinguishes precision teaching from other effective instructional strategies. Because precision teachers focus on learning and fluency, and because their measurement procedures are systematic, they have discovered and developed techniques that directly promote rapid learning or automatic fluent performance.

PT coupled with DI provides the teacher with a more exact, realistic measure of each student's performance on an on-going basis. Both techniques have been successfully utilized with adult participants. These adults have demonstrated improvement in basic skills measured by a minimum of two and a maximum of six grade levels per 20 to 30 contact hours of instruction. This achievement has been documented by pre and post Metropolitan Achievement Tests or a passing score on the General Education Development (GED) Certification Test (Johnson, 1990; Johnson & Layng, 1992; Snyder, 1992).

Precision teaching needs more data to show that fluent performance is necessary to produce effective learning and efficient retention skills. It must be shown that not only can we teach students to do things faster, but that this additional speed makes a difference in their learning and retention. To accomplish this, data must be recorded. First it must be documented that speed or fluency improves retention and that fluency has a positive impact on student scores on standardized norm referenced achievement tests.

Teacher Training

The concept of andragogy, conceived by Knowles (1970), forms the underlying principles for adult education teacher training programs. Knowles' concepts regarding andragogy suggested that the teaching processes for the adult learner have as their foundation a consideration of the developmental stages of adult life that include past experiences, present responsibilities, and current and future needs. Given the aforementioned considerations, the adult education teacher becomes a facilitator of learning who possesses knowledge of the learning process, of the materials, of the subject matters, and of the adult students' goals, dreams, aspirations, needs and motivations (Ulmer & Dinnan, 1981).

The creation of an infrastructure for the upgrading of the skills of adult literacy professionals is one solution to the problems faced by literacy programs in this country (Foster, 1988; 1990). Historically, adult education programs have been staffed by volunteers or moonlighting teachers, and not adult educators whose primary job is teaching adults (Lewis, 1989). In the array of literacy programs operating today, there is no agreement on what constitutes adequate

training. Because of the difficulty in finding teachers, coupled with the lack of formal training requirements in most states, program managers settle for either demonstrated teaching skills or an expression of concern or caring as the operational prerequisites. These conditions point to the teachers need to receive training in how to most effectively use curricular materials, how to engage their students in learning activities and how to assist them when they need special help. It must be stressed that the success of any instructional strategy greatly depends on the skill of the instructor and the receptibility of the students. Encouraging and equipping teachers to adopt a different approach to instruction must be supported by Adult Education administrators.

The implementation of teachers trained in the use of Direct Instruction and Precision Teaching can provide the creative environment that is missing in adult education classrooms. Dramatic gains from the successful combination of DI and PT are currently being achieved at Malcolm X College, Chicago Illinois with adults gaining two years per skill per 20 to 30 contact hours of instruction per skill. Also, the participants at the Metrocenter Comprehensive Youth Employment and Training Program in Seattle, Washington, obtained similar gains with their adult learners.

Purpose of the Study

The relationship between direct instruction and precision teaching is beginning to take a new dimension in our schools. High levels of dropout rates are becoming an increasing concern among school administrators, creating a need to examine selected factors that may influence unusual dropout rates. This

type of research is important if school districts are to function at maximum potential in educating adults who have dropped out of school. This research investigated the relationship between direct instruction and precision teaching and the influence of professional experiences and personal characteristics. This study determined the effects of a particular teaching method on the academic achievement and persistence rates of adult learners.

Research Questions

This research project answered the following questions:

1. Is there a difference in the academic skill levels as measured by the Test of Adult Basic Education (TABE) of young adults participating in the Youthbuild program receiving DT and PT as compared to Detroit Public School (DPS) Adult Education students not receiving DT and PT instruction?
2. Is there a change in the reading skills as measured by the TABE of young adults participating in the Youthbuild program receiving DT and PT as compared to (DPS) students not receiving DT and PT instruction?
3. What is the relationship between achievement and persistence for this sample of adult learners for the two groups?
4. What is the relationship between the change in academic skill levels of young adults participating in the Youthbuild program receiving DT and PT as compared to (DPS) Adult Education students not receiving DT and PT instruction when selected demographic variables, including age, gender, highest grade completed, and attendance are considered?

Significance of the Study

The need for combined strategies to rapidly establish the basic skills required for success in school on the job cannot be overstated. Neither the students, nor the community can afford a long period of remedial or

developmental education. Hence, the emphasis in this project is on educational technologies shown to work not only effectively, but quickly.

By combining Direct Instruction and Precision Teaching an extraordinarily effective educational strategy can provide educational success to adult learners. If the goal of developing a literate society is to be realized, it is paramount that alternative instructional strategies are investigated and implemented.

Assumptions

The following assumptions are made for this study:

- Students who participate in the Youthbuild program are interested in receiving career training at the time of they apply to the program.
- DI and PT are instructional strategies that teachers in the Youthbuild program use to provide instruction to young adult learners.
- Tests of Adult Basic Education provide accurate measurements of student outcomes before and following instruction.

Limitations

The present study acknowledges the following limitations:

- The Youthbuild program is open only to former students living in the City of Detroit. As a result, the findings may not be generalized to students and young adults in other programs of this type operating outside of Detroit.
- The participants of Youthbuild and students in Adult Basic Education programs must be over 18 years of age. Therefore, the findings cannot be generalized to students under 18 years of age.

Definition of Terms

Adult Basic Education (ABE)

The title given programming designed for students who are assessed at grade levels of 7.9 or lower in the basic academic skills on the Test of Adult Basic Education

	(TABE).
Adult Secondary Education (ASE)	The title given the programming designed for students assessed at grade levels 8.0 or higher in the basic academic skills on the Test of Adult Basic Education (TABE).
Andragogy	The study of the adult learner and adult learning theory.
Locus of Control	Power that when internalized generates self-regulation and self-direction of personal learning.
Persistence	The determination to complete a program successfully. For the purpose of this study, persistence is measured by attendance in the Youthbuild Program.
Scaffolding	Is temporary support provided by the teacher to a student to help bridge the gap between his/her current understanding and the desired learning goal.
Student	A person who volunteers for the Youthbuild program. This person must be at least 18 years of age, a resident of Detroit, and unemployed or underemployed.

CHAPTER II

REVIEW OF THE LITERATURE

Research involving the effects of direct instruction (DI) and precision teaching (PT) on adult students is scarce. Although numerous research studies have been conducted with preschool, elementary, secondary, special education students and adults, few studies have examined the interrelationship of DI and PT on adult learners achievement and persistence. This is the result of a number of factors: lack of DI and PT use in adult education programs and the lack of research on the relationship of achievement to learner characteristics. Therefore, this study is proceeding in unexplored areas.

The review of related literature, based upon ERIC documents, books, research journal articles and dissertation abstracts, is reported in the following manner: a) direct instruction; b) precision teaching; and c) role of the teacher.

Overview of DI Educational Programs

An accurate assessment of the extent DI is utilized in adult education programs is difficult to establish. DI was developed and initiated by Siegfried Engleman and Carl Bereiter at the University of Illinois in 1964 and published by Science Research Associates (SRA) in 1967 (Huyadic, 1978). The program was designed to provide beginning and remedial reading instruction to preschool and primary children who have traditionally had difficulty learning from other reading materials. At that time, the approach was reference to as direct-verbal instruction, which was described in the book *Teaching Disadvantage Children in the Preschool* by Bereiter and Englemann (1966). More than 60 direct instructional programs subsequently were developed by Engleman and his

colleagues. The first series were reading and arithmetic programs (1968-1969) carried the name DISTAR, and acronym that stood for Direct Instruction System for Teaching Arithmetic and Reading (Adams & Engleman, 1996).

In his early work, Engelmann conducted various studies that challenged dogma about how much students could learn and what sorts of teaching led to specific achievements of students. These studies included:

- teaching preschool advantaged and disadvantaged students to read (Bereiter & Engelmann, 1966).
- teaching both disadvantaged and advantaged preschoolers formal operations (as described by Piaget) before expected developmental phases (Engelmann, 1967d).
- teaching sophisticated mathematical problem-solving procedures to disadvantaged preschoolers (Engelmann, 1970).
- teaching both hearing and deaf subjects to hear through tactual vibration (Engelmann & Rosv, 1975).
- teaching absolute pitch to preschoolers and school-age students (Williams & Engelmann, 1989).
- teaching a variety of behaviorally disordered students and adults (autistic, highly non-compliant, etc.) (Engelmann & Colvin, 1983).
- teaching older remedial students sophisticated math, language, and reasoning skills (Engelmann & Carnine, 1991).

Over 50 well-designed research studies on DI have documented the various details of program design and sequencing of skills. Much of this research occurred in the late 1970s and early 1980s and was used to validate some of the principles and arguments presented in the book, Theory of Instruction (Engelmann & Carnine, 1991).

The history of using DI in primary and secondary grades dates back to the mid 1960s. One of the most expensive educational experiments ever conducted

was Project Follow Through. This federal program, was originally designed to be a serviced oriented project similar to Head Start. However, because of the funding obstacles, the emphasis was shifted from service to program evaluation during the early years (1961-1976). Over 10,000 low income students in 180 communities were involved in this \$500,000 million dollar project designed to evaluate difficult approaches to educating economically disadvantaged students kindergarten through grade 3. The Follow Through findings showed conclusively that the DI model was much more successful than a variety of other models at teaching disadvantaged children in grades k-3 read, spell, work arithmetic and think (Tarver, 1994). Also the DI model had, by far, the highest basic skills scores (Adams & Engleman, 1996). Critics have often complained that the DI model discouraged children from freely expressing themselves and this inhibited the development of self esteem (Stebbins, 1977). Although a group funded by the Ford Foundation (House, Class, McClean & Walker, 1978) questioned certain information about the test selection and data analysis in the Stebbins report, the results consistently showed the DI model was superior on all variables.

One of the interesting long term follow-up studies was conducted by Linda Meyer (1984). She tracked students from two schools in Brooklyn, New York. This district was one of the lowest performing of the 32 New York City school districts. The 15 elementary schools in District 23 had an average rank of 519th out of 630 elementary schools. Public school 137 was the only DI Follow Through sites in school district. Meyer selected a comparison school that matched the DI school on many variables. Over 90% of the students were either

African-American or Hispanic and approximately 75% were low income families. Meyer retrieved the rosters of the first three cohort groups (1969, 1970, and 1971) and included students who received either three or four years of DI. With the cooperation of the New York City Board of Education, Meyer was able to locate 82% of former DI students and 76% of the New York City Board of Education, Meyer was able to located 82% of former DI students and 75% of the comparison students. Specific information gathered included high school graduation dates, ninth grade reading and math scores and application to and accepted by colleges. Data analysis revealed that:

- Over held of the Follow Through students finished high school compared to just over a third of the control students.
- Follow Through students dropped out significantly less than did the control students in two of the three cohort groups.
- More Follow Through students applied for and were accepted by colleges.
- A comparison of the subjects ninth grade performance indicated that Follow Through students were on average one year above the comparison group.

Precision Teaching

Precision teaching was developed by 1965 by Lindsley at the University of Kansas. Precision teaching is a method of measuring student performance regularly and frequently and using an analysis of the measurements to suggest instructional and motivational strategies capable of correcting failures to learn. Using precision teaching procedures, educators become students "of the pupils behavior, carefully analyzing how the behavior changes from day to day and adjusting the instructional plan as necessary to facilitate continued learning."

Precision teaching is not so much a method of instruction as it is a precise and systematic method of evaluating instructional tactics and curricula.

According to Lindsley (1991), the fundamental principles embrace the following concepts. There are seven basic elements included in precision teaching. These seven elements include:

1. The principle that student knows best – which instruction has been effective.
2. Daily performance assessment.
3. The use of rate of response (i.e., number of correct answers per minute).
4. Standard chart that can be used to study performance patterns.
5. The use of descriptive and functional definitions of behavior and processes.
6. On going analytical investigations of the impact of teaching tactics on student learning.
7. An emphasis on building appropriate and useful behavior.

Depending on what grade level he/she teachers, a teacher may deal with anywhere from around 30 to 120 students per day. It would be impossible for the teacher to keep track of each and every student's progress without keeping some sort of record. Also, the teacher may have a tendency to overlook the quiet students and pay more attention to those students who command/demand attention, or the teacher might be noticing illusory progress or lack of progress. Precision teaching provides the teachers with a more exact, realistic measure of each student's progress.

Precision teaching techniques require students to chart their progress daily and teachers use the data to make instructional decisions, provides

motivation and prompts changes in the instructional program. PT charts indicate a pupils correct performance, rate of learning and aims. From this information future performance can be projected a decision to continue or change instructional tactics to meet or beat an aim is possible during intervention, rather than after a unit is completed. Pupils are motivated by viewing their own charts. Pupils charting their own performance appear more dedicated to the teacher methodology. The ownership in their own learning comes from viewing and discussing their data. Lindsley reports, pupils self charting daily improvement and teachers' viewing the charts at least weekly, have a decided learning improvement advantage over classrooms and programs that do not (1990).

Precision Teaching is not an approach; it is an easy inexpensive system of monitoring daily improvement -- not performance. Precision teaching tools are designed to improve and refine current teaching methods and materials. Precision teaching simply adds a more precise measurement instrument to enhance learning (Lindsley, 1971).

Role of the Teacher

Educational literature consistently affirms the pivotal role of the teacher in effecting positive change in student attitudes and, subsequently, in student achievement. Rogers (1969) notes that the helping relationship of the teacher leads to increased self-direction in the student. He defines the teacher as the facilitator of learning, whose realness, nonpossessive caring, trust, empathic understanding, sensitive and accurate listening provide the proper environment for learning.

In the same vein, Tough (1979) describes the teacher-helper as

approving, supportive, encouraging, and friendly. The learner is seen as an equal with the teacher; the learning process is reciprocal (Main, 1979). The teacher, however, models for the student the characteristics of a learner: open, interested in new experiences, interactive, and willing to change.

Knowles (1990) draw upon these theorists in his conception of the andragogical teacher who sets the conditions for learning (i.e., an environment characterized by physical comfort, mutual trust and respect, mutual helpfulness, freedom of expression and acceptance of differences. Throughout the learning process Knowles positions the teacher as the caring, supportive facilitator of effective learning situations. The teacher constructs learning experiences that help the adult student discover and explore her/his own reality and consequently grow in self-directed, independent thinking.

Beder (1989) in his studies on dropouts notes that loners leave school because of a lack of teacher attention. Phelan, Davidson, and Cao (1992) record that low achievers look to teachers for reinforcement in the attempt to express ideas, thoughts and feelings. They state that teachers who demonstrate care win the cooperation of their students in the learning experience.

Criner (1990) explained that the less than five percent participation rate of eligible adults in literacy programs is due to the inability of teachers to improve student self-esteem. The low self-esteem of students who have dropped out is an unrelenting barrier to learning. Criner observes that since teachers influence the tone of the learning environment more than any other one factor, they must convincingly convey the belief that their students can achieve.

According to Pratt (1992), what is learned is determined as much by

teacher beliefs as by the learning activities themselves. Teacher attitude and expectation about the learning activities themselves. Teacher attitude and expectation about the capacity of the learner is as powerful a determinant for many adults as it is for children.

The committed teacher provides the temporary support, the emotional and at times cognitive 'scaffold', which enables a student to bridge the gap between current skill development and desired outcomes. Through modeling, thinking aloud, demonstrations, suggestions, guided practice, the skilled teacher shows the learner how to move from one point of skill development to another, always guiding with care and sensitivity to the learner's interests and abilities (Rosenshine & Guenther, 1992).

Teacher scaffolding is intended to help the learner grow in self-direction. Knowles (1975) defines self-direction as a process in which individuals take initiative, with or without the help of others, in diagnosing learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes. Craig (1992) notes that often a person raised in a poor and/or an abusive environment is unable to establish self-direction, to establish her/himself as the "locus of control".

Biermiller and Meichenbaum (1992) cited one source of difference between higher and lower achievers: the degree to which the learner becomes the self-regulator of her/his own learning. Smith (1990), Woodward (1992), and Garrison (1992) indicated successful students must develop self-leadership; they must form an internal locus of control.

In early stages of self-development, the learner leans heavily upon the teacher for direction in the learning process, but through sustained communication with the teacher and experiences of success, the learner strengthens in self-confidence and begins to assume responsibility for his/her own learning (Howard, 1989). The attentive teacher is always watching for the signs of independence, encourages them, and gradually removes the elements of the scaffolding until the learner stands confidently independent (Garrison, 1992; Candy, 1987).

Chicago Public Schools

In the school year 1996-1997, direct instruction and precision teaching methods were implemented in 18 Chicago public schools. Middle schools were targeted. Of the 14 schools for which data was available, 11 showed growth in excess of a one year gain for one year taught, and 1 showed one year gain for one year taught. All eighth grades for which data were available showed a substantial increase in the number of students meeting promotion requirements. These students must achieve a minimum of a 7.0 grade level equivalent on the Iowa Test of Basic Skills if they were to be promoted to high school. For a student to be at grade level, the student must consistently gain one year for each year taught, year after year. Once a student falls below grade level for any particular year, that student will remain below grade level unless there is a gain in excess of one year for one year taught. Cumulative deficits require subsequent cumulative gains. A two-year growth is required because one year simply keeps the student from falling further behind. Only growth beyond one year contributes to catching a student up to grade level.

In the John Murir Elementary School, Seattle Washington, California Tests of Basic Skills (CTBS), fourth grade scores after five months of direct instruction and precision teaching improved substantially. Table 1 presents the improvements from 1996 to 1997 noted for these students.

Table 1

John Murir Elementary School Test Scores

School Year	Reading	Language	Math	Total Battery
1996	3.6	3.5	2.8	3.7
1997	4.4	4.3	4.2	4.3
Improvement	+ .8	+ .8	+ .4	+ .6

School to Work

Passage of the 1994 School-to-Work Opportunities Act represents an initiative by the federal government to focus on two of the country's top priorities: making America more competitive in the global marketplace and offering non-college bound students an opportunity to be productive members of society. Both the Administration and Congress are currently taking steps to refine and consolidate federally-sponsored job training programs so that states can have more flexibility in administering them. The heightened interest in school-to-work transition comes in the wake of the widely disseminated 1991 report, "What Work Requires of Schools," from the Secretary of Labor's Commission on Achieving Necessary Skills (SCANS).

What followed was considerable study on how to best prepare young

people for academic and occupational advancement. From now through the year 2005, forecasters predict that the United States will graduate 30% more college graduates than there are college level jobs and 78% of all jobs will not require a college degree. Despite this, the American educational system does a good job of preparing young people to go to college, but regularly fails to prepare the estimated 60 to 70% of high school graduates who do not continue their education beyond high school (Kennedy, 1992).

Concerns over foreign economic competition, both in terms of quality products and inexpensive labor, triggered this comprehensive analysis of how America traditionally prepares its labor force and what can be done to improve it. According to United States 1998 Labor Department figures, a journeyman machinist with two years of vocational classes and two to three years of on-the-job training can earn \$41,000 a year, \$10,000 more than the average earnings of a 26-year-old with a bachelor's degree. One key finding was that it is not the amount of time high school students spend at jobs as much as it is the quality of their experiences that affects their attitudes toward work (Stamps, 1998).

The Goals 2000: Educate America Act provided a framework for school-to-work opportunities. This framework required the system to be standards-driven and established a process for setting work-class academic and occupational standards for students in these programs.

Youth apprenticeship is one of several school-to-work transition systems that have been successful in districts throughout the region and the country. Other approaches include tech prep, career academies, co-op programs, and

vocational/technical centers. All are worthy of exploration by districts beginning to incorporate a school-to-work program in their curricula.

The School-to-Work Opportunities Act of 1994 United States House of Representatives Conference report indicated that:

1. three-fourths of high school students in the United States enter the workforce without baccalaureate degrees, and many do not possess the academic and entry-level occupational skills necessary to succeed in the changing United States workplace;
2. a substantial number of youths in the United States, especially disadvantaged students, students of diverse racial, ethnic, and cultural backgrounds, and students with disabilities, do not complete high school;
3. unemployment among youths in the United States is intolerably high, and earnings of high school graduates have been falling relative to earnings of individuals with more education;
4. the workplace in the United States is changing in response to heightened international competition and new technologies, and such forces, which are ultimately beneficial to the Nation, are shrinking the demand for and undermining the earning power of unskilled labor;
5. the United States lacks a comprehensive and coherent system to help its youths acquire the knowledge, skills, abilities, and information about and access to the labor market necessary to make an effective transition from school to career-oriented work or to further education and training;
6. students in the United States can achieve high academic and occupational standards, and many learn better and retain more when the students learn in context, rather than in the abstract;
7. while many students in the United States have part-time jobs, there is infrequent linkage between
 - A. such jobs and
 - B. the career planning or exploration, or the school-based learning, of such students;
8. the work-based learning approach, which is modeled after the time-

honored apprenticeship concept, integrates theoretical instruction with structured on-the-job training, and this approach, combined with school-based learning, can be very effective in engaging student interest, enhancing skill acquisition, developing positive work attitudes, and preparing youths for high-skill, high-wage careers;

9. Federal resources currently fund a series of categorical, work-related education and training programs, many of which serve disadvantaged youths, that are not administered as a coherent whole; and
- 10 in 1992 approximately 3,400,000 individuals in the United States age 16 through 24 had not completed high school and were not currently enrolled in school, a number representing approximately 11 percent of all individuals in this age group, which indicates that these young persons are particularly unprepared for the demands of a 21st century workforce.

The Act does not call for a national system of youth apprenticeships, but rather fosters continued experimentation, principally by states, with programs that link schools and the workplace more effectively. The purposes of this Act as outlined in the United States House of Representatives Conference Report are:

1. to establish a national framework within which all States can create statewide School-to-Work Opportunities systems that –
 - A. are a part of comprehensive education reform;
 - B. are integrated with the systems developed under the Goals 2000: Educate America Act and the National Skill Standards Act of 1994; and
 - C. offer opportunities for all students to participate in a performance-based education and training program that will –
 - i enable the students to earn portable credentials;
 - ii prepare the students for first jobs in high-skill, high-wage careers; and
 - iii increase their opportunities for further education, including education in a 4-year college or university;
2. to facilitate the creation of a universal, high-quality school-to-work transition system that enables youths in the United States to identify

and navigate paths to productive and progressively more rewarding roles in the workplace;

3. to utilize workplaces as active learning environments in the educational process by making employers joint partners with educators in providing opportunities for all students to participate in high-quality, work-based learning experiences;
4. to use Federal funds under this Act as venture capital, to underwrite the initial costs of planning and establishing statewide School-to-Work Opportunities systems that will be maintained with other Federal, State, and local resources;
5. to promote the formation of local partnerships that are dedicated to linking the worlds of school and work among secondary schools and postsecondary educational institutions, private and public employers, labor organizations, government, community-based organizations, parents, students, State educational agencies, local educational agencies, and training and human service agencies;
6. to promote the formation of local partnerships between elementary schools and secondary schools (including middle schools) and local businesses as an investment in future workplace productivity and competitiveness;
7. to help all students attain high academic and occupational standards;
8. to build on and advance a range of promising school-to-work activities, such as tech-prep education, career academies, school-to-apprenticeship programs, cooperative education, youth apprenticeship, school-sponsored enterprises, business-education compacts, and promising strategies that assist school dropouts, that can be developed into programs funded under this Act;
9. to improve the knowledge and skills of youths by integrating academic and occupational learning, integrating school-based and work-based learning, and building effective linkages between secondary and postsecondary education;
10. to encourage the development and implementation of programs that will require paid high-quality, work-based learning experiences;
11. to motivate all youths, including low-achieving youths, school dropouts, and youths with disabilities, to stay in or return to school or a classroom setting and strive to succeed, by providing enriched learning experiences and assistance in obtaining good jobs and continuing their education in postsecondary educational institutions;

12. to expose students to a broad array of career opportunities, and facilitate the selection of career majors, based on individual interests, goals, strengths, and abilities;
13. to increase opportunities for minorities, women, and individuals with disabilities, by enabling individuals to prepare for careers that are not traditional for their race, gender, or disability; and
14. to further the National Education Goals set forth in title I of the Goals 2000: Educate America Act.

Successful school- to-work activities are the result of collaboration between schools, postsecondary institutions, employers, organized labor and other community representatives. These entities work together in a local partnership to supply guidance and expertise on the content and provision of the school-to-work system. The wholehearted, committed involvement of a variety of entities in the local partnership enhances the ability of the school-to-work opportunities system to provide a broad range of services to all students. According to the 1996 report Work-Based Learning New York State Department of Education, in order to offer equal access to educational services including school-to-work, schools must be prepared to reach out to:

- disadvantaged students
- students with diverse racial, ethnic, or cultural backgrounds
- Native Americans
- students with disabilities
- students with limited English proficiency
- migrant children
- former students who dropped out of school
- academically talented students
- adult learners

Types of School-to-Work Transition Programs

By definition, a school-to-work transition program links employers and schools in some manner. It seems that the more successfully a program integrates academic and vocational learning, school-based and work-based learning experiences, and secondary and post-secondary learning opportunities, the better the chance its students will improve their skills, find jobs, and keep open their options for post-secondary education.

Results from school-to-work transition programs indicate that students' attitudes toward school and work improve with better attendance rates and a greater understanding of the connection between school and work (Shelley, 1992)

Youth Apprenticeships

Patterned after the U.S. Department of Labor's established apprenticeship program that serves adults (generally in the construction and metal working trades), youth apprenticeships are designed to expose students to work day and workplace experiences while in high school. Programs generally focus on training students for technician level jobs that require more than a high school diploma (Kennedy, 1992). Structured learning experiences in the workplace are required as well as the highest degree of business involvement. Employers play a central role in designing and running youth apprenticeships (301).

Youth apprenticeship programs are typically:

- offered in junior and senior year involving some aspect of a paid workplace experience.
- characterized by changes in state, district, or local policies regarding such things as the number of classroom periods in a particular day, the number of minutes in a classroom period, district-provided

transportation regulations, or the use of non-certified personnel for technical instruction.

- characterized by involvement of employers, and occasionally labor and management groups, in organizing the program, revising curricula, evaluating students, mentoring on job sites, helping to develop work attitudes, and instructing in the classroom.
- improved by integration of academic and vocational education.
- scheduled flexibly.
- enhanced by strong links with post-secondary education programs.
- characterized by assignments of a staff person to coordinate the program's implementation and to facilitate among students, parents, employers, secondary schools, and post-secondary schools.

Students generally emerge from a youth apprenticeship program with several certificates, including a high school diploma and an industry certificate of mastery. Many programs include a continuing education component at a community or technical college. Some employers guarantee students a job when they complete the youth apprenticeship program, while others can only offer priority hiring. Chrysler Corporation has assisted North Lake High School, St. Clair Shores, Michigan with the creation of their manufacturing curriculum. This alternative high school for dropouts developed this advanced manufacturing program to give technical experience and possible job placement to the participants. Students receive formal training in several areas of manufacturing including robotics and hydraulics.

Although too soon to gauge the economic impact these programs may have on wages, types of employment found, and labor force participation rates, it is clear that youth apprenticeship programs do the following (Wirth, 1992).

- improve attitudes toward school and work;

- increase attendance;
- help students understand the connection between school and work;
- raise the quality of job placements; and
- drive up student enrollment in college-track math and science courses.

Tech Prep

This school-to-school program, often referred to as “2+2,” links the final two years of high school with two years at the community college level. Typical components include:

- collaboration by teachers in both high schools and community/technical colleges and industry personnel in developing curricula, teaching lessons, and monitoring students both at school and at the worksite.
- careful sequencing of the academic curriculum including advanced math and science courses (and occasionally advanced language and social studies courses) so that students can continue schooling if they so choose.
- adequate occupational training which ensures that students can handle technically demanding employment.
- agreement between both educational levels so that course work is neither repetitive nor redundant.
- two types of certificates given to students upon graduation: a high school diploma and a certificate or diploma from the community/technical college. Students may receive an industry-specific certificate if the tech prep program has a work component.
- an advisory role for the businesses involved.

Tech Prep is the newest and widely discussed program to better prepare students for the changing workplace.” In 1988, findings from a two year study of sixteen to 24 olds, focused national attention on the 20-million noncollege bound young people described by the William T. Grant Foundation as the “Forgotten Half”. These students are also called “The Neglected Majority”(Hull, 1992).

Students are called the “Forgotten Half” and the “Neglected Majority”; because these are the average students in high school (C-average grades) and they are many times forgotten and/or neglected in our present day school systems.

There is no special school academic program for them; they are left on there on to survive after high school. Many students even those enrolled in vocational education programs, graduate from secondary schools without the competencies required to secure an entry level position in a rapidly changing environment or have the flexibility to retrain later as the job market requirements change. The W.T. Grant Foundation stated that, “Those with less education must scramble for good jobs in a sea of part-time, low-paying, limited future employment opportunities” (A Guide to Work-Based Learning, State of Michigan, 1992). Tech Prep focuses on the “Forgotten Half” and the “Neglected Majority,” as well as the “College Prep” students. College prep students are students who are enrolled in advance courses to prepare them for college.

Gifford (1994) defined Tech Prep as a program that merges the last two-years of high school with the first two-years of post-secondary education. Respectively, the content of “Tech Prep” should be a foundation of basic proficiencies developed in math, science, communication, and technology in an applied setting. Students in the Tech Prep program should continue their education leading to an associate degree, a certificate in a career field, or a bachelor’s degree . This model was developing to help people prepare for today’s careers-careers that demand a technical knowledge that was unheard of years ago. It is an effort that involves the coordination of curricula across institutions to ensure that graduates possess the knowledge and skills required

for employment in a chosen occupation.

Tech Prep is an educational initiative that promotes increased cooperation and communication between local educational agencies, post-secondary institution and the workforce, for the purpose of improving the quality of instruction and employment potential of students. Tech Prep is a program that entitles all students the right to a successful future. The programs primary target focuses on students who are enrolled in general and vocational education. It was developed to help students prepare for careers that demand a technical knowledge base. It is an effort that involves the coordination of curriculum across institutions to ensure that graduates posses the knowledge and skills required for employment in a chosen occupation.

Tech Prep was created because forty-percent of high school students across the nation were enrolled in a general education program (Parnell, 1991). This program is unfortunately an unfocused program. General education is considered unfocused, because the program provides no future guidance to the students that are enrolled in the program. Are they prepared to go to college? Do they have a skill or a trade so they can find suitable employment that can provide them with the income to become productive citizens (raise a family, health insurance, etc.)? Tech Prep is targeted for, but not limited to the "general education" high school students.

Tech Prep was also created because community college technical programs needed more than two years to prepare students for advanced technical work. Logic suggested working with secondary technical programs in which students needed a clearer vision of what they could become after high

school (Hemming,1991). Advanced curricula were developed so those students could enter technical institutions or community colleges with more knowledge and skills. The post secondary system would also benefit by offering better opportunities to its students.

The development of a successful Tech Prep program must emphasize the five “Cs”. They are:

- Continuity in learning,
- Context-based teaching (applied academics),
- Competency-based teaching,
- Communication between learning institutions (especially between high school and post-secondary institutions), and
- Completion of the program with an associate degree (Parnell, 1991).

A large amount of federal money is being made available to tech prep programs — they are one of the fastest growing curriculum innovation programs in the United States. Many states are developing tech prep administrative structures that are used as “umbrellas” over other school-to-work transition programs. In the state of Michigan, Kalamazoo Intermediate School’s Education Employment program prepares young people for the workplace and identifying careers with potential for high earnings and advancement that they might have ignored. This K-12 program allows students to choose on the job training and courses at Kalamazoo Community College. The students are given a choice of what career they will pursue, none can opt out of job training. Kalamazoo’s business community actively participates in the program. As part of the program, Kalamazoo’s Hyatt Rgency Hotel provides space for the hospitality curriculum classes, giving students a chance to visit with professionals at the hotel for a

realistic idea of the they are seeking. Also, the Education for Employment is required study for all Kalamazoo County students- college bound or not. The students enroll in 17 job specialties, including theater, autobody and auto mechanics preparation, building trades, health care and manufacturing. Additionally, the program provides participants with crucial lessons in employment basics, such as appropriate dress, behavior, etiquette, and how to work with others.

Co-Op Programs

By far the most common and widespread school-to-work transition program students must have are core vocations courses in a speciality area while working part-time. Co-op programs are typically:

- offered to juniors and/or seniors in high school.
- paid, on-the-job training, employment that follows one or two introductory courses. Course work continues with some type of workplace component throughout the program.
- organized and administrated by school personnel rather than by employers. Employer participation has traditionally been limited to providing some training while the student is in the workplace and providing the school coordinator with an evaluation of the student's performance and skills.
- located in employment settings where co-op students learn new skills, use existing reading and writing skills, and perform meaningful work. They are also often employed in positions related to their desired career.

The school's co-op coordinator works with participating employers to ensure students learn and perform the job tasks required of them. Coordinators are most often vocational education teachers and are generally responsible for recruiting employers; drawing up the contract between the student, school, and employer; making on-site visits to the students' workplaces; and helping students

adjust to the demands and requirements of the adult workplace. Some programs designate a staff member whose sole responsibility is to coordinate the co-ops. In Boston, three high school co-op coordinators set up a health care program with the Private Industry Council and seven hospitals. The program is designed to place noncollege bound youth in the health care industry after completion of high school. Students must show some interest in the health care field, have a C+ average and maintain a 90% attendance record for two quarters. The program offers training in 16 apprenticeships including physical therapy assistant, nuclear medicine assistant, and radiological assistant. Most of the jobs require students to earn certification by enrolling at a community college to complete the program. Apprentices work a minimum of 10 hours a week and earn \$5.50 an hour.

Internships

Like co-op programs, internships generally require students to take some type of pertinent vocational education course while working part-time. On-the-job training and employment — frequently in business and marketing settings — provides workforce linkage. Typical components are:

- a two-year offering open to juniors and seniors in high school.
- a introductory course work occasionally offered interns before their placement in a job. During their tenure, they are exposed to continuing course work with some type of work place component.
- administration by a secondary school with a coordinator to perform many of the same functions as a co-op coordinator. Sometimes, the same person coordinates the co-op and internship programs, and internships are often classified under the co-op umbrella.

Internships are more useful for career exploration than for career development.

Students who cannot schedule co-op courses often opt for internships, which

may or may not pay.

School-Based Enterprises

A school-sponsored activity involving vocational education students, school-based enterprises are actual student-run businesses. Students take individual or sequential courses and offer either goods or services, developing both their occupational and business skills. Profits are either funneled back into the program or used to pay student wages.

School-based enterprises tend to generate products or services that meet community needs and are more prevalent in rural areas. Home construction trades, child care, and retail sales are often feasible school-based enterprises.

Students in such programs seem to have a more positive association with work than do their peers who hold jobs outside school. These students also seem to show improved attitudes about school and work, have better perceptions about the connections between school and work, and exhibit a sense of satisfaction with school. Often, however, a school-based enterprise bears no relation to private sector needs and fails to prepare students for a lifelong profession.

Vocational Technology High Schools/Centers

Vocational technology high schools (where students attend all day) or centers (where students attend part of the day) specialize in hands-on skills-building in an academic setting. A workplace is often a component, and local businesses frequently work closely with these schools and centers through craft, advisory, or business committees.

If the academic and workplace experiences have been positive and

practicable, vocational technology center students can graduate with highly marketable skills in addition to academic qualifications that allows for further education or specialized training.

Career Academies

Career academies are special focus programs in which academic and vocational instructors collaborate around a theme. These can take the form of a "school within a school," but many times career academies involve the entire school. The intent of each academy is to develop one or more concentrated programs in specialized areas; these generally are organized around various career aspirations. Career academy themes include finance, travel and tourism, public health, transportation, electronics, communications, construction, graphic arts, education, and public service. Program components typically include:

- schools setting their own curriculum strategies, such as block scheduling or team teaching, and designation of specific personnel to coordinate curriculum strategies, such as block scheduling or team teaching, and designation of specific personnel to coordinate curriculum changes and scheduling specifics.
- incorporation of flexibility into many aspects of the program. For example, individual teachers may meet regularly with the principal to develop curricula which meet their students' needs.
- sequential courses taken together with the same teachers frequently working with the students over the course of the extended program.
- active involvement from local employers and qualified representatives of the respective career theme. Employers can serve on advisory or steering committees; act as mentors; help develop appropriate curricula; sponsor internships, scholarships, or awards; and even provide teachers with summer jobs related to the school's area of focus.

One program similar to a career academy based on the west side of Detroit, Michigan is Focus Hope. Started in 1968 the program provides math, computer

and machinist training each day to scores of willing but poorly educated city residents. The non-profit organization founded by the late Rev. William Cunningham and Eleanor Josaitis attempts to improve the production and technical skills of inner city residents. Inside a gutted Ford Engine plant a cadre of retired automotive engineers and professors from Michigan engineering colleges turn young recruits into industrial technicians fluent in advanced math, the intricacies of computer- aided design and manufacturing. Rev. Cunningham stated “ the issue here is to provide the tools and discipline and the very best of training and equipment to bring minorities and poor whites into real positions of control”. Rev. Cunningham demanded that the participants come to work on time and be attentive in class. These standards are the reason that the Machinist Training Institute has managed to find jobs for 95% of its graduates. The machinists earn \$10.00 to \$15.00 an hour at small machine shops. Along with the Machinist Training Institute, the program offers high school graduates who lack math skills the opportunity to enroll in the Fast Track course that uses computers and strict classroom discipline to raise the math level of the participants. Focus Hope and many career academies exhibit tremendous gains in student performance and graduation rates. But in some classes the attrition rate has been high, nearly one third of those entering Focus Hope have been dropped for persistent tardiness or absences.

Summary

School-to-work transition programs are generally designed with the “neglected majority” in mind — students who are not going to college. However, with careful planning and a clear understanding of objectives these programs

can be modified and adapted to meet the needs of both special education and at-risk students. The programs may be subsidiaries of larger school-to-work transition programs, or they may operate independently.

Key Components in School-to-Work Transition Programs

Some common strands emerge among school-to-work transition programs. This section refers to those strands as key components essential for a successful school-to-work transition program. Without these key components in place, a program will likely suffer mediocrity, or worse.

Commitment

- Invite all players to the table at the outset.
- Agree on a clear vision of what should be accomplished.
- Delineate each player's duties and responsibilities.
- Meet periodically to discuss new ideas, problems, solutions.
- Monitor progress to ensure follow-through.

Collaboration

- Link school, community, and workplace.
- Promote agreement on goals and objectives.
- Meet business needs.
- Build solidarity.
- Focus on students' best interests.
- Mandate parental approval of their child's participation.

Business Involvement

- Set standards and certify programs.
- Help design curriculum.

- Offer employment opportunities.
- Provide staff development for instructors.
- Donate and purchase equipment.
- Serve on advisory/steering committees.
- Recruit businesses.
- Contribute scholarships and awards.

Training and Development.

Pierce (1998) reported that the implementation of a training and development program should meet the following guidelines

- Appoint a director who can function with a high degree of autonomy and yet maintain a close working relationship with administration.
- Serving the needs and addressing the concerns of staff. It is important to monitor the progress of new training modules.
- Selecting and supporting capable committed staff. Effective staff members are motivated by a desire to help students succeed.
- Utilize the participatory approach to education and the learners professional experience as a resource.

Applied Teaching

The validity of applied teaching ultimately derives from the understanding of a single element: modeling. For an educator it means exemplifying the lessons being taught. There are certain elements that go into the making of a model. Understanding each of these ingredients can help students achieve their educational goals (Henschke, 1998).

- Andragogy is the art and science of helping students learn. Its primary principle is the desire, potential and the ability for self directedness on the part of the learner. Also, that the motivation of adult learners is internal rather than merely external, and learners need a valid reason why they need to learn something to appreciate its importance.

- Attitude is a transforming power and positive force in modeling. An attitude of caring for the learner as a valuable, unique person, and helping the learner to accomplish his or her educational goals is essential for an adult educator.
- Congruence of theory and practice is essential in adult education. If educators apply andragogical principles consistently adult learners will model adult educators actions and follow their directives.
- Trust is the final ingredient of applied teaching. To be effective, an adult educator needs to have trust in the ability and potential of learners to understand right choices.

Real World Experiences

Real World Experience is an important aspect of learning. One of the modifiers of learning, particularly in adults, is a set of preferences referred to as learning style, cognitive style and sometimes even communication style. In general, cognitive/learning styles refer to a person's typical way of thinking, remembering or problem-solving. One's style is usually considered a fixed dimension of one's personality, with a predictable influence on attitudes, values, social interactions and approaches to learning. Theoretically, if you know a person's cognitive style, you can predict what sort of instructional strategies- or self learning techniques- will be most effective with him or her. To date, however, the research on which techniques best match any particular learning style remains sketchy (Zemke, 1998).

Kolb (1983) developed a learning style classification and assessment system that has four discrete modes of learning:

- CE (concrete experiences)
- RO (reflective observation)
- AC (abstract conceptualization)
- AE (active experimentation)

These learning modalities combine to create four styles or types of learners

as listed below. Adult learning experts, generally see systems like Kolb's as helpful aids in coaching individuals to become more effective learners.

- Divergers
- Assimilators
- Convergers
- Accommodators

However, too much concern with one's primary style can become a handicap. A person can use being a visual learner as an excuse for not learning something just because it is not presented in a visual format. Students must be flexible and versatile to be an effective learner (Zemke, 1998).

Welfare To Work

In the fall of 1994, Michigan's Governor John Engler began to implement the state's welfare reform plan through the WORK FIRST initiative. The Michigan Jobs Commission was formed and 33 million dollars was taken from the state's office of Adult Education and reallocated to the Jobs Commission. An administrative decision was made based on the reallocation of Adult Education monies, to pursue ways to bring some of those dollars back to Detroit Public Schools (DPS) Office of Adult Education.

At this time the City of Detroit, Employment and Training Division (E&T) was designated by the Job Commission to be the entity responsible for distributing those dollars through-out the City of Detroit. When the City of Detroit released a Request For Proposal (RFP), (DPS) Adult Education submitted several proposals. The primary purpose of the RFP was to develop programs

that would assist Aid to Dependent Children (ADC) recipients in securing unsubsidized employment and basic skills training. Detroit Public Schools office of Adult Education submitted proposals in both areas. Subsequently, DPS Adult Education was awarded a WORK FIRST contract to deliver job search, basic skills and life skills training to welfare recipients.

A new partnership was launched between the City of Detroit, (E & T), Family Independence Agency (F.I.A.) formerly the Department of Social Services (DSS), the Michigan Jobs Commission and (DPS) Office of Adult Education. In this collaborative effort, a pool of teachers with experience in providing employability skills training, working with business owners and developing quality programs for Adult Education students implemented the WORK FIRST Job Search Program at Higginbotham and Franklin Adult Education centers. In 1995 both sites serviced over 900 referrals from the City of Detroit (E & T) and (FIA). Of those 900 welfare recipients 345 gained employment, and many others were referred to educational or training programs provided by the City of Detroit (see chart). The Jobs Commission recognized the success (DPS) Adult Education experienced in the first year of the WORK FIRST partnership.

A second contract was awarded in the fall of 1995. During the second year, WORK FIRST serviced over 1,100 welfare recipients and placed 420 in unsubsidized employment. This exceeded the expectations of state officials. The Jobs Commission has extended the DPS Adult Education WORK FIRST program indefinitely.

Description of Services Provided

Detroit Public Schools' WORK FIRST is a Job Search/Self-Directed Placement Program which consists of structured guided employability skills training and work related activities to assist WORK FIRST welfare recipients in seeking and securing unsubsidized employment. The Job Club Component is divided into four training modules. The extensive Job Search curriculum is especially designed for WORK FIRST students. The first module concentrates on developing job seeking tools and skills to enhance marketability to potential employers. The second, third and fourth modules consist of intense job search activities and direct employer contact.

The primary objective of the WORK FIRST Job Club Component is to provide guided structured job search activities for WORK FIRST customers, by assisting them in obtaining unsubsidized employment in the least amount of time and most efficient way possible. The following services are provided to the WORK FIRST students:

- Coordinating Family Independence Agency (FIA) Services
- Pre-Employment Computer Skills
- Pre-Employment GED Training
- Pre-Employment Volunteer
- Student Progress Reports
- Inputting/Up-Dating WORK FIRST Employment Reports
- 90 Day Employment Verifications

Significance to the Contractor

The (DPS) Adult Education WORK FIRST initiative is a highly successful program and now has become a valuable resource to the City of Detroit ,and has received positive recognition from the Michigan Jobs Commission. In this partnership, many of (DPS) Adult Education program activities and training modules have been used as models for (FIA) and other welfare- to-work locations.

Significance of Program to Detroit Public Schools

The population targeted for the WORK FIRST program is residents of the City of Detroit who receive services provided by (FIA), appropriately 30,000 persons. Most of the targeted population are single parents and female heads of household, many of their children attend Detroit Public Schools, K-12 program. In the contract year 1998-1999 the WORK FIRST program concentrated on servicing the two-parent family, which will include more male participants than in previous years. Table 2 presents characteristics of participants in the WORK FIRST program for the 1995-1996 school year.

Table 2

Work First Program Characteristics
Detroit Public Schools – 1995-1996

Demographic Groups	Total Parts
Total	346
Sex Group	
Male	21
Female	325
Age Group	
17-21	53
22-29	151
30-54	139
55 +	3
Race/ethnic Group	
White	17
Black	323
Hispanic	1
American Ind/Alaskan	1
Asian/Pacific Islander	1
Unknown	3
Education	
Highest Grade Below 12	218
Highest Grade 12 TH	90
Highest Grade 12 +	38
Average Wage	\$6.59
Average Hours	32

In January 1998, U.S. Labor Secretary Alexis M. Herman announced that five states were approved for Welfare to Work grants totaling 2.2 billion. Illinois, Louisiana, Michigan, Nebraska, and Nevada are to use the funds to develop subsidized and unsubsidized work opportunities; training to improve employment marketability; and post-employment retention and support services. The State of Michigan was provided with \$42,226,331 in federal funds and the state gave approximately \$21 million to the program. The Michigan Jobs Commission is the State Agency that administers the program (Jossi, 1998).

Genuine Change

This change in social policy is genuine, vast, and significant; and the business community stands at the crossroads. During the next five years, long term, welfare recipients will seek to break the cycle of welfare dependency and re-enter the workforce. As employers are approached by job seekers and organizations seeking work opportunities for those recipients, they can chose to participate and benefit in a number of ways.

A Smart Solution For Business

Employers can leverage these real changes in social policy to maximize potential to their company. This can be a positive net effect on the bottom line in the following ways:

- The company can access a pool of potential candidates without incurring expenses for advertising, screening new hires, or paying wages for the first six months of employment.
- Implementing a Welfare-to-Work program demonstrates the company commitment to the community. This can build a sense of pride and service among employees.
- The company can help improve the local economy by shrinking community dependence on public assistance while creating spending capital for products and services.

Hiring Incentives

Employer Wage Subsidies:

- Wages subsidized for the first six months of employment
- Payroll processed and checks distributed by outside contract

Welfare To Work Tax Credit:

- Federal Income Tax Credit encourages hiring of long-term Welfare Recipients anytime after 12/31/97 and before 5/1/99
- Can reduce employer federal tax liability by as much as \$8,500 per

new hire

Reduced Expenses For Screening New Hires:

- Drug screening and physicals tailored to employer selection process
- Assessment and career match profiles
- Police clearance (if requested)

Reduce Expenses For Training/Development

- Training classes funded for new hire
- Training is a requirement of the program

According to the U.S. Department of Health and Human Services and the Urban Institute welfare is not a long term way of life:

- 42% of families receive welfare benefits for less than two years
- 70% of welfare recipients have work experience
- The challenge for most recipients is not getting a job; it is keeping a job.

Profile of Welfare Recipients:

- Over 90% of welfare parents are single mothers
- Typical welfare family is a single mother with two children
- Welfare recipients are evenly represented in all ethnic groups
 - 37% African-American
 - 36% Caucasian
 - 21% Hispanic
- Welfare recipients have varied skills and levels of education
 - 42% are high school dropouts
 - 42% are high school graduates or have a GED
 - 16% have some post-secondary education

The Detroit Self-Employment Project (DSEP) is a program aimed at turning welfare recipients into entrepreneurs. The 11-week course administered by the Wayne State University School of Business Administration under a

cooperative agreement with the Michigan Family Independence Agency (FIA). Is held in Detroit, MI. The list of graduates included owners of transcription services, catering businesses and janitorial services. Some graduates are also cosmetologist, masseuses and day care owners are the array of new business owners. Each received special waivers granted by FIA allowing them to continue to receive welfare benefits as their businesses got off the ground. Anyone in Detroit, Highland Park, or Hamtramck Michigan who receives aid to families with dependent children (ADC) is eligible. Training is provided via courses, workshops, conferences and problem solving clinics. Participants receive computer training that includes word processing and financial management. Expectations are high for trainees, no more than three absences are allowed and none in the first two weeks.

Despite the challenges involved in hiring welfare recipients, more companies appear to be willing to take the risk. Business is not interested in getting welfare recipients off the government payrolls because it may be a good thing for society. The employment of welfare recipients expands the pool of workers and companies have hired some surprisingly good candidates for low-skilled and clerical positions. In a rare display of symmetry between government policy and market conditions, the U.S. Congress transformed welfare at a time when hiring the hard-to employ was a good business decision.

Training programs for welfare recipients have a spotty record. The programs have been lambasted for not emphasizing work more strongly than education and training. Before any real skills training, most welfare recipients must learn "life skills." Most are single, poor women, or teenage parents. Many

have suffered poor schooling, not to mention physical or emotional abuse, and drug addiction. They know little about the demands of the workplace- why they should be expected to call when sick or come to work on time. Also, some state welfare programs in the past have shuffled clients into training, GED classes, and other educational programs without ever seeing them get jobs. Yet a June 1995 report on the federal governments Job Opportunities and Basic Skills Training (JOBS) Program by the Manpower Demonstration Research Corp, concluded that nearly every employer who has successfully hired welfare recipients has placed them through extensive on-site training or hired them after the government first provided workplace orientation and job skills training (Jossi, 1998). Table 3 presents the results of a 1997 survey of 800 businesses by Training magazine on remedial training.

Table 3
Remedial Training by Organizational Size

Number of Employees	% of Organizations Sponsoring Basic Education
All Sizes (100 or more employees)	
100-499	17
500-999	14
1000-2,499	24
2500-9,999	33
10,000 or More	36
Types of Remedial Training Provided	
Reading	40
Basic Math	50
English as a Second Language	51
Writing	52

In summary it appears businesses are committed to basic skills training as a method to improve the productivity and expand the pool of qualified workers.

Business owners should research instructional methodologies which quickly increase the achievement level and attendance rates of new employees thereby reducing training cost.

CHAPTER III

METHODOLOGY

This chapter presents the methodology that was used to collect and analyze the data needed to test the hypotheses and answer the research questions posed for this study. This discussion includes the research design, variables in the study, research hypotheses, setting for the study, population, sample selection process, instrumentation, data collection methods and data analysis. Each of these sections is discussed separately.

Research Design

The study was conducted using a pretest-posttest comparison group design. All subjects were tested twice on the same instrument (a within subjects design). The independent variable is the instructional treatment. The dependent variables are the performance on the reading portion of the TABE and their persistence rates, as well as drop out rates. This study attempted to determine if a relationship existed between direct instruction and precision teaching methods on the academic achievement and persistence rates among adult learners. In addition, the relationship of personal and professional demographics with both teaching methods also were explored to determine if these variables were contributing to adult learners success in the program.

Variables in the Study

Two dependent variables were examined in this study: reading as measured by the TABE and persistence rates as measured by the attendance. The independent variables that were measured in this study included the

instructional treatment, gender, age, and educational level.

Hypotheses

These variables were used to address the following hypotheses:

- H₀₁: There is no difference in post treatment reading skills as measured by the TABE of young adults participating in the Youthbuild program receiving DT and PT as compared to (DPS) students not receiving DT and PT instruction.
- H₀₂: There is a change in the reading skills as measured by the TABE of young adults participating in the Youthbuild program receiving DT and PT as compared to (DPS) students not receiving DT and PT instruction?
- H₀₃: There is no relationship between achievement and persistence for this sample of adult learners for the two groups.
- H₀₄: There is no relationship between the change in academic skill levels of young adults participating in the Youthbuild program receiving DT and PT as compared to (DPS) Adult Education students not receiving DT and PT instruction when selected demographic variables, including age, gender, highest grade completed, and attendance are considered?

Setting for the Study

Adult education schools in the Detroit School System were used in this study and the Youthbuild center. The Youthbuild program is a federally funded 12 month program designed for disadvantaged youth who are between 18 and 24 years of age. These youth have expressed an interest in rebuilding their communities. Students attend academic classes for half the program time, mastering basic skills in preparation for their general education development (GED) certificate and are trained in construction skills for the remaining portion of the program. They receive a stipend during their training and they can earn additional money through incentives that include 100% attendance in both the

academic and construction training programs.

The program has completed three phases, graduating more than 100 students. These students met all graduation requirements, including passing a drug screen, obtaining a GED, and having at least a 90% attendance record. Completers of the program, while not all working in construction, are either gainfully employed, serving in the Armed Forces, or attending college.

Population

The population defined for this study included young adults in the Youthbuild program and Detroit Public Schools Adult Education students. Approximately 50 trainees received direct instruction (DI) and precision teaching (PT) instruction. Most of these young adults are African American males. Therefore, racial and gender analyses may not be possible in this study.

The program is comprehensive. It works well for young men and women who have dropped out of high school, giving them a chance to play a profoundly useful and respected life in their communities. The program consists of the following distinct components:

- Work site training on a closely supervised construction site.
- Cognitive skill development aimed at preparing students for the general education development (GED) examination, with the understanding that for many students basic literacy must precede intensive study for the GED examination.
- Classroom training in construction terminology and concepts.
- Placement in unsubsidized jobs or post secondary education.

The comparison group consisted of approximately 50 Detroit Public School Adult Education students seeking a (GED) certificate. These participants

are residents of the City of Detroit, ages 18-24, high school dropouts, and generally meet federal low income guidelines.

Instrumentation

Two instruments were used for this study: Test of Adult Basic Education, Time Instruction and a demographic instrument. Each of these instruments is discussed separately.

Test of Adult Basic Education (TABE). The test (TABE 7 & 8) were designed to measure achievement of basic skills commonly found in adult basic education curricula and taught in adult instructional programs. Reading, language, mathematics and spelling Level D (difficult) was utilized on both comparison and treatment groups. This provides the best measure of the grade equivalent range 6.6-8.9.

TABE 7 & 8 was developed to provide achievement scores that are valid for most types of educational decision making. Table 4 provides the reliability of the TABE.

Table 4
Complete Battery of Level D TABE

Normed Section	Number of Items	Mean	SD	SEM	KR20
Reading	50	26.27	11.61	2.84	.94
Mathematics Computation	25	12.82	5.48	1.98	.87
Applied Mathematics	50	21.33	9.50	3.00	.90
Language	55	30.17	11.10	3.33	.91
Spelling	20	11.28	4.42	1.82	.83

The Kuder-Richardson Formula 20 (KR20) is a frequently used measure of internal consistency. Based on a single administration of a test, this formula provides a reliability estimate equaling the average of all split-half coefficients obtainable on all possible divisions of the test into halves. Such a split-half coefficient would be obtained by correlating with the Spearman-Brown formula so that it applies to the whole test. The higher the KR20 coefficient, the greater the internal consistency of the subtest level. Internal consistency indicates that the subtest level as a whole measures a single trait, such as reading ability, rather than a combination of two or more abilities.

Content-related validation in achievement tests is evidenced by a correspondence between test content and instructional content. To ensure such correspondence, CTB/McGraw-Hill developers conducted a comprehensive curriculum review and met with educational experts to determine common educational goals and the knowledge and skills emphasized in today's curricula. This information was used to guide all phases of the design and development of TABE 7 & 8.

Construct validity, which refers to the meaning of test scores and the kind of inferences they support, is the central concept underlying the TABE 7 & 8 test validation process. Evidence for construct validity is comprehensive and integrates evidence from both content- and criterion-related validity.

General Educational Development (GED). The tests of General Educational Development (GED) offer persons who do not finish high school the opportunity to earn high school credentials. The GED Program is jointly sponsored by the American Council on Education and the State, Provincial and

Territorial Departments of Education. Since 1992, when the program began, more than 12 million adults have earned GED diplomas. The GED tests covers what graduating seniors are supposed to know in the areas of writing skills, social studies, science, literature and arts, and mathematics. With the exception of writing an essay, all questions on the GED tests are multiple choice; five possible answers are given. About two-thirds of individuals who take the GED tests have completed the 10th grade before leaving high school. About one-third finished the 11th grade. More than half of those who take and pass the GED tests are 24 years or younger. Nearly over a third are under age 20 (American Council on Education). A General Educational Development Certificate is granted by the State of Michigan upon successful passage of each of five sub-tests and the attainment of a minimum composite score of 225.

The number and percent of Detroit Pubic School Adult Education students who in 1996-1997 received a traditional high school diploma or a General Educational Development Certificate are presented as follows:

1.	Received traditional high school diplomas	76
2.	Received general education development (GED) certificates	
	• With instruction	251
	• Without instruction	864
	Total GED Certificates	<u>1,115</u>
3.	Total traditional high school diplomas and GEDs	<u>1,191</u>
	1996-97 Adult Education Final Report	

Persistence. Persistence was defined by the number of days attended.

Both programs offered 62 days of instruction. The higher the number of days attended the greater the persistence level.

Data Collection

Following approval by the Human Behavioral Investigation Committee at Wayne State University, the Youthbuild Executive Director was contacted to obtain permission to conduct this study. Once this permission was received, students were asked to complete the demographic survey and the reading portion of the TABE to establish the baseline academic measures. Students in the Youthbuild program were given the treatment (Direct Instruction and Precision Teaching), while students in the other program received the regular preparation courses for the GED exam. Students in the Youthbuild program were encouraged to fully participate and were reminded that consistent attendance is necessary to receive the full benefits of the program, including a GED and training. Youthbuild participants receive a monetary award for perfect attendance.

The teachers in the Youthbuild program received 16 hours special training in the methods of precision teaching and direct instruction. Proper training provides assurances that all students have had the same basic experiences in the program.

At the completion of the academic portion of the programs, students were retested on the reading portion of the TABE. The researcher collected the persistence (attendance) records for each students for the entire program and monitored their success rates with the GED. These data provided evidence of the effectiveness of these instructional methodologies for use in teaching adult learners.

Data Analysis

The data collected on the surveys was entered into a data file for analysis. The data was analyzed in two sections. The first section provided a description of the sample. Measures of central tendency and variability were used to provide a baseline description of the students' reading abilities. The second section of the analysis used inferential statistical analyses to test the three hypotheses developed for this study. These analyses included

Figure 1

Statistical Analysis

Hypothesis	Variables	Statistical Analysis
H01: There is difference in post treatment reading skills as measured by the TABE of young adults participating in the Youthbuild program receiving DT and PT as compared to (DPS) students not receiving DT and PT instruction.	<u>Dependent Variable</u> Posttest on Reading <u>Independent Variable</u> Group membership <ul style="list-style-type: none"> • Students in Youthbuild • Students in ABE <u>Covariate</u> Pretest reading scores	Analysis of covariance was used to determine if there was a difference in change scores on reading as measured by the TABE between students who have completed the Youthbuild program and students who have attended DPS ABE programs
H ₀₂ : There is a change in the reading skills as measured by the TABE of young adults participating in the Youthbuild program receiving DT and PT as compared to (DPS) students not receiving DT and PT instruction?	<u>Dependent Variable</u> Change Scores on Reading <u>Independent Variable</u> Group membership <ul style="list-style-type: none"> • Students in Youthbuild • Students in ABE 	
H03: There is no relationship between achievement and persistence for this sample of adult learners for the two groups.	<u>Variables</u> Achievement (change scores on reading) Persistence (attendance)	Pearson product moment correlations were used to determine the strength and direction of the relationship between achievement and persistence. The two groups were examined separately, with results compared to determine if there is a difference between the two groups

Hypothesis	Variables	Statistical Analysis
<p>H04: There is no relationship between the change in academic skill levels of young adults participating in the Youthbuild program receiving DT and PT as compared to (DPS) Adult Education students not receiving DT and PT instruction when selected demographic variables, including age, gender, highest completed grade, and attendance are considered?</p>	<p><u>Dependent Variable</u> Change in reading skills</p> <p><u>Independent Variables</u> Age Gender Highest Grade Completed Attendance</p>	<p>Stepwise multiple regression analysis were used to determine which of the independent variables can be used to predict change in academic skill levels as measured by the change in reading skills.</p>

Limitations of the Study

Lack of experimental control over the population and privacy issues were the primary limitations of the study. Two educational sites were involved in this study. One location utilized Direct Instruction and Precision Teaching educational methodologies and the other site taught the Adult Basic Education (ABE) and Adult Secondary Education (ASE) programs. The amount of a particular instructional methodology that each student received was not within the control of the experimenter, although time on task data were computed for the Direct Instruction and Precision Teaching instruction.

The second limitation involved privacy. Both programs are sensitive to external contact with their population and protecting student confidentiality. Therefore, the research only had limited access to the population and limited access to demographic and student information.

Summary

This chapter presented the research methodology including research design, variables in the study, setting, population, sample, instrumentation, data collection, and data analysis. Chapter 4 provides the results of the data analysis

with Chapter 5 presenting a summary of the results, conclusions that can be made based on the statistical findings and review of related research and recommendations for future research practice.

Chapter IV

Results of Data Analysis

The results of the data analysis that were used to describe the sample and answer the research questions are presented in this chapter. The purpose of this study was to investigate the relationship between direct instruction and precision teaching and the influence of professional experiences and personal characteristics. This study determined the effects of a particular teaching method on the academic achievement and persistence rates of adult learners.

Two groups of adult learners were included in the study. One group received training using direct instruction (DI) and precision teaching through YouthBuild Detroit. A second group received adult basic education through a public school system. Seventy-three students were included in the YouthBuild Detroit group. A total of 37 students were included in the adult basic education group.

The data analysis is presented in two sections. The first section provides a description of the YouthBuild students. Similar information was not available on the adult basic education students. The second section provides the results of the statistical analyses that were used to test hypotheses.

Description of the Sample

The gender of the students in YouthBuild were obtained from their records. The responses to this question were summarized using frequency distributions. Included in the 73 students who started the program were 59 (81.9%) males and 13 (18.1%) females. Gender information was unavailable on

one student. The results of this analysis are presented in Table 5.

Table 5
Frequency Distribution
Gender of Students in YouthBuild Detroit

Gender	Frequency	Percent
Male	59	81.9
Female	13	18.1
Total	72	100.0

Missing 1

The last completed grade in school for the participants was obtained from the students' records. From these records, the largest group of students (n=27, 37.0%) in the Youthbuild program had completed 10th grade, with 24 (32.9%) having finished 9th grade. Fourteen (19.2%) students left school after the 8th grade and 8 (11.0%) had completed 11th grade. In contrast, 11 (22.0%) students in the Detroit Public Schools had completed the 7th grade, 28 (56.0%) had completed the 8th grade, and 5 (10.0%) had finished 9th grade. Four (8.0%) students had completed the 10th grade and 2 (4.0%) had completed the 11th grade. The results of this analysis are presented in Table 6.

Mental toughness is a process of screening out students who do not exhibit the characteristics that are expected of graduates of YouthBuild Detroit. Among these characteristics are attendance, promptness, working in groups, successfully completing assignments, exhibiting appropriate written and oral communication skills, following directions, and showing that they are willing to commit to the program and learn to work in the construction trades. Students work for this two-week period without pay. If they miss any classes during this

time, they are dropped from the program as it does not appear that they meet the standards required of the YouthBuild Detroit program.

Table 6
Crosstabulations
Last Grade Completed by Students by Type of Program

Last Grade Completed	Type of Program				Total	
	YouthBuild		Detroit Public Schools		Frequency	Percent
	Frequency	Percent	Frequency	Percent		
Seventh	0	0.0	11	22.0	11	8.9
Eighth	14	19.2	28	56.0	42	34.1
Ninth	24	32.9	5	10.0	29	23.6
Tenth	27	37.0	4	8.0	31	25.2
Eleventh	8	11.0	2	4.0	10	8.1
Total	73	100.0	50	100.0	123	100.0

Of the 73 students who began the program in 1996, 21 (28.8%) did not complete the mental toughness portion. Another 22 (30.1%) dropped out of the program during the year. These students were not included in subsequent analyses that were used to answer the research questions. Following completion of the mental toughness portion of the program, students had to agree to submit to drug testing in order to continue in the program. None of the students were eliminated as a result of testing positive for drugs, but were given counseling to help them with this problem. Drug testing was conducted at random times throughout the year-long program. While some students tested positively, by the end of the program, all graduates were clear of drugs.

Information on attendance, as a measure of persistence, was obtained

from students' records. There were 62 classroom sessions possible for both the YouthBuild Detroit and adult basic education groups, excluding the two week mental toughness program. The mean number of days attended by students in the YouthBuild program was 41.87 (sd=11.38), with a median of 40 days. The range of actual days attended was from 21 days to 61 days. Students in the adult basic education program had a mean attendance rate of 33.58 (sd=12.25) days, with a media of 31.50 days. The number of days attended ranged from 4 to 61 days. Table 7 presents the results of this analysis.

Table 7
Descriptive Statistics
Attendance by Group Membership

Group	Number	Mean	SD	Median	Range	
					Minimum	Maximum
Treatment	30	41.87	11.38	40.00	21	61
Control	50	33.58	12.25	31.50	4	61

Comparison of Pretest Scores Between Groups

A pretest-posttest comparison research design was used in this study as the students in the two groups, YouthBuild Detroit and adult basic education, could not be randomly assigned to the treatment and control groups. To determine if there was equivalence between the YouthBuild Detroit group and the adult basic education group, t-tests for two independent samples was used. The reading pretest scores were used as the dependent variable in this analysis. The t-value of -.102 obtained on this analysis was not statistically significant at

an alpha level of .05 with 65 degrees of freedom. This result showed that students in the treatment group had a lower reading level ($m=6.04$, $sd=2.68$) than students in the control group ($m=6.85$, $sd=3.58$), although this difference was not significant. Table 8 presents the results of this analysis.

Table 8

t-Test for Two Independent Samples
Reading Pretest Scores by Group Membership

Group	Number	Mean	SD	DF	t-Value
Treatment	30	6.04	2.68	65	-1.02 (NS)
Control	37	6.85	3.58		

Hypotheses

Three hypotheses were developed for this study. Each of these hypotheses was tested using inferential statistical analyses. All decisions on the statistical significance of the findings were made using an alpha level of .05.

H₀₁: There is no change in the reading skills as measured by the TABE of young adults participating in the Youthbuild program receiving DT and PT as compared to Detroit Public School students not receiving DT and PT instruction.

A one-way analysis of covariance was used to determine if there was a difference in reading scores between the students in the Youthbuild program who received DT and PT and students in Detroit Public Schools who were not receiving this type of instruction. The posttest reading scores were used as the dependent variable, with the pretest reading scores used as the covariate. The type of program, Youthbuild or Detroit Public Schools, was used as the

independent variable.

The F ratio of 17.60 obtained for this analysis was statistically significant at an alpha level of .05 with 1 and 64 degrees of freedom. The covariate, pretest scores on reading, produced an F ratio of 44.49 which indicated the amount of adjustment in the posttest that was accounted for by pretest scores was statistically significant. A comparison of the posttest reading scores indicated that students in the treatment group ($m=6.66$, $sd=2.67$) had significantly higher scores in reading following completion of their program than students in the Detroit Public Schools ($m=5.27$, $sd=1.63$). The effect size of .41 was sufficient to indicate this difference was both statistically significant and substantive. The results of this analysis are presented in Table 9.

Table 9
Analysis of Covariance
Reading Posttest Scores by Group Membership

Group	Number	Mean	SD	DF	F ratio	Effect Size
Treatment	30	6.66	2.67	1/64	17.60*	.41
Control	37	5.27	1.63			
Covariate					44.49*	

* $p < .05$

H_{02} : There is a change in the reading skills as measured by the TABE of young adults participating in the Youthbuild program receiving DT and PT as compared to (DPS) students not receiving DT and PT instruction?

Change scores on reading were computed by subtracting the pretest reading scores from the posttest reading scores. Changes in a positive direction indicated the student's reading skills improved, with scores in a negative

direction indicating the student's reading skills had decreased. A change score of 0 indicated no change from pretest to posttest.

An t-value of 3.62 obtained on this analysis was statistically significant at an alpha level of .05 with 65 degrees of freedom. This result indicated that students in the treatment group ($m=.61$, $sd=1.77$) had significantly more positive change scores than students in the DPS adult education program ($m=-1.58$, $sd=2.91$). Based on this finding, the null hypothesis of no difference was rejected. Table 10 presents the results of this analysis.

Table 10

t-Tests for Two Independent Samples
Reading Change Scores by Group Membership

Group	Number	Mean	SD	DF	t-Value
Treatment	30	.61	1.77	65	3.62*
Control	37	-1.58	2.91		

* $p \leq .05$

H₀₃: There is no relationship between achievement and persistence for this sample of adult learners for the two groups.

Pearson product moment correlations were used to determine if there was a relationship between reading change scores and attendance as a measure of persistence in each of the programs, Youthbuild and Detroit Public Schools. Change scores were obtained by subtracting the pretest scores from the posttest scores to determine the amount of change in the achievement that results from the type of program. The findings of this analysis produced an r value of .40 for students in the Youthbuild program and .04 for students in the Detroit Public

School program. The correlation was statistically significant for the Youthbuild program, but not for the Detroit Public School program.

In addition, correlations were obtained for mathematics change scores ($r=.29$) and language arts change scores ($r=.11$) for the Youthbuild program only. These correlations were not statistically significant indicating that change scores in mathematics and language arts were not related to attendance. Math and language arts change scores were not available for the Detroit Public Schools program. Table 11 presents the results of this analysis.

Table 11

Pearson Product Moment Correlations
Achievement Change Scores with Attendance

Achievement Change Scores	Youthbuild			Detroit Public Schools		
	Number	r Value	Sig of r	Number	r Value	Sig of r
Reading	29	.40	*	37	.04	NS
Language Arts	30	.11	NS		NA	
Math	29	.29	NS		NA	

*p < .05

NA = Change Scores Not Available

H₀₄: There is no relationship between the change in academic skill levels of young adults participating in the Youthbuild program receiving DT and PT as compared to DPS Adult Education students not receiving DT and PT instruction when selected demographic variables, including age, gender, highest grade completed, and attendance are considered.

The reading change scores were used as the dependent variable in a stepwise multiple regression analyses to determine which of the independent variables; age, attendance, gender, and highest level of education could be used to predict reading change scores. One of the independent variables, attendance,

entered the regression equation, explaining 16% of the variance in reading change scores. The associated F ratio of 5.46 was statistically significant at an alpha level of .05 with 1 and 28 degrees of freedom. The positive nature of the relationship indicated that higher scores on reading change scores were associated with better attendance. The remaining independent variables; age, gender, and educational level of the student; were not significant predictors of reading change scores. Table 12 presents the results of this analysis.

Table 12
Stepwise Multiple Regression Analysis
Reading Change Scores

Independent Variable	Constant	b Weight	Beta Weight	r ²	t-Value
Attendance	-2.02	.06	.40	.16	2.34*
Multiple R40
R ²16
F Ratio					2.34*
Degrees of Freedom					1/28

*p<.05

A similar analysis was completed for the students in the Detroit Public Schools. None of the independent variables entered the stepwise multiple regression equation indicating they were not significant predictors of reading change scores.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of this study was to determine if a relationship existed between direct instruction and precision teaching methods on the academic achievement and persistence rates among adult learners. In addition, the relationship between personal and professional demographics with both teaching methods also was explored to determine if these variables were contributing to adult learners' success in their respective programs.

The Youthbuild Detroit program is a federally funded, 12 month program designed for disadvantaged youth who are between 18 and 24 years of age. These youth have expressed an interest in rebuilding their communities. Students attend academic classes for half of the program time, mastering basic skills in preparation for their general education development (GED) certificates and are trained in construction skills for the remaining portion of the program. They receive a stipend during their training and can earn additional money through incentives that include 100% attendance in both the academic and construction training programs. The program has completed three phases, graduating more than 100 students. These students met all graduation requirements, including passing a drug screen, obtaining a GED, and having at least a 90% attendance record. Completers of the program, while not all working in construction are either gainfully employed, serving in the Armed Forces, or attending college.

Precision Teaching is not so much a method of instruction as it is a

precise and systematic method of evaluating instructional tactics and curricula. Lindsley (1972), its originator, noted that "what was really new in the procedure was precision, so we decided to use that as an adjective in front of whatever it was doing; hence in our case 'precision teaching" (p. 23). Lindsley built precision teaching around a framework of the following basic elements:

- The principle that the student knows best, or in other words, the student's behavior can tell us better than anything else can whether or not instruction has been effective.
- An emphasis on the direct measurement of behavior and continuous monitoring (daily performance assessment).
- The use of the rate of response (e.g., number of correct answers per minute) as a universal measure of behavior.
- A standard chart format or visual display that can be used to study performance patterns.
- The use of descriptive and functional definitions of behavior and processes.
- Ongoing analytical investigations of the impact of environmental influences (teaching tactics) on individual behavior (student learning).
- An emphasis on building appropriate and useful behavior, rather than focusing exclusively on eliminating undesired or inappropriate behavior.

Precision teaching is effective in providing information to teachers that can help students learn, even if their past learning has been unspectacular. Teachers sometimes neglect to determine whether or not their teaching has had any effective learning on their students. Teachers who are truly interested in ensuring that their teaching has had the intended effect will certainly be interested in precise measurement of learning. More important, they will want to adjust their teaching practices when the measurements indicate that prior instruction has failed to accomplish its objective. Therefore measuring learning

is one of the most important of all instructional practices.

The role of the teacher is the most important component of effective learning. There has been a substantial amount of educational research regarding the importance of classroom instruction in attaining good student outcomes. According to Rosenshine & Stevens (1984):

- Good classroom management is a prerequisite to any sort of effective instruction.
- Educational research has assisted educators in distinguishing classroom management (i.e., getting students on task and keeping them there) from instruction (i.e., helping students build understandings).
- Research has established the fact that teachers do make a difference, particularly with academically at-risk students (instructional techniques that increases students' attentiveness during instruction results in improved student achievement).
- Researchers have demonstrated that the actions of effective teachers are not limited to mysterious inherited capabilities, instead they include many common sense techniques that all teachers can use to improve their effectiveness.

Methods

The study used a pretest-posttest comparison group research design. All students were tested twice on the same instrument, with the instructional treatment used as the independent variable. Dependent variables in this study were the performance on the reading portion of the Test of Adult Basic Education (TABE) and their persistence rates as measured by attendance.

Participants in this study included young adults in the Youthbuild program and Detroit Public Schools Adult Basic Education program. The majority of the students in both of these programs were African Americans who had dropped out of high school.

Students in both programs completed the TABE. Reading scores were available on both groups and was used to measure academic success in both programs. The second variable, persistence was measured as attendance in the program. The demographic data included age, gender, and educational level. All data for the study was obtained from student records, and none of the students were contacted to provide additional information.

Findings

Seventy-three students were included in the Youthbuild Detroit program, with 37 students included in the adult basic education group. Of the 73 students in the Youthbuild group, 59 (81.9%) were males and 13 (18.1%) were females. Gender information was unavailable on the adult basic education group. Educational level was measured by the last grade completed in high school. None of the participants in either group had completed high school, with most of the students in the Youthbuild program completing either ninth or tenth grade. Most of the students in the adult basic education program had completed seventh or eighth grade.

Students in the Youthbuild program had to participate in the mental toughness portion of the program. This part of the program required students to attend classes for a two-week period without pay. If they missed any classes during this period they were dropped from the program as it did not appear that they met the standards established for this program. Of the 73 students who began the program in 1995, 21 (28.8%) did not complete the mental toughness portion of the program. Another 22 (30.1%) students dropped out of the program during the year. Students in the Youthbuild program also had to agree to submit

to drug testing in order to continue in the program.

The pretest reading scores were compared between the two groups to determine statistical equivalence prior to the beginning of the program. The control group had a higher score on reading than the treatment group, but this difference was not sufficient to be considered significant. As a result of this analysis, the two groups were considered to be equivalent in terms of reading ability prior to starting their programs.

Research questions.

Four research questions were posed for this study. Each of these questions were answered using inferential statistical procedures. All decisions on the statistical significance of the findings were made using an alpha level of .05.

Research question 1. Is there a difference in academic skill levels as measured by the Test of Adult Basic Education (TABE) of young adults participating in the Youthbuild program receiving DT and PT as compared to Detroit Public School (DPS) Adult Education students not receiving DT and PT instruction?

Findings. To test for difference in reading posttest scores between the Youthbuild program and the DPS adult education students, analysis of covariance was used, with the posttest scores on the reading section of the TABE used as the dependent variable and pretest scores on this measure were used as the covariate. Group membership, Youthbuild or DPS, was used as the independent variable for this hypothesis. The results of this analysis indicated that students in the Youthbuild program had significantly higher scores on the reading portion of the TABE after completion of the program.

Conclusions. The use of direct instruction and precision teaching increased the reading achievement of the Youthbuild students significantly

compared to Detroit Public Schools Adult Education students not receiving the treatment. Performance assessments were more sensitive to instruction than standardized tests as they provide a unique view of instructional effectiveness. The researcher assumes that all instructors involved in the study were competent at helping the students achieve their educational goals. Otherwise the TABE test results are likely to reflect classroom management skills as opposed to true student performance.

Implications. These findings suggested that if teachers were trained and monitored in the use in direct instruction and precision teaching methodologies, their students' academic skills could improve. This result will not be realized unless teachers receive institutional support to adapt direct instruction and precision teaching practices. Teachers, who are asked to change but are resistant to change, may need assistance, because changes in their patterns of providing instruction may cause stress and job burnout.

Research question 2. Is there a change in the reading skills as measured by the TABE of young adults participating in the Youthbuild program receiving DT and PT as compared to (DPS) students not receiving DT and PT instruction?

Findings. The change scores were calculated by subtracting pretest reading scores from posttest reading scores. To determine if these change scores differed between the two groups of students, Youthbuild or DPS, t-tests for two independent samples were used. The results of these tests showed that students in the Youthbuild program had significantly higher scores than DPS students.

Conclusions. The direct instruction and precision teaching practices increased the reading achievement level of the Youthbuild students significantly.

Direct Instruction and precision teaching methodologies may have motivated the Youthbuild students to do more out of class reading for both pleasure and information. By practicing a skill, such as reading, the skill improves and motivates the student to practice more resulting in success and improved self-esteem. As reading is fundamental and necessary for learning, students in this group have been given opportunities to become better learners in all subject areas that can lead to success in the future.

Implications. Use of direct instruction and precision teaching into the Detroit Public Schools Adult Education classrooms should be considered as a means of increasing student achievement. This method of instruction has been shown to be effective with students who have previously dropped out of school. Before adopting this type of program, teachers need to participate in training programs and be willing to change their paradigm regarding the ways they teach reading.

Research question 3. What is the relationship between achievement and persistence for this sample of adult learners for the two groups?

Findings. Pearson product moment correlations were used to determine if there was a relationship between reading change scores with attendance as a measure of persistence. Attendance data were obtained from the students' records in both the Youthbuild and DPS adult education programs. The results of these analyses provided one significant correlation between reading change scores and attendance for students in the Youthbuild group. The correlation between reading change scores for students in the DPS group were not statistically significant. The correlations between attendance and language arts

and math change scores for the Youthbuild group were not statistically significant.

Conclusion. Attendance was significantly related to reading change scores. The students who were in class more were more likely to have higher change scores indicating improvement in their reading ability. In general, studies in which reading remediation has been successful, time spent reading was an important factor (Chall, 1987). The more time students spent on activities that were academically relevant and appropriate, the more they achieved (Rosenshine, 1978). Frequent and timely assessment is essential to provide students with feedback regarding their progress. Assessment based on preestablished objectives provides both students and teachers with a means of monitoring progress. Assessment also provides teachers with information to gauge the success of their instructional strategies and evaluate which ones need to change to improve outcomes. These were important factors that can influence reading scores of students who are returning to school to improve their basic skills as part of becoming productive citizens in a global society.

Implications. Student attendance is necessary for students to learn, especially in remediation courses, such as reading and basic mathematics. If students do not attend class, they miss important information and fall behind. By making attendance mandatory, teachers are assured that students will be in class on a regular basis and will be exposed to instruction that can help them improve their reading ability.

Research question 4. What is the relationship between the change in academic skill levels of young adults participating in the Youthbuild program receiving DT and PT as compared to (DPS) Adult Education students not receiving DT and PT instruction when

selected demographic variables, including age, gender, highest grade completed, and attendance are considered?

Findings. Stepwise multiple linear regression analyses were used to determine if age, gender, and highest grade completed could be used to predict change in reading scores for students in the Youthbuild program and DPS students. Attendance was found to be a significant predictor of reading change scores for students in the Youthbuild program. The other independent variables did not enter the regression equation indicating that age, gender, and highest grade completed were not significant predictors of change in reading scores. None of the independent variables entered the regression equation for DPS students indicating they were not significant predictors of reading change scores.

Conclusions. The DI and PT fostered a learning environment which encouraged classroom attendance. Youthbuild students were motivated to attend class more often than DPS students. Their attendance may have been due to the stipend the Youthbuild trainees receive or the instructional methodologies. Students in DPS have to be self-motivated to attend class and if they get a job or have other obligations, school is often skipped causing them to fall behind the rest of the class. By falling behind, they can become frustrated and drop out again.

Implications. Regular classroom attendance is essential for successful learning and establishing habits that can help them become successful in their lives. Having a good attendance record is part of being a good employee. Students in adult training programs must be able to see the relationship between attendance and learning, as well as understanding that employers may not tolerate poor attendance patterns among their employees. Part of school is

developing good work habits that can endure throughout the students' life.

Recommendations for Further Research

The purpose of this study was to compare student outcomes in reading and attendance between two programs, Youthbuild and DPS. While completing this study, additional topics that need to be studied were noted. Some of these topics include:

- Examine the long-term effects of Youthbuild in terms of occupational paths, participant continued educational efforts, and satisfaction with their participation to determine if there is a need to change components of the program to improve outcomes.
- Train teachers to use DI and PT in their adult education classes to determine if these teachers believe these types of programs can help students learn to read effectively.
- Investigate the use of DI and PT in regular education programs to determine if these instructional methods can help students become successful learners.
- Compare other types of adult training programs for hard-core unemployed people to determine their success in placing program completers in jobs.
- Use a longitudinal research design to track Youthbuild program participants from the classroom through their careers to determine if they move from entry-level positions into higher level jobs as a result of their training and added experience.

Appendix A
Correspondence

January 25, 1997

Dear _____:

On March 4-5, 1997, 8:30 a.m. to 4:30 p.m., CeLaire Corporation of Seattle, Washington will present a workshop on the Morningside Model of Generative Instruction. This training will be held at the office of Youthbuild Detroit, 3611 Cass Avenue, Detroit, Michigan. The course of instruction will include training in the following composite skills:

- ◆ Precision Placement Testing
- ◆ Direct Instruction
- ◆ Fluency Building
- ◆ Standard Celeration Chart Training

Morningside Model has been successfully implemented in the Chicago, Illinois Public Schools, Georgia Department of Corrections and Houston, Texas Public Schools. Students have gained approximately six(6) grade levels in reading and mathematics within a period of sixteen(16) weeks of instruction. Also, high school dropouts have been able to acquire the educational competency within a sixteen (16) weeks to successfully pass and obtain a General Education Development (GED) certificate.

The course fee is \$175.00, and reservations must be received by February 21, 1997. This is a very popular training program, so sign up early.

Feel free to contact me at (313) 831-1318 to enroll in the workshop. If you have any questions about the training, contact John H. Autrey at (313) 596-5341.

Sincerely,

Beverly Manick
Executive Director
Youthbuild Detroit

BM/II



Wayne State University
Human Investigation Committee

Behavioral Institutional Review Board
University Health Center 8C
4201 St. Antoine Blvd.
Detroit, MI 48201
(313) 577-5174 Office
(313) 993-7122 Fax

MEMORANDUM

TO: John H. Autrey, Education
(Administrative and Organizational Studies)
17315 Wildemere
Detroit, Michigan 48221

FROM: Peter A. Lichtenberg, Ph.D. *Peter A. Lichtenberg Ph.D.*
Chairman, Behavioral Institutional Review Board

SUBJECT: Exemption Status of Protocol # B 01-26-97(B03)-X;
"Effects of Direct Instruction and Precision Teaching on
Achievement and Persistence of Adult Learners"

SOURCE OF FUNDING: Youthbuild Detroit

DATE: January 29, 1997

The research proposal named above has been reviewed and found to qualify for exemption according to paragraph #1 of the Rules and Regulations of the Department of Health and Human Services, CFR Part 46.101(b).

Since I have not evaluated this proposal for scientific merit except to weigh the risk to the human subjects in relation to potential benefits, this approval does not replace or serve in place of any departmental or other approvals which may be required.

cc: Dr. B. Hall/389 Education

APPENDIX B

Informed Consent Form

“EFFECTS OF DIRECT INSTRUCTION AND PRECISION TEACHING ON ACHIEVEMENT AND PERSISTENCE OF ADULT LEARNERS”

PRINCIPAL INVESTIGATOR: JOHN H. AUTREY

I. INTRODUCTION/PURPOSE

I am being asked to participate in a research study which will provide me an opportunity to improve my reading and mathematics competencies effectively and quickly.

II. PROCEDURE

Two (2) teachers will be trained in the direct instruction and precision teaching educational methodologies.

The two trained educators will teach approximately 35 students using both the direct instruction and precision teaching educational models. You will be one of the student receiving both instructional methods.

III. BENEFITS

You can acquire the required educational competencies within a time span of sixteen (16) weeks to successfully obtain a General Education Development (GED) on your first testing attempt.

You can gain six (6) grade levels in their reading and mathematics competencies within a period of sixteen (16) weeks.

IV. QUESTIONS

If I have any questions concerning my participation in this study now or in the future, John H. Autrey, or one of his associates can be contacted at (313) 342-8011. If I have any questions regarding my rights as a research subject, Dr. Peter A. Lichtenberg, Chairman of the Behavioral Investigation Committee can be contacted at (313) 577-5174.

“EFFECTS OF DIRECT INSTRUCTION AND PRECISION TEACHING ON ACHIEVEMENT AND PERSISTENCE OF ADULT LEARNERS”

V. CONSENT TO PARTICIPATE IN RESEARCH STUDY

I have read or had read to me all the above information about this research study, including the experimental procedure, possible risks, side effects, and the likelihood of any benefits to me. The content and meaning of this information has been explained and is understood. All my questions have been answered. I hereby consent and voluntarily offer to follow the study requirements and take part in the study. I will receive a signed copy of this consent form.

Signature

Print Name

John H. Autrey
Principal Investigator

Appendix C

YouthBuild Detroit Program Application

YOUTH BUILD DETROIT PROGRAM APPLICATION

Today's Date _____ *Please fill out this application as accurately as possible.*

Social Security Number: _____ Date of Birth: _____ Age: _____

Last Name _____ First Name _____ Middle _____

Current Street Address: _____ City _____ Zip _____

Current Phone Numbers: _____

Beeper: _____ *Please circle which is the best number to reach you or to leave a message.*

Gender: Male _____ Female _____

Race/Ethnicity: Black _____ White _____ Hispanic _____ American Indian or Alaskan Native _____ Asian/Pacific Islander _____

United States Citizens: Yes _____ No _____ Permanent Resident Alien: Yes _____ No _____ Alien Registration#: _____

Selective Service Registration: Yes _____ No _____

Important!! All males born after December 31, 1959. Federal law requires that you be registered with the Selective Service System before any services are provided by this agency. You may register at any U.S. Post Office and verification is mailed to you.

Current Living Status: Living with family _____ Living Alone _____ Living with friends _____
Living in a shelter _____ Living in a halfway house _____ Living in a work/release program _____
Other (specify) _____

Have you ever been convicted of any crime? Yes _____ No _____

If yes, please describe and include dates and status of case _____

If yes, are you on probation/parole? Yes _____ No _____

Name and number of officer _____

How were referred to YOUTH BUILD program? By whom? _____

Friends _____ TV/Radio _____ City newspaper _____ Neighborhood Flyers or newspaper _____

Shelters _____ Probation/parole officer _____ Neighbors _____ Family _____ other (describe) _____

EDUCATION

Last School Attended _____

Highest Grade Completed _____ Last Year in School _____

If you did not complete high school or get your GED, why did you drop out? _____

Did you take any shop courses in school? Yes _____ No _____

If yes, which ones? _____

Do you know how to drive? Yes _____ No _____ Own a Car? Yes _____ No _____

Do you have a Drivers/Operators License? Yes _____ No _____

WORK HISTORY

Have you ever been in another training program? Yes _____ No _____

When? (Dates) _____

Name and Location of Program _____

Did you complete the program? Yes _____ No _____

CURRENT JOB

Are you currently working? Yes _____ No _____ Full-time _____ Part-time _____

Hours per week: _____ If employed, number of hours, on average, you work during a week.

LAST JOB

Have you ever held a job before? Yes _____ No _____

Name and address of company _____

Dates you work there from _____

What was the pay per week? _____ Job Title _____

Describe your job title and duties _____

Why did you leave? _____

CONSTRUCTION INTEREST

Have you had any construction or rehab experience? Yes _____ No _____

What type of construction work do you think you want to do? _____

Why _____

If you could have any career what would it be? _____

Why are you interested in being in this program? _____

If you are accepted in this program, you will be in class Monday through Friday, 8:00-4:00 studying reading, writing and math skills to help you prepare for your GED and for the construction trades. What would you like to get out of the class and why? _____

HEALTH

Are you taking any medication right now? Yes _____ No _____

If yes, please describe _____

Have you ever had to stay overnight in the hospital? Yes _____ No _____

If yes, please describe: _____

Could you pass a drug screen test today? Yes _____ No _____

Do you have health insurance? Yes _____ No _____

CURRENT INCOME STATUS: DO YOU OR ANY FAMILY MEMBER LIVING WITH YOU RECEIVE ANY OF THE FOLLOWING? PLEASE CHECK ALL THAT APPLY.

_____ Aid to Families of Dependent Children _____ Supplemental Security Income
 _____ General Assistance _____ Refugee Assistance _____ Pension _____ Workers Comp.
 _____ Food Stamps _____ Medicare/Medicaid _____ Disability _____
 _____ Social Security What kind of social security? _____

Whose name is on the grant under _____ Case Number _____

Below, list yourself, each person who lives in the household and the income received by each. Include all income.

NAME	AGE	RELATIONSHIP TO APPLICANT	SOURCE OF INCOME	INCOME RECEIVED LAST SIX MONTHS

DO YOU PROVIDE AT LEAST HALF OF YOUR OWN SEAPORTS _____ NO _____

TOTAL FAMILY INCOME FROM ALL SOURCES: \$ _____

I CERTIFY THAT ALL INFORMATION CONTAINED IN THIS APPLICATION IS COMPLETE AND ACCURATE TO THE BEST OF MY KNOWLEDGE. AND AGREE THAT ANY MISREPRESENTATION SHALL BE GROUNDS FOR THE TERMINATION OF MY ENROLLMENT IN THE PROGRAM.

SIGNATURE _____

DATE _____

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Abstract

EFFECTS OF DIRECT INSTRUCTION AND PRECISION TEACHING ON ACHIEVEMENT AND PERSISTENCE OF ADULT LEARNERS

BY

JOHN H. AUTREY

May, 1999

ADVISOR: Dr. Burnis Hall

MAJOR: Higher Education

DEGREE: Doctor of Education

Major urban areas in the United States are populated by under-educated and under-employed young adults for adults for a variety of socioeconomic and educational reasons. Increasingly, automated technology, maturing industries, changes in consumer demand and the emergence of more dynamic world-wide competition all have worked together to produce an almost insurmountable barrier for young urban high school dropouts. No longer can a high school dropout plan on factory work leading to self sufficiency in the United States, particularly in the Detroit metropolitan area. The purpose of this study was to research and report the effects of Direct Instruction and Precision Teaching and the persistence rates of adult learners.

This study used Direct Instruction and Precision Teaching educational strategies on young adults enrolled in the Youthbuild Detroit program. Youthbuild Detroit is a federally funded 12-month program that supported the use of training for the construction trades and educational preparation for the test of general education development (GED). The participants were 18 through 24 years of age high school dropouts, most of who were male and African-

American. A comparison group of Detroit Public Schools adult basic education students were used in this study.

The findings of the study reveal that students taught basic educational skills with Direct Instruction and Precision Teaching methodologies significantly increased their reading comprehension and the attendance rates.

The major conclusion determined from this study was that adult learners will show increased achievement and reduced attrition with instructional methodologies that increase student-teacher interaction and conduct daily monitoring of student achievement.

Autobiographical Statement

JOHN H. AUTREY

- Education: 1999 Wayne State University Doctor of Education, Administration and Supervision
1985 Master's of Art, Central Michigan University Personnel Management
1981 Bachelor of Science, Wayne State University Business Administration
- Teaching Experience Adult Education Teacher
1990-1992 – Detroit Public Schools
1988-1990 – Highland Park Public Schools
1990-1995 – Highland Park Community College Criminal Justice Instructor,
- Law Enforcement Experience: City of Detroit
1995-present – Commanding Officer (Lieutenant), Third Precinct – Investigative Operations Unit,
1994-1995 – Commanding Officer (Lieutenant), Crime Prevention Section
1998-1994 – Lieutenant, Ninth, Seventh, Third Precincts
1985-1988 – Sergeant, Internal Affairs Section
1973-1985 – Police Officer, Narcotic Division, 13th Precinct, City of Detroit, 1973-1985
- Publications: Autrey, J. (1997). Detroit Police Department Promotional Study Guide. Detroit, MI: Casa de Unidad Publisher.
Autrey, J. (1995). Detroit Police Department Promotional Test. The Michigan Chronicle, 6(A).
Autrey, J. (1994). Detroit Police Department Promotional Study Guide. Detroit, MI: Mays Printing Publisher.
Autrey, J. (Reviewing Editor). The Journal of Gang Research. Chicago: National Gang Crime Research Center Publisher, 1994-present.
- Honors: Recipient of 1997 Join Together Fellowship, Boston University.