THE EFFECTS OF DEVELOPING A FOUR-YEAR PLAN OF STUDY ON THE VOCATIONAL IDENTITY OF NINTH GRADE STUDENTS

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Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF EDUCATION
December, 1994

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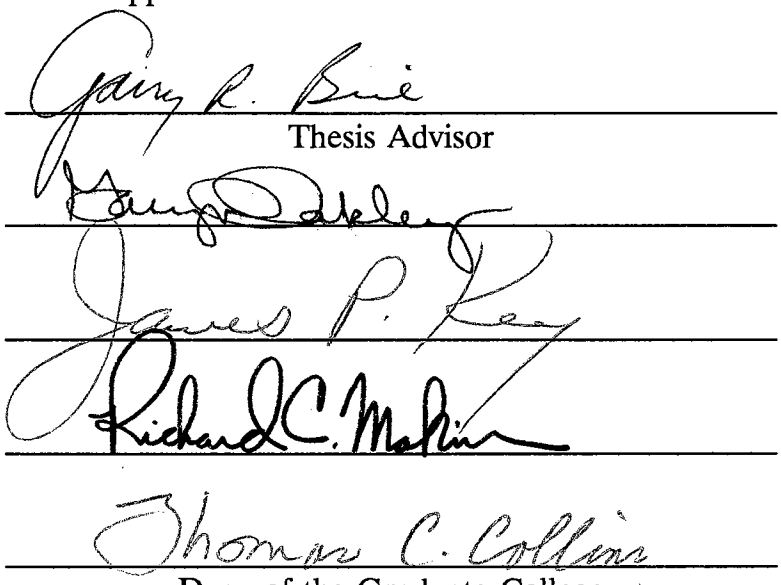
Thesis Approved:



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ACKNOWLEDGEMENTS

With deep appreciation I acknowledge the encouragement, support and assistance of my doctoral committee chairman and dissertation advisor, Dr. Garry Bice who freely shared of his time and knowledge, even on weekends and evenings. I would also like to express appreciation to committee members Dr. James Key, Dr. Richard Makin, and Dr. Gary Oakley who also gave of their time, guidance and expertise during the completion of this study.

In addition, a genuine sense of appreciation and thanks is expressed to Dr. Norm Gysbers, University of Missouri, Columbia for sharing his support, wisdom, and advice and in the selection of the pre-test/post-test instrument. I also thank Dr. Behrooz Jahanshahi for his assistance with the computer analysis of the data in this study. A special thanks goes to Carri Hoffman for providing her skills in formatting this study.

Additionally, I would like to thank Dr. Chuck Hopkins, my supervisor at the Oklahoma Department of Vocational and Technical Education, who kept insisting that I begin work on my doctorate. I will always thank him for his faith in my abilities, his vision of my continued professional growth and development, and his unrelenting insistence on reaching for the next goal, even when I insisted I was not ready.

Next, I would like to thank my wonderful group of co-workers, Mona Akin, Kelly Arrington, Kim Downey, LeRhonda DuBose, Joyce Hart, Camilla Riley, and Curtis Shumaker who listened with a sympathetic ear to the trials and triumphs of this extraordinary process.

As with all things, accomplishments are made possible only with the support of loved ones. I especially thank my husband, Jim for his understanding during the many weekends I demanded quiet and solitude times to complete the work required for this study, and for all the dinners out to make a special time to relax and be supportive.

I appreciate the early influences of my mother, Edith Cole, who believed steadfastly women must have a good education and would not allow anything less of me; and in the memory of my father E.G. Cole, who was my first role model for life-long learning by earning his GED the same year I graduated from high school. Though not formally "schooled" he was an educated man.

I am grateful to have been blessed with having a very special companion in my life, my late Scottish Terrier, Katie. Her unwavering devotion, love, and companionship during the many hours of writing and research which was required to complete this study was a constant comfort and support, even in the difficult times. She could always sense when I needed her to curl up at my feet or just sit beside me to offer her quiet support. Her passing during the latter part of writing this dissertation made the task a little lonelier and a lot more difficult. I shall miss her always.

I am grateful for the web of support from friends and family which has allowed me to successfully complete this dissertation. My thanks to all who made the support necessary for me to successfully complete this process.

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CHAPTER I

RESEARCH PROBLEM

Introduction

A strong back, the willingness to work, and a high school diploma were once all that was needed to make a start in America; they are no longer. A well-developed mind, a passion to learn, and the ability to put knowledge to work are the new keys to the future of our young people, the success of our businesses, and the economic well-being of the nation (U.S. Department of Labor, 1990; cited in Oklahoma Department of Vocational and Technical Education, 1993, p. 1). According to Hazler and Roberts (1984);

> It is becoming clear that the capability to acquire, understand, and use information must be supplemented by decision-making skills so that the information can be used effectively. Only when all these factors have been maximized can individuals find self-satisfaction and realize their true potential through vocational choices (p. 409).

The need for better prepared workers to meet the demands of a technological society by being able to connect their educational experiences to the world of work (Ettinger, 1993; U.S. Department of Labor, 1990), is being discussed with greater frequency at this time than others. The economic and competitive decline of the American worker has spurred calls for education

reform. Some of the common themes driving current school reform movements are;

1. growing linkages between education and work;
2. concern for rising rates of youth unemployment;
3. the need to create a labor force that is functionally literate, capable of engaging in the growing complexity of work tasks and emotionally committed to productive work; and
4. alarm that large numbers of students are not mastering the school-to-work transition because they lack the attitudes, skills, or personal and career goals that constitute employability (Herr and Cramer, 1984).

The strong connection between education and employment has been documented time and again; however, so has the lack of appreciation youth have for this fact. For example, only 2.2 percent of the 37,500 17 year-old boys and girls participating in a National Assessment of Educational Progress study considered school or academic activities to be useful for a job (Mitchell, 1977; cited in Herr and Cramer, 1984; p. 409-410). Remarkably, students were unable to link academic learning to future job performance. The need for career planning and career information by students has been focused upon by many key studies done within the past ten years. A 1981 survey by the Educational Testing Service found that almost half of all high school students never talked to a counselor about occupations (Chapman and Katz, 1981). In a May 1987, ACT Student Needs Assessment Survey of 32,000 high school students, the three items ranked highest were related to the need for career information and planning. In

fact, twelve of the twenty top items ranked were career related. In a 1993 VERTEC study, it was concluded;

> students don't know enough about technological careers, and lack basic information about careers in general. Beyond this lack of knowledge, however, is the problem that middle school students don't connect what they are learning in the classroom with careers and are uninformed about economic realities and the world of work (p. 1).

The needs are clear, students lack the basic skills and knowledge about careers to effectively plan their own career pathway to successfully transition from school to work (Jarvis, 1988).

Employers have identified a demand for employees with a set of "new workplace basics." These "basics" include Personal Management: Self Esteem, Goal Setting/Motivation, and Personal/Career Development. In *Workplace Basics: The Skills Employers Want* (Carnevale et al., 1990), the authors state that goal setting is important as is structuring individual career progression models that explore the training and educational preparation needed to meet career goals through supported career paths. This provides evidence that the process of developing a career plan is an essential tool in the development of workers able to compete in the global economy.

Career planning, or the process by which one develops a career plan, has become an increasingly important student need during the past decade. Technological advances have resulted in substantial changes in the nature and structure of occupations and industries. These changes have affected many of the ways we approach career planning and decision making. Career development is now seen as a lifelong process. Personal plans of action (Individual Career Plans

of Study) are becoming important instruments that counselors and others are using to help their students and/or clients meet their changing goals, interests, and needs in this fast-paced, rapidly changing society (Bhaerman, 1988).

The concept of vocational identity (a clear picture of one's career goals, interests, and talents) would appear to play a crucial role in persistence in developing a plan and in achieving the academic requirements within the career plan. According to Siar (1987), vocational identity as measured by Holland's *My Vocational Situation,* can be related to a student's decision to continue in a post-secondary academic program.

The majority of students in eighth and ninth grades have not established even tentative career goals. Yet, they must make tough decisions regarding the courses they will pursue at high school and related decisions which directly impact their future career options. About twenty percent of secondary students drop out nationally before high school graduation. Lack of specific career goals for which students' secondary school courses have perceived relevance or connection is usually a contributing factor (Jarvis, 1988). The concept of the development of vocational identity as related to the importance of career planning is one which deserves study.

The policy statement *Connecting School and Employment,* of the Council of Chief State School Officers (1991) states that schools must provide the needed guidance by building carefully structured paths that lead to continued learning and productive employment for all. In *Turning Points: Preparing American Youth for the 21st Century*, the Carnegie Council on Adolescent Development (1989), stated;

> that youth must pursue a course of study and develop cognitively in a manner that maintains all career options, in order to emerge from the educational system and avoid a diminished future (p. 15).

While it is estimated that only 15% of the jobs of the future will require a college diploma (bachelor's degree), more than half of all jobs will require some type of postsecondary education and training (Cetron and Cetron, 1991). Yet, the National Center for Education Statistics says that at the national level, 61% of high school graduates are enrolling in a collegiate institution. In Oklahoma, the 1992 graduating class sent 40.6 % of its graduates to college (Oklahoma State Regents Report, 1992). Of those who go on to pursue a degree, only about 46% of entering freshmen (28.6% of high school graduates) will eventually graduate. Couple these statistics with the failure of other students to complete high school, and the need becomes clear for multiple career paths for over 75% of our youth who do not attend or finish college.

This lack of direction and inadequate planning results in difficulty for students to successfully enter the job market. According to Jarvis (1988), of those high school graduates who do successfully enter the labor market directly from secondary school, the median duration of first job holding is less than one year. The reason given by the majority of those voluntarily leaving their first jobs (either by walking out, or deliberately getting themselves fired to qualify for unemployment insurance) is essentially, "it wasn't what I hoped it would be, and it certainly isn't the kind of job I want for the rest of my life;" very simply these youth are doing career exploration. They did not form a plan in high school and thus left without skills or focus. Of those who do pursue post-secondary

educational options, many do not possess clear career goals. Many do not seriously consider their post-college employment options until they are in their final months of studies. "Major-hopping" is widespread. Seventy percent of university graduates will not be in occupations directly related to their majors five years after graduating (Jarvis, 1988). Additionally, according to Filipczak (1992; cited in Oklahoma Department of Vocational and Technical Education, 1993; p. 7), currently, high school graduates typically take low-paying, low-skill jobs. Somewhere between the ages of 25 and 27, if they have had a chance to develop some work skills, the more fortunate graduates might embark on a career with real potential. The vocational identity or career plan of these young workers develop only after a prolonged series of exploratory jobs, and if the employer is willing to invest in training, or if the individual can manage to learn through work experience. We have lost ten years of productivity of this American high school graduate.

Statement of the Problem

The idea that the development of a sequential *Four-Year Plan of Study* assists students to develop higher career aspirations, and thus provides more goal-directedness, has been popularly promoted in recent literature. According to Hull and Parnell (1991), the planning and pursuit of a meaningful four-year plan assists in defining student goals and interests. Bottoms, et al., (1992) found in a study of public schools participating in the *High Schools That Work* project supported by the Southern Regional Education Board (SREB) that students are generally ill-

equipped to choose the courses they will take in high school. A typical ninth grade student lacks the knowledge and information-gathering skills to determine the best educational route to follow. The use of a plan of study, Bottoms (et al, 1992) found in his case studies of those schools, assists the students in raising their educational expectations and assists them in being able to link school experiences with career goals. The basic problem addressed by this study is that many students exit secondary schools without a clearly identified educational/vocational plan or positive vocational identity. This study will examine the interaction between the process of developing a *Four-Year Plan of Study* and the development of vocational identity which is defined as possessing a clear and stable picture of one's goals, interests, personality, and talents (Holland et al., 1986). The development of strong vocational identity can serve as one process which assists students in leaving high school with a clearer picture of future goals.

Purpose of the Study

The purpose of this study was to determine if the development of a *Four-Year Plan of Study* by ninth grade students has an impact on the vocational identity of the student.

Research Questions

The major questions developed to provide guidance to the study were:

1. Does the development of an individual *Four-Year Plan of Study* help to define the vocational identity of ninth grade students?

2. Does the development of vocational identity relate to chronological age?

3. Does the development of vocational identity relate to gender?

Variables

In this study, the independent variable was the development of a *Four-Year Plan of Study*. The dependent variable was the vocational identity gained between the pre-test and post-test, as a result of the development of an individual *Four-Year Plan of Study*.

Limitations

This study has the following limitations:

1. The study is limited to ninth grade students in Oklahoma who were enrolled in a selected number of public schools which were involved in the Oklahoma High Schools That Work project during the period beginning September 1993, and ending May 1994.

2. The study was conducted during one academic year.

3. The control group school was not one of the High Schools That Work project schools.

4. Investigation of other variables impacting the development of vocational identity were not included.

Assumptions

This study was conducted with the following assumptions:

1. The differences in the manner in which the plans of study were developed had an essentially random effect over that large sample.

2. All participating programs had a mix of student career aspirations and developmental experiences.

Definitions

The following definitions are given in order to provide an understanding of the concepts basic to the study.

Act of career planning: As used in this study, the act of career planning is a purposeful process of identifying career interest, either formally with an instrument, or informally through developmental experiences and developing an individual career/educational plan for the four years of high school to meet an identified career goal.

Career: A dynamic life-style concept that involves a sequence of work or leisure activities in which one engages in a lifetime. They include not only the participation in particular occupations, but also the career development experiences which precede entry into the work force and those experiences which occur after one no longer works, as well as how persons integrate their work life with other life roles (Herr and Cramer, 1984).

Career decision making: The ability to select methodically among occupations consisting of three basic components, self-analysis, job analysis and occupational try-out (Fukuyama, 1988).

Career development: A lifelong process that is the total constellation of psychological, sociological, educational, physical, economic, and chance factors that combine to shape the career of any given individual (Splete, 1977; cited in Ettinger, 1993 p.6).

Career guidance: A systematic program of coordinated information and experiences designed to facilitate individual career development, and more specifically, career management (Herr and Cramer, 1984).

Career maturity: Having definite career choices, making consistent choices over time, and making choices that are realistic (Crites, 1978).

Career planning: The process of identifying goals, alternatives, worker roles, learner roles, assets and barriers to determine a plan of action in attaining the education and training necessary for a given career or occupation (NOICC, 1993).

Career salience: As used in this study, career salience is the commitment to and the relative importance of a given career to an individual over time.

Developmental experiences: As used in this study, developmental experiences are those naturally occurring experiences which lead to the maturity of the student, with the underlying assumption that experience enhances maturity.

Plan of study: As used in this study, a plan of study is a four to six-year plan which sequences recommended academic and vocational courses within a career major or career focus.

Vocational identity: Refers to the possession of a clear and stable picture of one's goals, interests, personality, and talents (Holland et al., 1986).

CHAPTER II

REVIEW OF RELATED LITERATURE

From a review of literature related to this study, the areas of career planning, career decision making, and vocational identity were identified as the foundation components for the development of the study.

Career Planning

From a review of literature related to career planning over the past ten years, it is recognized that educational systems are charged with preparing students for productive employment and the development of a career/vocational plan of study. The literature indicates that these processes and activities can facilitate the on-going lifelong process of career development. The importance of career planning or the development of a plan of study has been emphasized in federal legislation such as, the Carl Perkins Vocational Education and Applied Technology Act of 1991 and in PL 94-142, Education of the Handicapped Act, the Job Training and Partnership Act (JTPA) and more recently the Americans with Disabilities Act (ADA), Individuals with Disabilities Education Act (IDEA), and the School to Work Opportunities Act of 1994. These pieces of federal legislation each emphasize the importance of individual education plans including plans to

facilitate the transition from school to work (career planning) for individuals with handicaps or disabilities (National Consortium, 1994).

According to Ettinger (1993), "all students deserve the opportunity to develop individualized career plans since the purpose of the portfolio or career plan of study is for better linkage of education to future career plans."

According to Gysbers and Henderson (1988), individual advisement is the process where counselors assist students to use self-appraisal information along with personal, social, educational, career, and labor market information to help them plan for and realize their career and personal goals. The involvement of students, parents, and school in planning a four-year program of study that meets the individual needs of students is a critical part of individual advisement.

In the *Tech Prep Associate Degree* by Hull and Parnell (1992), the authors recommend that students should receive educational, career, interest, and attitude assessment information no later than the eighth grade. This will assist them in planning and pursuing a meaningful four-year educational plan. The authors further assert that a planned assessment and counseling program can build students' confidence in their unique abilities and can help affirm their pursuit of a more rigorous program of study.

Other segments of society outside business and industry and vocational education are recognizing the growing importance and need for career planning. In a study completed by the American College Testing Program in 1986, Prediger and Sawyer reported on parents who were asked to rank 25 goals of education. The goal which was ranked third highest was "to develop an understanding about

different kinds of jobs and careers including their requirements and rewards." The goal which was ranked sixth, was "to help students make realistic plans for what they will do after high school graduation" (Gallup, 1985, p. 237). Not only are national studies recognizing the need for improved career planning, parents are now recognizing this need.

The relationship between career planning, successful job acquisition, job satisfaction, and other subsequent career outcomes has been the focus of several studies. In one such study done by Noumair (1987), the longitudinal relationship between twelfth grade career maturity and subsequent career outcomes was studied. The results reported indicate the conative dimension of career planning was the best predictor of career satisfaction. This supports the view that career planning allows students to fully understand the preparation required, as well as the duties which are required, to successfully engage in their career goal. It also implies that due to planning, and the effort required to plan, students expect to be satisfied with their career choice.

Current federal efforts to instigate work-based learning for high school students may hinge upon individual career plans at the elementary and middle school level. Rather than locking students into rigid career paths, such plans would merely spur students to think about work and how their lessons are linked with their futures (Hoerner, 1994). Last year the American Youth Policy Forum called for the U.S. Department of Education to spur states to create counseling standards that schools could use to develop Individualized Career Development

Plans (American Youth Policy Forum, cited in Vocational Training News, Feb. 23, 1993, p. 1).

Proponents of the matching model in vocational psychology (Caplan et al., 1975; Davis and Lofquist, 1984; Holland, 1985; Kahn, 1981; Strong, 1958; cited in Gottfredson and Holland, 1990; p. 389) assume that if a person has the abilities, interests, and personal traits that match the requirements, rewards, and interpersonal relations in a given work environment, the person will be satisfied. This assumption appears so self-evident that it is difficult to imagine it not being true, but the evidence that appropriate interests for a given occupation are associated with satisfaction in that occupation is uneven. "The single most efficient predictor of job satisfaction was a measure of expected satisfaction" (Gottfredson and Holland, 1990). The results support the hypothesis that congruent work environments allow the expression of a person's interests and competencies. This may be a mechanism through which worker-job congruence leads to satisfaction. The process of career planning is related to this dimension in that it promotes improved awareness of the person's interests and how they match with the environment through planning the academic courses and career training needed for entry level positions (National Consortium, 1994). However, the career planning process must be a dynamic and adaptable process which supports career development across the lifespan rather than a static one-time event.

Today people can no longer count on training for a single occupation and to maintain that occupation until retirement. Standard values of vocational

permanence and steadiness are being replaced with a need to be adaptive. Leong and Morris (1989) found that, "someone high in Vocational Identity (VI) is expected to have an external locus of control,...and to be tolerant of ambiguity."

As Leong and Morris (1989) hypothesized, perhaps the confidence that comes with having a clear awareness of one's interests, strengths, goals, and career aspirations is necessary to see the ambiguous as desirable, rather than threatening. This would contribute to one having more flexibility and thus being able to be more adaptive. Switching occupations, locations, goals, and priorities on a relatively recurrent basis are examples of this need for adaptability, as well as the need for a dynamic career planning process. In Pfeiffer's Strategic Planning Model (1986), this concept of short-term, long-term and contingency planning can be related to the increased need for career planning in this rapidly changing economy. Short-term, long-term, and contingency plans are a must to create and implement a successful career plan.

Career Decision Making

From a review of literature related to career decision making, it became apparent that as we move rapidly toward the 21st Century these trends seem likely to expand. This in turn will require a greater emphasis on the process of decision-making and career planning. There will be a greater number of vocational decisions to make and a lessening of stability in the outcomes of those decisions (Hazler and Roberts, 1984). In addition, Hazler and Roberts state that implementation of decision-making models have considerable implications for

vocational counseling. When students are helped to make a decision and take purposeful action through planning and preparation, the resulting reality testing will then have a direct influence on decisions about more long-range goals. As a consequence of implementing this process, students preparing to make occupational and personal decisions having more far-reaching economic, social, and personal consequences will have developed a clearer view of themselves, how they make decisions, and what results can be expected. Certainly this situation is preferable to perceiving oneself as inadequate or incapable of making decisions, and thus be unable to make plans and adequately prepare for meaningful work. Today, virtually all contemporary career theorists have recognized the importance of the decision-making process, both developmentally and behaviorally, as a cognitive skill required for effective vocational choice (Jepsen, 1979; Knefelkamp and Slepitza, 1976; Perry, 1970; cited in Hazler and Roberts, 1984; p. 408).

In a study funded by the U.S. Department of Labor (1993), it was reported that limited school-based career guidance services are not reaching youth. Fifty percent of American students have never taken a course in career planning, talked to a counselor about career decision making, or used a computer-based career information system. The study further reports that only 57% of eighth-graders attend schools that offer vocational counseling. As cited in this same study, McKinlay and Bloch (1989), examined the relationship between career guidance and drop out rates. Results from a survey of over 700 career information coordinators showed 62.5 percent cited "Psycho-Social Development" (an area defined to include lack of goals or career plans, lack of motivation and poor self-

concept), as the major reason for students dropping out of school. Work by Borus and Carpenter (1984), has shown that knowledge of the labor market and career maturity were also negatively correlated with the decision to drop out of school. Another survey (NIE, 1972; cited in Feller, 1986) found that;

> the majority of students selected their high school courses because they like the curriculum, not on the basis of the kind of careers completing the program would enable them to enter. This finding, together with the conclusion that almost 2.5 million youth yearly are leaving school unprepared for either further education or for work suggests that better decisions could be made on what to study in high school (p. 9).

Evidence is found that even for those students who make the decision to go to college, deciding to attend college does not necessarily mean that they have formulated a clear career goal. As reported by Poe (1991), lower division college students reported less stable vocational identities and greater needs for career information than did upper-division students, as measured with Holland's *My Vocational Situation* (MVS). These findings indicate the importance of providing career development programming while students are still in secondary school. The current findings support several studies that provide consistent evidence of the instability of career or major choice among lower-division college students (Haviland and Gohn, 1983; Titley and Titley, 1980) and evidence of the strong need for career-planning information and assistance expressed by lower-division students in general, both declared and undeclared (Walters and Sattlemire, 1979; Weissberg et al., 1982).

In *Turning Points: Preparing American Youth for the 21st Century (1989)*, the report by the Carnegie Council on Adolescent Development visualizes that all 15

year-olds will be persons enroute to a lifetime of meaningful work. As the report envisions;

> Our young adolescent will begin to understand work as both the means of economic survival and an important source of one's identity. The youth will be increasingly aware of career and occupation options.....Finally, the youth will have pursued a course of study and developed cognitively in a manner that maintains all career options (p. 15).

As Carnevale et al., (1988) observed;

> Unfortunately, the educational system provides little formal training in defining career direction and identifying the education and training needed to achieve career goals. Consequently, many people enter the workforce with little or no understanding of these skills and react to job opportunities as they surface. This patchwork quilt approach to career development, which worked well in a time when employees could reasonably expect a long-term career with one employer, is no longer viable (p. 14).

The American Counseling Association, through a recent position paper, *The Counselor and Comprehensive Programs for Work-Bound Youth* (1993), supports the policy statement *Connecting School and Employment*, of the Council of Chief State School Officers (1991) which states:

> [The] basis for a highly skilled work force begins in the school years.... Failure to ensure that every young person has considered these options [the world of work or to continue in some form of post-secondary education] and has the knowledge, skill and support to pursue any of these options--or all of them--is to circumscribe the individual's choices for life. Schools must provide needed guidance and pathways to continued education and employment...and building carefully structured paths that lead to continued learning and productive employment for all (p. 5).

One study (Montolio, 1989) found that through participating in a career and life planning course, the vocational identity of individuals increased

significantly from a pre-test to post-test. The course resulted in a career plan being developed.

Finally, the U.S. Department of Education in the National Assessment of Vocational Education (1993), cites evidence that one of the factors associated with better employment and earnings outcomes is:

> Finding a job that matches a field of study...students who do so tend to earn more money and have a lower incidence of unemployment over time than those who do not....Concentration of coursework in a particular field of study...students who concentrate their coursework in a field of study earn more in training-related jobs, are more likely to find training-related jobs, and are less likely to be unemployed than those who do not (p. xii).

Vocational Identity

Holland et al., (1980) proposed that researchers use Erikson's (1959) formulation of the identity construct to examine the relationship between vocational behavior and personality. To facilitate such research they linguistically explicated and operationally defined a new construct--vocational identity. They described vocational identity as, "the possession of a clear and stable picture of one's goals, interests, and talents" (Holland, Gottfredson, and Power, 1980).

They also devised a self-report scale to measure vocational identity (Holland, Daiger, and Power, 1980). They used the Vocational Identity Scale (VIS) to measure adjustment in a diagnostic scheme for career counseling. Self-concept theory has assumed a significant role in explanations of vocational development. The self-concept has been offered as an important factor in the process of occupational choice, in that an individual's career choice is seen as an

expression of their self-concept. This concept is supported by Ferrin (1987) through findings that there exists a positive relationship between self-esteem and vocational identity.

The construct of vocational identity comes from the trait-and-factor school of career counseling. Holland, Daiger, and Power (1980) present it as an adjustment variable in a diagnostic scheme of career counseling. Because it is also a developmental variable, vocational identity may be a unifying construct that researchers can use in trying to integrate the differential (Holland, 1985), decisional (Mitchell and Krumbolz, 1984) and developmental (Jepson, 1984) perspectives on career choice (cited in Savickas, 1985, p. 336).

Referring back to Erickson's concept of identity versus role confusion, a poor sense of identity could be expected to affect vocational, as well as more general personal developmental tasks. It is also noteworthy that studies on the correlates of the ID and the VDMD scales, the precursors of the MVS-VI scale, found that high vocational identity is correlated with decisiveness, maturity, self-confidence and not being anomic (Holland, Gottfredson, and Nafziger, 1975; Holland and Holland, 1977; cited in Leong and Morris, 1989). Possessing a strong vocational identity is believed to facilitate career decision making and confidence in one's decisions (Holland, Daiger, and Power; cited in Leong and Morris, 1989). "In general it is primarily the inability to settle on an occupational identity which disturbs young people" (Erikson, 1959, p. 2; cited in Vondracek, 1992; p. 130). This statement by Erickson has intrigued theoreticians and researchers for more than 30 years. Interestingly, however, research on identity development has

evolved mainly in the context of life-span developmental psychology, with specific attention to career development occurring only during the last decade. Although Holland and his colleagues (i.e. Holland, Gottfredson and Power, 1980) have been credited with introducing the construct of vocational identity, others had previously suggested the use of such a construct, based on Erickson's ideas about identity formation. Munley (1977; cited in Vondracek, 1992) in particular, stated that Erickson's theory;

> offers a framework for integrating career development with overall human development and makes a contribution toward offering a perspective for integrating career and personality development with career development (p. 138).

Credit should be given to Holland and his colleagues, however, for recognizing the need for postulating a construct that could be viewed as a potential mediator between personality on one hand, and vocational behaviors on the other. A recent study by Tinsley, Bowman, and York (1989) suggested that vocational identity, as measured by the Vocational Identity Scale (Holland et al., 1980), assesses mostly clarity, as intended by Holland and his colleagues, but that it also represents aspects of certainty, decision-making obstacles, and informational deficit. What Holland's construct of vocational identity lacks, however, is the rich developmental meaning and significance of the original foundations of Erickson, who believed that the epigenesis of identity could be understood within the context of the life cycle (Erickson, 1968). In vocational literature, it is the work of Bordin (1984; cited in Vondracek, 1992) that has predominantly dealt with the construct of identity. Bordin stated his theory in the

form of several propositions in 1984. Particularly salient to the current discussion is proposition seven;

> one source of perplexity and paralysis at career decision points will be found in doubts and dissatisfactions with current resolutions of self" (1984; cited in Vondracek, 1992, p. 137).

According to findings in the study (Leong and Morris, 1989), support for the earlier construct validity demonstrating that people who are undifferentiated in their interests and career aspirations feel less confident and are more likely to experience social anxiety and seek to avoid social situations. This study also found vocational identity to be positively correlated with career maturity. The finding that vocational identity is positively correlated with career maturity is expected in light of the similarity of the two constructs (Crites, 1978). Conceptually, it makes sense that individuals with strong vocational identity would also have a high level of career maturity. Fretz and Leong (1982; cited in Leong and Morris, 1989, p. 122) found that vocational identity positively correlated with the Career Maturity Inventory (CMI) and negatively correlated with the Career Decision Scale (CDS). The correlation between vocational identity and the CDS was negative because high scores on the CDS indicates career indecisiveness.

Within Super's concept, career maturity is acquired through successfully accomplishing developmental tasks within a continuous series of life stages (Super, 1984; cited in Zunker, 1990; p. 29). Various traits of career maturity are planning, accepting responsibility, and awareness of various aspects of a preferred vocation. A longitudinal research project launched in 1951 was designed to follow the vocational development of ninth grade boys in Middletown, New York (Super

and Overstreet, 1960; cited in Zunker, 1990; pp. 27-29). The findings suggest that the ninth grade boys in this study had not reached a level of understanding of the world or work sufficient to make adequate career decisions. However, those individuals who were seen as "career mature" in this project (based on their knowledge of an occupation, planning, and interest) were significantly more successful as young adults. This suggests there is a relationship between career maturity and adolescent achievement of a significant degree of self-awareness, knowledge of occupations, and developed planning capability. Thus, ninth grade career behavior does have some predictive validity for the future.

Some of the most convincing evidence of the complexity of career indecision has been found by Lucas and Epperson (1990). The results reported in the study confirm that those identified with a low vocational identity, thus high career indecision, may not request or seek career guidance because of lack of distress and commitment toward a career. The development of identity is an important task in adolescence and early adulthood (Chickering, 1976; cited by Lucas and Epperson, 1990, p. 387). It appears that the process of developing a career plan could support or help facilitate the development of identity in adolescence.

The finding that work salience is directly related to career maturity (which has been related to vocational identity) has important implications for practice in career planning and counseling (Super and Nevill, 1984). Knowing how motivated students are to pursue the working role, and why they want to pursue it if so

motivated, is basic to planning a career program that is relevant to students needs and work readiness.

According to Savickas (1985), the construct of vocational identity was supported because it was found that it includes both vocational and identity components which are both distinct. Along the continuum of vocational development tasks, vocational identity related most to crystallizing career preferences and related progressively less to tasks further along the continuum. This finding fits with vocational development theory because vocational identity can be the substantive basis for crystallizing preferences about career field and level. This is an important issue as the development of a career plan of study is investigated in relation to a measure of vocational identity. The career planning process could serve as a vehicle to assist in the development of vocational identity. As Savickas further states;

> the association between vocational identity and the other exploration tasks indicates that vocational identity relates to dealing with these tasks but not as much as it relates to crystallizing career preferences (p. 330).

In Savickas' study, vocational identity shared almost twice as much common variance with career crystallization (19%) as it shared with career specification (10%), the next task in the developmental continuum as specified by Tiedemann's approach to career development (Tiedemann and O'Hara, 1963; cited in Zunker, 1990). According to Tiedemann, career development unfolds within the general process of cognitive development as one resolves ego-relevant crises. He believed the evolving ego identity is of central importance in the career development process. Tiedemann viewed decision making as a continuous

process in which individuals will change their courses of career action, generally by leaving a particular setting or environment (Zunker, 1990).

Savickas' findings make some sense because committing oneself with some certainty to a choice requires much more than a vocational identity. In particular, it requires compromise with reality factors such as training and employment opportunities. Additional evidence of construct validity for the vocational identity scale of the MVS was provided (Lucas, Gysbers, Buescher, and Heppner, 1988; cited by Mauer and Gysbers, 1990, p. 157), when the findings of the study reported undeclared university freshmen, adults seeking career counseling, and displaced homemakers who were undecided all had lower vocational identity scores than the populations of these participants, in general. The results of the Mauer and Gysbers study suggest that vocational identity is not a unitary construct. Instead, it seems to be a more complex construct that contains several dimensions. Holland, Daiger, and Power (1980) may have hinted at this complexity when they used the words goals, interests, personality, and talents in their definition of vocational identity. Mauer and Gysbers (1990) also reported that 45% of the entering freshmen studied indicated a limited amount of knowledge about what workers do in various occupations and the need to increase the number of occupations under consideration. Several points emerge from this review. First, entering freshmen have a variety of career concerns. While, these may be expressed as generic "confusion about major," they may be related to anxiety, confidence, or the need for information. Second, it seems clear the data underscores the point that vocational identity is a complex mixture of personal-

emotional issues such as anxiety and confidence, as well as issues related to the need for occupational information. Third, the data emphasizes that students want and need occupational information. An individual with a high vocational identity score is thought to possess "a clear and stable picture of one's goals, interests, personality, and talents" (Holland et al., 1980). An individual with a low score is seen as lacking such a picture, and as a result may lack confidence and have difficulty making decisions. Thus, it could be an important measure to determine whether the act of developing a plan of study could have an effect on the vocational identity of individuals.

Munson (1992), examined self-esteem and career salience of high school students in the context of Super's theory of life span career development (Super, 1980; Super, Starishevsky, Matlin, and Jordaan, 1963; cited in Munson, 1992, pp. 362). His theory posits that high self-esteem students have clearer and more definitive conceptions of themselves relative to career decision making than do low self-esteem students. This study hypothesized that high and low self-esteem students significantly differ in vocational identity and career salience, with high self-esteem students scoring higher. The results (Munson, 1992), indicate that high self-esteem students, as measured with the Self-Esteem Inventory (SEI), had significantly higher scores on vocational identity, and it could be therefore concluded that they had a more clear and consistent view of their goals, interests, personality, and talents than low self-esteem students. Students with high self-esteem scored significantly higher on vocational identity, which has been shown to be related to decidedness and a sense of well-being (Holland, 1985). Students

high in self-esteem also scored higher in several career salience variables. An interesting pattern emerged suggesting that in addition to having higher vocational identity, high self-esteem students scored higher on the basis of greater participation, commitment, and values expectations in school and home/family roles.

In a 1990 study, Mauer found that low vocational identity scores proved to be an indicator of instability of college major choice, while average and high vocational identity scores signified stability in college major choice over time. Vocational identity, as measured by Holland's *My Vocational Situation*, can be related to a student's decision to continue in a post-secondary academic program. The study by Siar (1987) indicates that there exists a significant relationship between vocational identity and persistence. The desire and persistence to complete post-secondary education is important as the technology advances and continuing education becomes more important to the success of workers. As previously cited by Cetron and Cetron (1991), with more than half of all jobs requiring some type of post-secondary education and training, the development of high vocational identity becomes an important issue in preparing students for successful entry into the workplace.

Summary

Chapter II provided a review of the literature and research relative to career planning, career decision making, and the development of vocational identity. While a considerable amount of investigation was found in each of these

areas, there was a conspicuous absence of research which related the important constructs of career planning and vocational identity. Literature which focused on career decision making or indecisiveness focused on the causes or contributing factors. Only one study found related decision making ability being enhanced through a career and life planning course, which resulted in the development of a career plan, but the study failed to specifically link the development of a career plan or plan of study to the development of one's vocational identity.

Literature which examined the construct of vocational identity examined how it was developed and related it well to the development of self-esteem and the ability to define one's goals. The literature further established that the possession of high vocational identity, as measured by Holland's *My Vocational Situation* was desirable, since possession of vocational identity enhanced one's abilities to have a clear and stable picture of one's goals, interests, and talents. However, the literature did not identify the development of a plan of study as one of the ways in which vocational identity could be developed or strengthened. The literature further linked vocational identity with similar constructs such as career maturity and career salience. These two constructs also relate to the ability to make clear career decisions and positively relate it to future career success.

Chapter III describes a research design that focused on the development of a plan of study among ninth grade Oklahoma students and the effect that process has on vocational identity. By comparing ninth grade students who have developed a plan of study with a control group which has not engaged in that process, it was hoped that more could be learned about the importance of

developing a *Four-Year Plan of Study* on the development of students in public school and their ability to set career goals for the future.

CHAPTER III

RESEARCH DESIGN AND PROCEDURES

Introduction

The purpose of this study was to determine if the development of a *Four-Year Plan of Study* by ninth grade students has an impact on the vocational identity of the student.

This chapter is divided into five main sections:

1. Research Design
2. Selection of the Subjects
3. Instrumentation
4. Collection of Data
5. Analysis of Data

Research Design

In investigating past research studies, involving the development of a career plan of study related to chronological age, gender, or developmental experiences such as the act of planning, nothing was found which related this process with the development or definition of vocational identity of individuals. This is significant since many current movements to prepare students for the workplace [e.g., Tech

Prep (Hull and Parnell, 1992); High Schools That Work (Bottoms, Presson, and Johnson, 1992); School To Work Transition (Oklahoma Department of Vocational and Technical Education, 1994)] advocate the development of a plan of study to form a focus and a foundation on which to base a student's educational courses and training related to a career major. The development of vocational identity refers to the possession of a clear and stable picture of one's goals, interests, personality, and talents (Holland, Daiger and Power, 1980). The possession of these traits are desirable and are needed by the individual within the career planning process.

The research design selected for this study used the pre-test/post-test control group design with a cluster sample of ninth grade students. The purpose of the study was to investigate the comparison of the development of vocational identity by those students who develop a *Four-Year Plan of Study* with the development of vocational identity of ninth grade students who do not develop a *Four-Year Plan of Study*. Campbell and Stanley (1972) diagram the study design as follows:

O x O

O O

The null hypothesis tested was H_o: there is no difference in the vocational identity development of ninth grade students who develop a *Four-Year Plan of Study* and ninth grade students who do not develop a *Four-Year Plan of Study*.

Subjects in the study were administered the Vocational Identity Scale of *My Vocational Situation* (Holland et al., 1980) prior to the development of the *Four-Year Plan of Study* or in the first nine weeks of class with the control group. The same instrument was administered following the development of the *Four-Year Plan of Study* or during May for the control group. Gain scores were analyzed to determine the effect the independent variable (Plan of Study) had on the dependent variable (Vocational Identity).

Selection of the design was based, in part, on Campbell and Stanley's (1972) suggestion that it was well suited for the field of education where in tact cluster groups were a characteristic of the research subjects.

Selection of the Subjects

The entire population for the study included ninth grade students enrolled in eleven public schools which were involved in the Oklahoma High Schools That Work project during the period beginning September 1993 and ending May 1994. The total number of enrollees was approximately 1,010 ninth grade students in the 22 High Schools That Work schools in Oklahoma. Of the 22 High Schools That Work schools, eleven of them developed *Four-Year Plans of Study* with ninth grade students, with six agreeing to participate in the study. Population data were provided by the Planning Division of the Oklahoma Department of Vocational and Technical Education in Stillwater, Oklahoma, and the Southern Regional Education Board (SREB). A cluster sample was used since the students would be administered the instrument and develop the *Four-Year Plan of Study* as an intact

classroom group. The same intact classroom group was used for both activities. The total sample size was 567 ninth grade students from six High Schools That Work project public schools and 92 ninth grade students from one control group school. The control group school was not one of the High Schools That Work project schools since all 22 High Schools That Work schools develop a *Four-Year Plan of Study* either at the eighth or ninth grade. The majority of the project schools elect to develop the plans of study during the eighth grade. If one of these schools was used as the control group, the development of a *Four-Year Plan of Study* at the eighth grade had the potential of confounding the effect of the *Four-Year Plan of Study* on vocational identity as measured during the ninth grade in this study. For this reason, a school was selected as a control group school which did not participate in the High Schools That Work project.

The selection of the experimental treatment schools was based on the 22 schools in Oklahoma who were participating in the High Schools That Work project during the 1993-94 school year. All project schools were completing plans of study with their students prior to the tenth grade, as partial fulfillment of their High Schools That Work agreement with the Oklahoma Department of Vocational and Technical Education. Eleven of the 22 school districts were developing *Four-Year Plans of Study* with ninth grade students. This information was gathered from the school profile forms compiled for the Southern Regional Education Board by each school participating in the High Schools That Work project. Of the 11, five declined to participate when contacted by phone by the researcher. The participating six schools selected classes in which the *Four-Year*

Plans of Study are normally developed. In four of the six schools, intact English classes were used to administer the pre-test, post-test and develop the *Four-Year Plan of Study*. In two of the six schools, intact American History classes were used for the pre-test, post-test and the development of *Four-Year Plans of Study*. In all the schools, the pre-test, post-test and *Four-Year Plans of Study* were completed in an academic course in which all ninth grade students were required to enroll.

The control group school was selected as a matter of convenience and for its mixed composition of students living in rural, suburban, and urban settings. This student mix was representative of the settings of the experimental schools, though the effect of community size was not one of the variables examined in this study. It was known that this school did not develop plans of study with ninth grade students and that other intentional activities were not being done to affect career planning skills of students. In the control group school, the cluster sample was comprised of five different intact English classrooms. The six experimental schools and one control group school who participated in the study were identified as school A, B, C, D, E, F, and G.

Instrumentation

The instrument used in measuring the vocational identity of ninth grade students was the vocational identity scale of *My Vocational Situation* (Appendix A) developed by Holland et al., (1980). The vocational identity scale consists of 18 true-false items. Scale scores range from 0 to 18, with higher scores being

indicative of a stronger sense of vocational identity (Lapan, Gysbers, Hughey & Arni, 1993).

The instrument utilized the Kuder-Richardson (KR-20) formulas to determine the rationale equivalence reliability. The rationale equivalence reliability is not established through correlation, but rather estimates internal consistency by determining how all items on a test relate to all other items and to the total test. Application of the Kuder-Richardson formula results in an estimate of reliability that is essentially equivalent to the average of the split-half reliabilities computed for all possible halves. Its application usually results in a more conservative estimate of reliability than the split-half formula (Popham and Sirotnik, 1973).

The KR 20's for the vocational identity scale was found to be .86 for high school students in grades 9 through 12. The three scales are presented in Table I for the high school samples used to devise the scales and for an accidental sample of college students and workers who were given the MVS as a part of the validation process of *My Vocational Situation* (Holland et al., 1980). The construct validity of the MVS scales lies in the origin of the items, the scale development, and analyses reported by the author which tested multiple hypotheses about the relation of vocational identity to gender, age, educational level, vocational aspirations, external criteria, and other criteria.

Table I indicates the three MVS scales have small to moderate correlations with age. Holland (1980, p. 4) hypothesized that the vocational identity scales should be positively correlated with age.

TABLE I

MEANS, STANDARD DEVIATIONS, AND SCALE RELIABILITIES (KR 20) FOR SAMPLES OF HIGH SCHOOL STUDENTS, COLLEGE STUDENTS, AND WORKERS USED FOR DEVELOPING MY VOCATIONAL SITUATION

SCALE	MALE				FEMALES			
	KR20	X	SD	N	KR20	X	SD	N
Vocational Identity								
High School Students	.86	11.20	5.46	185	.86	11.27	5.39	311
College Students and Workers	.89	16.54	5.32	291	.88	14.86	5.36	301

Note: The N's are less than the number of people surveyed due to incomplete questionnaires.
Taken from: Holland, et al., 1980, p. 3.

Changes in vocational identity scores were determined by the pre-test/post-test difference of each student involved in the study. The pre-test was administered in the first nine weeks of class during the months of September and October 1993 for the majority of the subjects. The pre-test was administered either by the counselor or by the classroom teacher. The school utilized the staff person who assisted students in developing the plans of study. Post-tests were administered to students following the development of the plan of study through May 1994 by the same staff member who administered the pre-test. A cover sheet (Appendix B) was attached to each pre-test advising the student of the voluntary nature of the pre-test and the confidential nature of the results. The instrument used to develop the *Four-Year Plans of Study* are the plans of study (Appendix C)

developed by the Career Information Unit of the Guidance Division within the Oklahoma Department of Vocational and Technical Education (ODVTE). The ODVTE plans of study were developed around 13 career clusters which relate to the Oklahoma computerized career information system, *Career Search*. The ODVTE Plans of Study consist of a listing of possible career options contained within the selected career cluster. The *Four-Year Plan of Study* also contains a listing of academic and vocational courses which support preparation within the career cluster. Courses essential for one-half to one-third of the occupations within the cluster are noted. The ODVTE Plan of Study also contains a suggested four-year plan and a blank four-year plan which is to be developed by the student, school staff member, and parent. Signatures of each are required on the *Four-Year Plan of Study*.

Collection of Data

The study and data collection process was approved by the Oklahoma State University Institutional Review Board, approval number ED-44-030 (Appendix D).

The process of obtaining data from the six experimental schools and one control group school involved in the study began in the fall of 1993. The person serving as the contact for the High Schools That Work project in each school was contacted individually about the study and given an orientation regarding its scope, rationale, and procedure. The principal in the control group school served as the initial contact. A contact person in each of the treatment schools and the control group school was then assigned to represent the school relative to the

study. A similar, more detailed, orientation was given to the contact person directly involved with the study.

In early September through early October, pre-tests were mailed to each site with an accompanying correspondence (Appendix E) explaining the procedure to be used in administering the tests. The start up date was determined by each school individually, since activities and staffing varied, but all pre-tests were to be administered within the first nine weeks of school. Contact was made at least two times with each school contact throughout the year by telephone, letter, or personal visit to remind them about time-lines and that new students should be pre-tested immediately before the plans of study were developed. In January, a second correspondence (Appendix F) was mailed indicating May as the cut-off date for the final post-testing of all subjects in the study. Pre-tests were returned to the Oklahoma Department of Vocational and Technical Education between late November 1993 and late January 1994. Post-tests were returned to the Oklahoma Department of Vocational and Technical Education between mid-April and mid-June 1994.

Descriptive information was gathered on the MVS (Appendix A), as the pre-test was completed. The categories of gender, education completed (current grade), and age were contained on the instrument and was completed by each participant.

A total of 567 pre-tests were administered in the six experimental schools participating in the study. A total of 537 post-tests were recovered for the subjects in the experimental schools.

A total of 92 pre-tests were administered in the control group school and a total of 92 post-tests were recovered for the subjects in the control group school.

Of the 92 subjects given pre-tests in the control group school, 92 post-tests were retrieved for a recovery percentage of 100 percent. This compared to 567 and 537, respectively for the six schools in the experimental group. This resulted in a recovery rate of 94.7 percent. Table II reveals the distribution and recovery rate of these instruments by school.

The reason for less than a 100 percent recovery rate in the six experimental schools were students who completed the pre-test transferring from the school between the pre-test and post-test sessions.

TABLE II

DISTRIBUTION OF PRE-TESTS, POST-TESTS, AND RECOVERY RATES BY SCHOOL

School	Pre-Test In	Post-Test In	Recovery %
A	32	25	78.1
B	41	38	92.7
C	178	173	97.2
D	89	77	86.5
E	98	96	98.0
F	129	128	99.2
G+	92	92	100.0
Totals	659	629	95.4

+ = Control Group

Analysis of Data

The data collected from the two administrations of the vocational identity scale of *My Vocational Situation* were entered onto a tracking form for coding (Appendix G) to maintain confidentiality of the schools and subjects. The coded data were then entered into a computer database for sorting and analysis. The statistical program Statistical Analysis System (SAS) was used to provide descriptive statistics and to perform statistical Analysis of Variance (ANOVA), the Tukey Studentized Range HSD (honestly significant difference) test and Analysis of Covariance (ANCOVA). The General Linear Models (GLM) procedures subroutine was used in the statistical analysis of ANOVA and ANCOVA. The GLM procedure uses the principle of least squares to fit linear models (SAS, 1979).

Descriptive data to describe the population included gender, age of the subjects, and educational level of attainment (all ninth grade) was gathered during the completion of the vocational identity scale of *My Vocational Situation.*

ANOVA was used to compare the pre-test scores of each school, the experimental group with the control group, the pre-tests of males and females, and the three identified age categories of subjects. ANOVA was also used to compare the post-test scores of each of the seven schools, the experimental group with the control group, the post-test scores of males and females, and the three identified age categories of subjects.

ANCOVA was used for the pre-test controlling for gender, pre-test controlling for age, and post-test controlling for pre-test in the experimental and

control groups. According to Lapan, Gysbers, Hughey and Arni (1993), vocational identity pre-test scores on a covariate explain that portion of vocational identity change score due to possible influences of prior testing and statistical regression. Thus, such effects can be ruled out as an explanation for the relationship between a given treatment and vocational identity change. ANCOVA is used when the researcher is attempting to determine whether observed differences between the means of two or more groups may be due to chance or systematic differences among treatment populations (Shavelson, 1988). Shavelson (1988) indicated this is accomplished by statistically removing predictable individual differences from the dependent variable; thereby providing a more precise estimate of experimental error than between subjects design. Shavelson (1988) noted that ANCOVA is a very powerful test of the null hypothesis (p. 533).

Shavelson (1988) identified three design requirements when using Analysis of Covariance. They are:

1. There is one independent variable with two or more levels. These levels may differ quantitatively or qualitatively.
2. A covariate is measured prior to the implementation of the treatment and control conditions.
3. Subjects are assigned to only one group in the design.

Shavelson (1988) also identified five assumptions made by the researcher when employing the ANCOVA for statistical analysis. The assumptions are:

1. Independence - An individual's scores on the covariate and dependent variable are independent of the scores of all other subjects.

2. Normality - For individuals with the same score on the covariate in the same group, the dependent variable has a normal distribution.

3. Homogeneity of Variance - The variance of the dependent scores for individuals with the same covariate score is the same for all groups and covariate scores.

4. Linearity - It is assumed that in the population, the regression of the dependent variable in the covariate is linear in each group.

5. Homogeneity of Regression Slopes - In the population, the regression of the dependent variable on the covariate is the same in each group.

The study met the above parameters. Seven schools, six experimental group schools, and one control group school, were used to investigate the difference in the measure of vocational identity based on the development of a *Four-Year Plan of Study*.

A total score for the vocational identity scale was obtained by adding the total number of responses subjects marked false. The range of scores were scaled from 0 to 18. The higher the number of false responses, the stronger the vocational identity, or the more clear individuals are perceived to be in terms of their vocational goals (Mauer and Gysbers, 1990). Gain scores were computed for each subject taking both a pre-test and post-test using the vocational identity scale of *My Vocational Situation*. The difference between the pre-test and post-test scores on vocational identity are identified as gain scores.

The Tukey (HSD) test was performed on the significant ANOVA analysis on the pre-tests and post-tests of the control and experimental groups to identify

the source of the statistically significant interactions. The Tukey (HSD) controls the Type I experimental error rate. According to Shavelson (1988), the value of HSD is based on a sampling distribution called the studentized range statistic. The sampling distribution of the value of studentized range statistic builds on the fact that for random samples from the same population, the range of sample differences tends to increase as the sample size increases. The differences between all pairs of means are compared with the value of HSD. If the difference between a pair of means is greater than or equal to HSD, the two means are (honestly) significantly different at the specified level. An alpha level of .05 was selected to determine statistical significance for the ANOVA, ANCOVA, and Tukey (HSD) analysis.

CHAPTER IV

FINDINGS

Introduction

This chapter presents the analysis of the data from the study investigating the effect the development of a *Four-Year Plan of Study* (independent variable) has on the vocational identity (dependent variable) of ninth grade students. Six Oklahoma High Schools That Work sites were selected as the experimental group schools and one school was selected as the control group school. Vocational identity was measured by the number of false responses taken from pre-test/post-test difference using the vocational identity scale from *My Vocational Situation* (Holland et al., 1980). A description of the sample, the statistical analyses, and findings are presented in this chapter.

Description of the Sample

A cluster sample of 567 ninth grade students from six High Schools That Work project public schools and 92 ninth grade students from one control group school comprised the subjects for the study. As indicated by Table III, the experimental group included 305 males (53.8%) and 262 females (46.2%). As shown in Table IV the experimental group was comprised of four age categories.

The 14 year-olds had 272 subjects (49.91%), the 15 year-olds had 233 subjects (42.75%), the 16 year-olds had 38 subjects (7.04%), and the 17 year-olds had 2 subjects (0.3%). The N's are less than the number of subjects due to incompletely filled out forms.

TABLE III

DISTRIBUTION OF DEMOGRAPHIC INFORMATION OF EXPERIMENTAL GROUP BY GENDER
N = 567

Gender Variable	Frequency	Percentage
Female	262	46.2
Male	305	53.8

TABLE IV

DISTRIBUTION OF DEMOGRAPHIC INFORMATION OF EXPERIMENTAL GROUP AMONG FOUR AGE CATEGORIES
N = 545

Age Variable	Frequency	Percentage
14	272	49.91
15	233	42.75
16	38	7.04
17	2	.3

As shown by Tables V and VI, the control group had 49 males (53.3%) and 43 females (46.7%) in the sample and was comprised of two age categories. The 14 year-olds had 61 subjects (66.3%), the 15 year-olds had 31 subjects (33.7%), the 16 and 17 year-olds had no control group subjects.

TABLE V

DISTRIBUTION OF DEMOGRAPHIC INFORMATION
OF CONTROL GROUP BY GENDER
N = 92

Gender Variable	Frequency	Percentage
Female	43	46.7
Male	49	53.3

TABLE VI

DISTRIBUTION OF DEMOGRAPHIC INFORMATION
OF CONTROL GROUP AMONG AGE CATEGORIES
N = 92

Age Variable	Frequency	Percentage
14	61	66.3
15	31	33.7

Tables VII and VIII show the total number of females and males in both the control and experimental groups, the frequency of gender, the percent of the total of each gender, the frequency distribution of four age categories, and the percentage for each age category. The age category 14 years comprised the largest percentage of the sample (52.28%).

Statistical Analysis

Table IX contains the comparison of the control and experimental groups on the pre-test for vocational identity using the ANOVA procedure. A statistically

significant difference (0.0035) between the pre-test vocational identity scores of the control and experimental groups was found. Since the difference was statistically significant, further examination was needed to determine the source of the difference. It has been shown that difference in gender was not statistically significant. The next source to be examined was age of the subjects. In the normative data for the instrument, vocational identity scores were found to be positively correlated with age (Holland et al., 1980, p. 7).

TABLE VII

DISTRIBUTION OF DEMOGRAPHIC INFORMATION FOR EXPERIMENTAL AND CONTROL GROUPS BY GENDER
N = 659

Gender Variable	Frequency	Percentage
Female	305	46.3
Male	354	53.7

TABLE VIII

DISTRIBUTION OF DEMOGRAPHIC INFORMATION FOR EXPERIMENTAL AND CONTROL GROUPS BY AGE
N = 637

Age Category	Frequency	Percentage
14	333	52.28
15	264	41.44
16	38	5.98
17	2	.3

TABLE IX

COMPARISON OF CONTROL AND EXPERIMENTAL GROUPS ON PRE-TEST SCORES OF VOCATIONAL IDENTITY USING ANALYSIS OF VARIANCE (ANOVA) PROCEDURE
N = 636

	Control	Experimental
N	92	545
Pre-Test Mean	10.38	8.89
SD	4.59	4.49

Source	Sum of Squares	DF	Mean Square	F
Groups	174.44	1	174.44	8.6*
Error	12886.297	635	20.29	
Total	13060.74	636		

F crit (.05; 1,635) = 3.86
*p<.05

Table X shows the pre-test mean scores, and standard deviation measuring vocational identity for both the experimental and control groups.

Table XI shows the comparison of female and male post-test vocational identity scores using the ANOVA procedure. There is not a statistically significant difference between females and males on the post-test scores for vocational identity. The observation of no significant difference in both female and male pre-test and post-test vocational identity scores appears to be consistent with the normative data for the instrument (Holland et al., 1980, p. 7). The N's are less than the number of subjects tested due to incompletely filled out pre- and post-tests. As previously noted, the alpha level of .05 was selected to determine statistical significance. The probability levels are precise and are not table values.

TABLE X

COMPARISON OF FEMALE AND MALE PRE-TEST SCORES ON VOCATIONAL IDENTITY FOR BOTH EXPERIMENTAL AND CONTROL GROUPS USING ANALYSIS OF VARIANCE (ANOVA) PROCEDURE
N = 636

	Female	Male
N	292	345
Pre-Test Mean	8.84	9.33
SD	4.48	4.57

Source	Sum of Squares	DF	Mean Square	F
Gender	38.64	1	38.64	1.88
Error	13022.10	635	20.51	
Total	13060.74	636		

F crit (.05; 1,635) = 3.86
p>.05

TABLE XI

COMPARISON OF FEMALE AND MALE POST-TEST SCORES ON VOCATIONAL IDENTITY FOR BOTH EXPERIMENTAL AND CONTROL GROUPS USING ANALYSIS OF VARIANCE (ANOVA) PROCEDURE
N = 612

	Female	Male
N	305	354
Post-Test Mean	11.19	11.14
SD	0.37	0.37

Source	Sum of Squares	DF	Mean Square	F
Gender	20.32	1	20.32	1.17
Error	10635.81	611	17.41	
Total	10656.13	612		

F crit (.05; 1,611) = 3.85
p>.05

In examining a comparison of females and males, in both the experimental and control group schools, on the pre-test and post-test for vocational identity using the ANCOVA procedure controlling for gender shown in Table XII, there is not a statistically significant difference between females and males.

TABLE XII

COMPARISON OF PRE-TEST AND POST-TEST MEAN GAIN SCORES OF CONTROL AND EXPERIMENTAL GROUPS FOR VOCATIONAL IDENTITY USING ANALYSIS OF COVARIANCE (ANCOVA) CONTROLLING FOR GENDER
N = 590

	Control	Experimental
N	92	545
Pre-Test Mean	10.38	8.89
Post-Test Mean	10.44	12.19
Gain Score	0.06	3.30
SD	0.30	0.11

Source	Sum of Squares	DF	Mean Square	F
Gender	24.74	1	24.74	3.74
Error	3892.85	588	6.62	
Covariate	6012.24	1	6012.24	908.13
Total	9929.83	590		

F crit (.05; 1,590) = 3.85

Four age categories were initially identified in the study as part of the demographic information collected as presented in Tables IV, VI, and VIII. Since the 17 year-olds category comprised only three percent of the subjects, they were combined with the 16 year-olds category for statistical analysis. There was a statistically significant difference between the experimental and control groups;

therefore, the analysis of the effect of age was investigated using the age categories identified in the demographic information.

Table XIII contains a comparison of the pre-test vocational identity scores for the three age categories using the ANOVA procedure. The comparison indicated a statistically significant difference (0.0001) among the three age categories on pre-test scores for vocational identity.

TABLE XIII

COMPARISON OF THREE AGE CATEGORIES (14-15; 14-16; AND 15-16) ON PRE-TEST SCORES FOR VOCATIONAL IDENTITY USING ANALYSIS OF VARIANCE (ANOVA) PROCEDURE
N = 636

		Age Categories		
		14	15	16
N		333	264	40
Pre-Test Mean		7.65	8.45	9.80
SD		4.40	4.51	4.82
Source of Variation	Sum of Squares	DF	Mean Square	F
Age	359.36	2	179.68	8.97*
Error	12701.38	634	20.03	
Total	13060.74	636		

F crit (.05; 1,635) = 3.86
*p<.05

Table XIV contains the comparison of the pre-test vocational identity scores for the three age categories using the ANOVA procedure with Tukey's Studentized Range (HSD) for the variable pre-test. The Tukey (HSD) is used to control for Type I experimental error rate. An alpha level of .05 was utilized to

determine statistical significance. The following pairwise combinations of age were compared for statistical significance: 14 to 15 year-olds; 14 to 16 year olds; and 15 to 16 year-olds. The comparisons of the 14 to 15 year-olds and 14 to 16 year-olds categories were found to have significant differences among pre-test scores for vocational identity. The comparisons of 15 to 16 year-olds categories were not found to have significant differences between pre-test scores for vocational identity. The fact that a difference occurred between two of three age categories should not be overlooked. Speculation as to why this surfaced during the research might begin with an examination of the normative data of the instrument used. In the normative data for the instrument, vocational identity scores were found to be positively correlated with age (Holland et al., 1980, p. 7). Because the two oldest categories were not significantly different appears to be an anomaly and should be investigated further.

TABLE XIV

COMPARISON OF THREE AGE CATEGORIES (14-15; 14-16; AND 15-16) ON PRE-TEST SCORES FOR VOCATIONAL IDENTITY USING TUKEY'S (HSD) TEST

Age Comparison	Difference Between Means	Significance
14 to 15	1.3510	*
14 to 16	2.1518	*
15 to 16	0.8008	

* = Statistically significant at or beyond the .05 alpha level

Table XV contains the ANCOVA for the post-test for vocational identity controlling for age in both the experimental and control groups. There is not a significant difference in post-test scores for vocational identity among groups when controlling for age.

TABLE XV

COMPARISON OF POST-TEST SCORES FOR VOCATIONAL IDENTITY CONTROLLING FOR AGE CATEGORIES (14, 15, AND 16 YEAR-OLDS) USING ANALYSIS OF COVARIANCE (ANCOVA)
N = 527

	Age Categories		
	14	15	16
N	230	258	39
Post-Test Mean	12.03	11.89	12.20
Standard Deviation	0.15	0.41	0.41

Source	Sum of Squares	DF	Mean Squares	F
Age	4.28	2	2.14	0.32
Error	3893.04	587	6.63	
Covariate	5842.36	1	5842.36	880.92
Total	9929.83	590		

F crit (0.5, 3,587) = 2.62
$p > .05$

Table XVI contains a comparison of the post-test scores for vocational identity with the control and experimental groups using Analysis of Variance (ANOVA) procedure. The comparison was found to be statistically significant (0.001). To identify the source of variance, the Tukey HSD was used as a post-

hoc. Significant differences were identified between the control group and three of six experimental group schools at the .05 level of significance.

TABLE XVI

COMPARISON OF CONTROL AND EXPERIMENTAL GROUPS ON POST-TEST SCORES OF VOCATIONAL IDENTITY USING ANALYSIS OF VARIANCE (ANOVA)
N = 633

	Control		Experimental	
N	92		542	
Post-Test Mean	11.11		11.99	
SD	4.18		4.18	
Source	Sum of Squares	DF	Mean Square	F
Model	643.98	6	107.33	6.43*
Error	10464.16	627	16.69	
Total		633		

F crit (.05; 6,627) = 2.11
*p <.05

Table XVII contains the comparison of the post-test vocational identity scores for the six experimental schools and one control group school using the ANOVA procedure with Tukey's Studentized Range (HSD) for the variable post-test. An alpha level of .05 was utilized to determine statistical significance. The following pairwise combinations of schools were compared for statistical significance: School D to G; D to F; E to F; and C to F were found to have significant differences among post-test scores for vocational identity. The fact that only four out of the 21 pairwise combinations were statistically significant would indicate

additional study of the post-test scores within individual schools is needed. This investigation was not included as a part of this study.

TABLE XVII

COMPARISON OF EXPERIMENTAL AND CONTROL GROUP SCHOOLS ON POST-TEST SCORES FOR VOCATIONAL IDENTITY USING TUKEY'S (HSD) TEST

School	Difference Between Mean	Significance
A to B	-1.02	
A to C	-1.59	
A to D	-1.99	
A to E	-1.59	
A to F	0.73	
A to G	-0.08	
B to C	-0.56	
B to D	-0.97	
B to E	-0.57	
B to F	1.75	
B to G	0.95	
C to D	-0.41	
C to E	-0.01	
C to F	2.31	*
C to G	1.51	
D to E	0.40	
D to F	2.72	*
D to G	1.92	*
E to F	2.32	*
E to G	1.52	
F to G	0.80	

* = Statistically significant at or beyond the .05 alpha level

However, as shown in Table XVIII, when the post-test scores for the control and experimental group were compared using Analysis of Covariance (ANCOVA) procedure, there was a statistically significant difference (0.0001) between the control and experimental groups after controlling for pre-test.

TABLE XVIII

COMPARISON OF EXPERIMENTAL AND CONTROL GROUPS ON POST-TEST SCORES FOR VOCATIONAL IDENTITY CONTROLLING FOR PRE-TEST USING ANALYSIS OF COVARIANCE (ANCOVA)
N = 634

		Experimental	Control	
N		542	92	
Post-Test Mean		12.19	10.45	
SD		0.11	0.29	
Source	Sum of Squares	DF	Mean Squares	F
Groups	188.62	1	188.62	29.91*
Error	3708.70	588	6.31	
Covariate	6167.65	1	6167.66	977.86
Total	9929.83	590		

F crit (.05; 2,588) = 3.01
*p <.05

Examination of the Null Hypothesis

The data presented in this study revealed a statistically significant difference between the vocational identity post-test mean scores of the experimental group as compared to the control group. As shown in Table XVIII students who developed a *Four-Year Plan of Study* had higher post-test vocational identity

scores than the students in the control group who did not develop a *Four-Year Plan of Study*. A higher score indicates a greater measure of vocational identity as measured by *My Vocational Situation*. Using the pre-test as a covariate, the difference in the mean post-test scores of the experimental group and the control group was found to be statistically significant (0.0001). The effect of age on the pre-test vocational identity scores of both groups appeared to be eliminated in the post-test scores when the pre-test was used as a covariate as shown in Table XV.

The null hypothesis tested was H_o: There is no difference in the vocational identity of the two groups. Based on the analysis of the data from this study, the researcher rejected the null hypothesis in relation to the effect on vocational identity of the development of a *Four-Year Plan of Study* on ninth grade students.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study was conducted to determine if the development of a *Four-Year Plan of Study* by ninth grade students had an impact on the vocational identity of the student. An investigation of past research studies, involving the development of a Plan of Study related to chronological age or developmental experiences such as the act of planning, revealed no strong evidence concerning the effect developing a *Four-Year Plan of Study* has on vocational identity. Nothing could be found which definitively related this process with the development or definition of vocational identity. As a result, very little could be said about the effect of developing a *Four-Year Plan of Study* on vocational identity. The development of vocational identity refers to the possession of a clear and stable picture of one's goals, interests, personality and talents (Holland, Daiger, and Power, 1986).

The null hypothesis tested was H_o: there is no difference in the vocational identity development of ninth grade students who develop a *Four-Year Plan of Study* and ninth grade students who do not develop a *Four-Year Plan of Study.*

The two major research questions developed to provide guidance to the study were:

1. Does the development of an individual *Four-Year Plan of Study* help to define the vocational identity of ninth grade students?
2. Does the development of vocational identity relate to chronological age?
3. Does the development of vocational identity relate to gender?

The instrument used in gathering data for the study measuring the vocational identity of ninth grade students was the Vocational Identity Scale of *My Vocational Situation* developed by Holland, Daiger, and Power (1980). The eighteen true-false items on the front of *My Vocational Situation* constitute the vocational identity scale; the score is the total number of false items. A cluster sample was used since the students would be administered the instrument and develop *Four-Year Plans of Study* as an intact classroom group. The total sample size was 567 ninth grade students from six High Schools That Work project schools and 92 ninth grade students from one control group school which was not one of the High Schools That Works project schools. Subjects in the study were administered the vocational identity scale of *My Vocational Situation* (Holland et al., 1980) prior to the development of the *Four-Year Plan of Study* with the experimental group or within the first nine weeks of class with the control group. The same instrument was administered following the development of the *Four-Year Plan of Study* for the experimental group or during May for the control group. Gain scores were analyzed to determine the effect the independent variable (Plan of Study) had on the dependent variable (vocational identity). The instrument used to develop the *Four-Year Plans of Study* by the experimental group are the plans of study (Appendix C) developed by the Career Information

Unit of the Guidance Division within the Oklahoma Department of Vocational and Technical Education (ODVTE). The plans of study were developed around 13 career clusters which relate to the Oklahoma computerized career information system, *Career Search*.

Descriptive data to describe the population was gathered on *My Vocational Situation* (Holland et al., 1980), as the pre-test was completed. The categories of gender, education completed (current grade), and age were contained on the instrument and was completed by each participant.

A total of 567 pre-tests were administered in the six experimental schools participating in the study. A total of 537 post-tests were recovered (94.7%) for the subjects in the experimental schools.

A total of 92 pre-tests were administered in the control group school and a total of 92 post-tests were recovered (100%) for the subjects in the control group school. Table II reveals the distribution and recovery of those instruments.

The reason for less than a 100 percent recovery rate in the six experimental schools resulted from students who completed the pre-test transferring from the school between the pre-test and post-test sessions.

Results of the Study

The results of the study are summarized in the following findings:

1. While the control group scored higher on pre-test vocational identity scores than did the experimental group, the overall gain was greater in the experimental group, gaining 3.11 points as compared to a gain of .72 points

for the control group. In using the ANOVA procedure to examine differences in pre-test and post-test vocational identity gain scores, it was found to be statistically significant (0.0035).

2. In examining a comparison of females and males, in both the experimental and control group schools on the pre-test for vocational identity using the ANOVA procedure, there does not appear to be a significant difference between females and males.

3. The comparison of female and male post-test vocational identity scores using the ANOVA procedure shows there does not appear to be a significant difference between females and males on the post-test scores for vocational identity.

4. A comparison of the pre-test vocational identity scores for the three age categories using the ANOVA procedure indicated a statistically significant difference (.0001) among the three age categories on pre-test scores for vocational identity.

5. A comparison of the pre-test scores for vocational identity for the three age categories using the ANOVA procedure with Tukey's (HSD) test for the variable pre-test show a statistically significant difference in two of the three. The comparisons of 14 to 15 year-olds and 14 to 16 year-olds were found to have significant differences among pre-test scores on vocational identity. The comparisons of the 15 to 16 year-olds were not found to have significant differences between pre-test scores for vocational identity.

6. There is not a significant difference in post-test vocational identity scores among groups when controlling for age using the ANCOVA procedure.

7. Using the ANCOVA procedure for post-test scores for vocational identity using the pre-test as a covariate, shows a statistically significant difference (0.0001) between the post-test vocational identity scores of the experimental and control groups.

Conclusions

Although the study identified statistically significant differences in some areas, they also identified some questions which must be considered in drawing conclusions about the effects of the development of a *Four-Year Plan of Study* on the vocational identity of ninth grade students. Based on the study's findings, the following conclusions were derived:

1. Based on the finding that there was a statistically significant difference among pre-test and post-test scores for vocational identity between experimental and control groups, it can be concluded that the use of a *Four-Year Plan of Study* has a significant effect on the development of vocational identity, which translates into a more clear and stable picture of one's goals, interests, personality, and talents.

2. Based on the finding that there is no statistical difference in pre-test and post-test scores for vocational identity between males and females, it can be concluded that the development of a *Four-Year Plan of Study* is equally effective for both genders.

3. Based on the finding that there is a statistically significant difference between the pre-test vocational identity scores of the control and experimental groups, it can be concluded that multiple factors may contribute to the development of vocational identity.

4. Based on the finding that indicated a statistically significant difference in pre-test scores for vocational identity among the three age categories, it can be concluded that age is one factor which contributes to vocational identity.

5. Based on the finding that in comparing 14 to 15 year-olds and 14 to 16 year-olds, significant differences exist among pre-test scores on vocational identity. However, differences do not appear significant on the comparison of the 15 to 16 year-olds, and it can therefore be concluded that a relationship between certain ages and vocational identity appears to be stronger than in others.

6. Based on the finding that there is a statistically significant difference between the post-test scores for vocational identity in the experimental and control groups and that there does not appear to be a significant difference in post-test scores for vocational identity among groups when controlling for age, it can be concluded that the use of a *Four-Year Plan of Study* has a significant impact on the vocational identity at any age within the 14, 15, and 16 year-old categories.

Recommendations

The state of Oklahoma has approximately 45,000 ninth grade students enrolled in public schools. The efforts of the schools to prepare individuals for successful secondary education while providing the foundation for preparation for the world of work is being constantly challenged. The factors which are impacting students today are: increased skill demands by employers, changing technology, and shifts in the ability of students to understand how to connect education and work and to effectively plan for the future. This study holds some implications for the continuation of efforts by schools to meet rising workplace demands as well as efforts for additional research.

First, it is recommended that the use of *Four-Year Plans of Study* be required for all ninth grade students. Based on the findings of the research, the use of plans of study facilitates the development of Vocational Identity, as measured by *My Vocational Situation*, translates into a more clear and stable picture of one's goals, interests, personality, and talents. This is desirable as other research indicates that vocational identity, as measured by Holland's *My Vocational Situation*, can be related to a student's decision to continue in a post-secondary academic program. It has been stated in research and in recent reports that post-secondary education will be essential in a majority of jobs in today's technological workplace. According to Hull and Parnell (1991), the planning and pursuit of a meaningful four-year plan assists in defining student goals and interests. The findings of the study appear to support this observation.

Second, the development of a *Four-Year Plan of Study* should be used for all students. Based on the findings, the development of a Plan of Study may assist females in eliminating differences, found in self-esteem and career aspirations identified in many recent studies (AAUW, 1993; Hansen and Biernat, 1992; Sadker and Sadker, 1992), with males. This could be an effective tool in assuring equitable access for females into education, training, and the workplace. As found in the VERTEC study (1993), stereotypes which relate to girls and "appropriate" careers are still operating and are reinforced by the school environment. These stereotypes have a cumulative effect on girls' attitudes regarding their abilities and occupational choices.

Recommendations for Further Research

The findings of this study revealed topic areas where additional research could assist in providing information to be used in the efforts of schools in the preparation of individuals for meaningful educational experiences and workplace preparation. The findings of this study would be greatly enhanced if further research was conducted in the following areas:

1. The findings of this study indicated a statistically significant difference between the pre-test scores for vocational identity between the control and experimental groups. Further research is needed to determine which other factors may have influenced the vocational identity scores of the subjects. Factors that could be studied include the effect of career awareness

activities; the effect of career exploration activities; and the effect of a comprehensive, developmental guidance program on vocational identity.

2. Further research is recommended to examine other factors in the student's environment which may contribute to the development of vocational identity. Factors which could be studied include course taking patterns, work experiences (both paid and unpaid), family influence, and opportunities for hands-on career exploration experiences.

3. Further research is recommended to examine developmental or age-related factors which could influence vocational identity. Factors which could be studied include investigation of the reasons for significant differences between certain age category comparisons, but not others; whether one age category provides optimal receptivity for developing a Plan of Study over another age category; or examine the age in which career awareness, career exploration, or career planning activities have the maximum impact on students.

4. Further research is recommended to examine whether the development of a *Four-Year Plan of Study* assists in enhancing the self-esteem of girls. Factors which could be studied could include the career choices of girls before and after the development of a Plan of Study, or whether career aspirations and educational aspirations were effected.

5. A five to ten year longitudinal study is needed to follow ninth grade students and the consistency of career choice by those with a high level of vocational identity; their level of satisfaction with their chosen career when

they complete training and enter the field; and their stability within their chosen career. This research is needed to identify the role vocational identity plays in career stability and satisfaction over time.

The researcher holds the opinion that findings from the above recommendations would provide information that would assist both comprehensive schools and vocational schools in their efforts to prepare students for the workplace. The results could assist schools in targeting resources for career planning efforts. A career guidance component must be included in the school guidance curriculum and should involve teachers in a program such as teachers as advisors to ensure that all students are developing a *Four-Year Plan of Study*. Vocational and comprehensive education, along with higher education and employers, must work cooperatively to develop effective strategies to better prepare students to meet the skill demands of the technological workplace. Such cooperative efforts must be successful in order to make the best use limited funds, to provide accountability for assistance and instruction of students, and to focus the efforts of school staff into areas which will have an impact on the future well-being of students. It is hoped that the results of this study will promote further research in the recommended areas. A greater effort must be made in this country to address the important role of career guidance and counseling in providing skills to students which assists them in successfully transitioning from school to work and in making their school-based learning more meaningful.

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APPENDIXES

APPENDIX A

MY VOCATIONAL SITUATION

my vocational situation

Name _____ Date _____ M __ F __ Age ___

Education completed _____ Other _____

List all the occupations you are considering right now.

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

Try to answer each of the following statements as mostly TRUE or mostly FALSE. Circle the answer that best represents your present opinion.

In thinking about your present job or in planning for an occupation or career:

1. I need reassurance that I have made the right choice of occupation. T F
2. I am concerned that my present interests may change over the years. T F
3. I am uncertain about the occupations I could perform well. T F
4. I don't know what my major strengths and weaknesses are. T F
5. The jobs I *can do* may not pay enough to live the kind of life I want. T F
6. If I had to make an occupational choice right now, I am afraid I would make a bad choice. T F
7. I need to find out what kind of career I should follow. T F
8. Making up my mind about a career has been a long and difficult problem for me. T F
9. I am confused about the whole problem of deciding on a career. T F
10. I am not sure that my present occupational choice or job is right for me. T F
11. I don't know enough about what workers do in various occupations. T F
12. No single occupation appeals strongly to me. T F
13. I am uncertain about which occupation I would enjoy. T F
14. I would like to increase the number of occupations I could consider. T F
15. My estimates of my abilities and talents vary a lot from year to year. T F
16. I am not sure of myself in many areas of life. T F
17. I have known what occupation I want to follow for less than one year. T F
18. I can't understand how some people can be so set about what they want to do. T F

APPENDIX B

INITIAL CONFIRMATION LETTER TO PARTICIPATING INSTITUTIONS

Belinda McCharen
12425 Croydon Road
Midwest City, OK 73130

Dear Study Participant:

Thank you for voluntarily agreeing to assist with this study. The purpose of this study is to determine the career planning needs of 9th grade students.

You will be given a short questionnaire during the Fall of 1993 and again before school ends in May 1994. Try to answer each of the questions as mostly TRUE or mostly FALSE. Circle the answer that best represents your present opinion. Please answer honestly and completely. Do not place your name directly on the questionnaire. You will be assigned a number unique to you. Your responses will be kept confidential and used only for the purpose of this study. Your teacher or counselor will not be provided a copy of your responses.

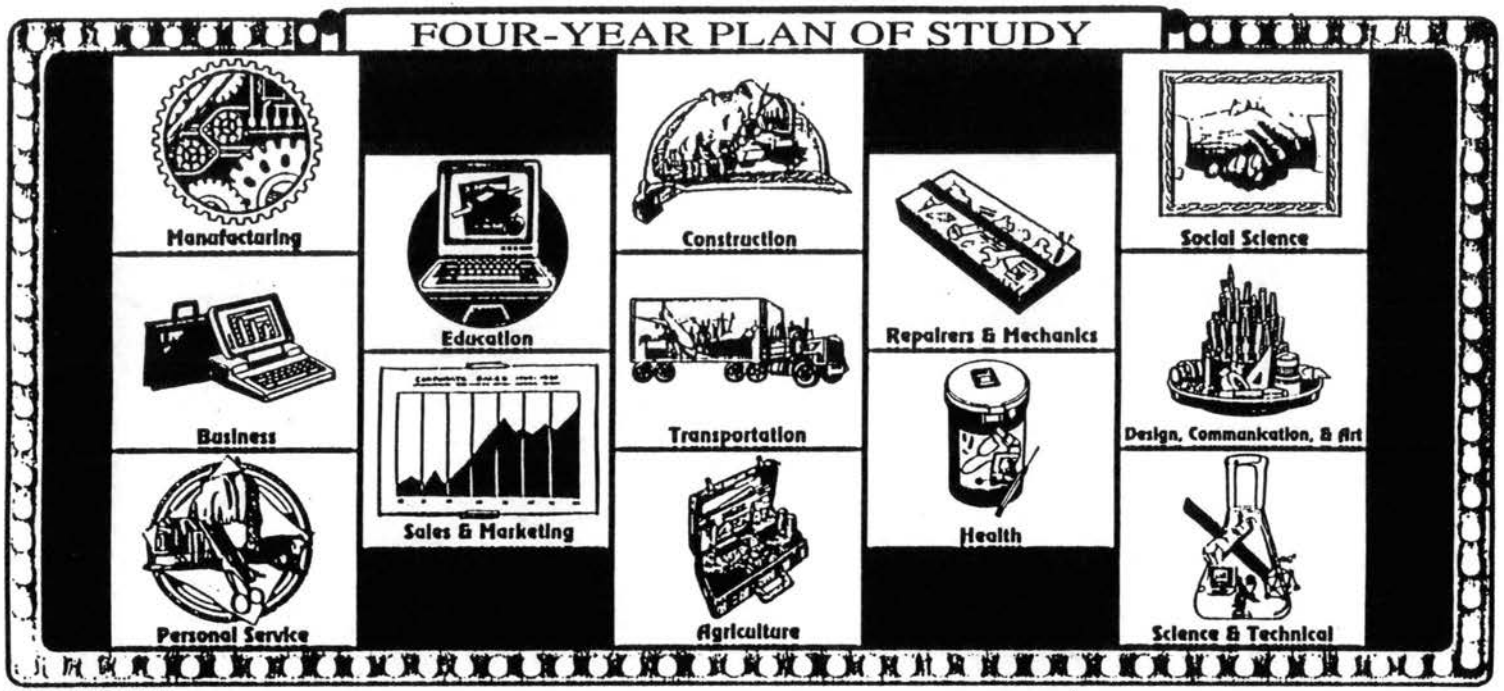
If after reading the questionnaire you do not wish to continue with this study, you will not be contacted and asked to participate again. Thank you again for agreeing to assist with this study.

Sincerely,

Belinda McCharen

APPENDIX C

FOUR-YEAR PLAN OF STUDY USED BY EXPERIMENTAL GROUPS IN THE STUDY



Message to Students

This is your career planning folder. It is designed to help you plan and make satisfying career decisions. You need to recognize that your interests, skills, and goals are essential clues in helping you make those satisfying career decisions. You must know what you are looking for in a career and how to plan ahead to achieve what you want. Likewise, you also need to know what employers and postsecondary schools are looking for when they select someone for a job or a student for admission.

Career decision making is a lifelong process. There is no magic time when you will suddenly know what it is you want to be "when you grow up." In fact, it is highly likely you will have more than one career during your lifetime. However, you can start now to acquire an appreciation of yourself and the talents you can bring to any career you choose.

Making decisions, especially career decisions, is difficult at times. Other people can help. Your family, school, and community are good sources of information. Keep an open mind and realize that regardless of your color, creed, race, or sex, you have many choices. By making decisions, planning ahead, and setting goals, you can accomplish what is important to you.

- **Manufacturing:** concerned with the changing of raw materials into useful products.
- **Business:** concerned with the organizational, administrative, and general operation of governments, industries, and businesses.
- **Personal Service:** concerned with meeting the needs of individuals by providing household, food, cleaning, personal, or protective services.
- **Education:** concerned with helping individuals develop skills and acquire knowledge.
- **Sales & Marketing:** concerned with selling or marketing of products and/or services.
- **Construction:** concerned with the building and maintenance of various types of structures.
- **Transportation:** concerned with the movement of people and/or goods.
- **Repairers & Mechanics:** concerned with the servicing and/or repairing of machines or products.
- **Agriculture:** concerned with conservation and the production, marketing, or servicing of agricultural products.
- **Health:** concerned with the providing of services and/or products relating to the health of people or animals.
- **Social Science:** concerned with the study of societies and/or the delivery of a variety of social or religious services.
- **Design, Communication, & Art:** concerned with the creation and/or transfer of ideas or information.
- **Science & Technical:** concerned with solving problems, developing innovations, or providing scientific or technical services.

EXTRACURRICULAR ACTIVITIES/STUDENT ORGANIZATIONS & CLUBS			
	ACTIVITY	RESPONSIBILITY/OFFICE HELD	SPONSOR
GRADE 9			
GRADE 10			
GRADE 11			
GRADE 12			

HONORS AND AWARDS	
GRADE 9	
GRADE 10	
GRADE 11	
GRADE 12	

IMPORTANT RESOURCE PERSONS AND AGENCIES			
NAME OF PERSON/AGENCY	TELEPHONE #	PURPOSE OF CONTACT	COMMENTS

84 010618

Actual Course Record

	GRADE 9	GRADE 10	GRADE 11	GRADE 12
Career Goal/Cluster	/	/	/	/
Subjects Taken:	( )	( )	( )	( )
	( )	( )	( )	( )
	( )	( )	( )	( )
	( )	( )	( )	( )
	( )	( )	( )	( )
	( )	( )	( )	( )
	( )	( )	( )	( )
	Credits Acquired ( )	Credits Acquired ( )	Credits Acquired ( )	Credits Acquired ( )

Work Experience

	GRADE 9	GRADE 10	GRADE 11	GRADE 12
Company Name:				
Supervisor's Name:				
Duties:				
Company Name:				
Supervisor's Name:				
Duties:				

WORKPLACE BASICS: The Skills Employers Want
Definitions/Glossary

Source: The American Society for Training and Development

BEYOND BASIC SKILLS

A few years ago, basic skills meant reading, writing, and arithmetic. Now, those skills are just a starting point. Take a look at the basic skills needed today in the workplace.

- **Learning to learn:** Workers must be able to acquire new information and skills and apply them to their jobs.
- **Listening:** Important for more than just following supervisors' instructions, good listening skills help workers understand the concerns of co-workers, suppliers, and customers.
- **Oral communications:** Workers must be able to respond clearly to concerns of their co-workers, customers, suppliers, and supervisors.
- **Problem solving:** New styles of work organization will require all workers to analyze problems and come up with solutions.
- **Creative thinking:** The more flexible work becomes, the more creative workers' solutions will have to become.
- **Self-esteem:** Supervisors want workers who are proud of themselves and their abilities.
- **Goal setting/motivation:** Workers need the ability to set goals and the persistence to achieve them.
- **Personal and career development:** The most valuable employees are those who understand the need to continually develop on the job.
- **Interpersonal skills:** Employees must be able to get along with their suppliers, co-workers, customers, and supervisors.
- **Teamwork:** People in work teams need to know how to divide work fairly and effectively and work with one another to achieve team goals.
- **Negotiation:** Workers need the ability to build a common agreement through give and take with their customers, co-workers, and supervisors.
- **Organizational effectiveness:** To be productive, employees must understand the company's business goals and how their jobs contribute to fulfilling those goals.
- **Leadership:** Workers must be able to assume responsibility and direct their co-workers when necessary.
- **Competence in writing:** Workers must be able to examine, analyze, and merge information in writing.
- **Competence in computation:** Employees who can use common mathematical concepts related to their work will be in high demand.
- **Competence in reading:** Employees need to understand the meaning of the written word and apply it to their jobs.

WORKPLACE KNOW-HOW
Definitions/Glossary

Source: Secretary's Commission on Achieving Necessary Skills Report, Department of Labor

The know-how identified by SCANS is made up of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance. These are:

WORKPLACE COMPETENCIES: — Effective workers can productively use:

- **Resources** — They know how to allocate time, money, materials, space and staff.
- **Interpersonal Skills** — They can work on teams, teach others, serve customers, lead, negotiate, and work well with people from culturally diverse backgrounds.
- **Information** — They can acquire and evaluate data, organize and maintain files, interpret and communicate, and use computers to process information.
- **Systems** — They understand social, organizational, and technological systems; they can monitor and correct performance; and they can design or improve systems.
- **Technology** — They can select equipment and tools, apply technology to specific tasks, and maintain and troubleshoot equipment.

FOUNDATION SKILLS: — Competent workers in the high-performance workplace need:

- **Basic Skills** — reading, writing, arithmetic and mathematics, speaking, and listening.
- **Thinking Skills** — the ability to learn, to reason, to think creatively, to make decisions, and to solve problems.
- **Personal Qualities** — individual responsibility, self-esteem and self-management, sociability, and integrity.

STUDENT NAME _____ SCHOOL NAME _____

Health Cluster

Secondary Plan

Health: concerned with the providing of services and/or products relating to the health of people or animals

Open your future through career planning.

votech

Oklahoma Department of Vocational and Technical Education

High School Planner

Sample Plan*

*Sample Plan focuses on graduation and college entrance requirements and cluster requirements. It is meant to serve as a guide, along with other career planning materials, as the student plans his/her career path.

GRADE 9/Sample Courses	Units	GRADE 10/Sample Courses	Units	GRADE 11/Sample Courses	Units	GRADE 12/Sample Courses	Units
Applied Math I (M)	1	Applied Math II (M)	1	Algebra II (M)	1	Trigonometry (M)	1
English (LA)	1	English (LA)	1	English (LA)	1	English (LA)	1
App. Bio./Chem. I (Biology) (S)	1	App. Bio./Chem. II (Biology) (S)	1	Physiology (S)	1	Psychology (SS)	1
Okla. Hist./U.S. Gov. (SS)	1	World History (SS)	1	American History (SS)	1	Humanities (E)	1
Health Education (E)	1	Geography (SS)	1	VOC. ED. BLOCK:		VOC. ED. BLOCK:	
Technology Educ. (E)	1	Orient./Health Occup. (CP)	1	Allied Health Careers I (CP)	3	Allied Health Careers II (CP)	3
Athletics (E)	¼	Intro. to Computers (E)	1				
Total Units	6¼	Total Units	7	Total Units	7	Total Units	7

Student Plan**

**Student Plan gives the student the opportunity to customize his/her high school plan. It is meant to focus on local school requirements and the career path of the student.

GRADE 9/Planned Courses	Units	GRADE 10/Planned Courses	Units	GRADE 11/Planned Courses	Units	GRADE 12/Planned Courses	Units
Total Units		Total Units		Total Units		Total Units	

SIGNATURES:		SIGNATURES:		SIGNATURES:		SIGNATURES:	
(Student)	(Date)	(Student)	(Date)	(Student)	(Date)	(Student)	(Date)
(School Official)	(Date)	(School Official)	(Date)	(School Official)	(Date)	(School Official)	(Date)
(Parent/Guardian)	(Date)	(Parent/Guardian)	(Date)	(Parent/Guardian)	(Date)	(Parent/Guardian)	(Date)

Health Cluster

SCHEDULING OPTIONS

9TH GRADE

MATH (M)	LANGUAGE ART (LA)	SCIENCE (S)	SOCIAL STUDIES (SS)	ELECTIVES (E)
___ Algebra I• ( )	___ English* ( )	___ Biology I• ( )	___ Okla. History ( )	___ Health Education• ( )
___ Applied Math* ( )	___ Reading ( )	___ Physical Science ( )	___ Geography ( )	___ Technology Educ. ( )
___ _____ ( )	___ _____ ( )	___ App. Bio. & Chem. I• ( )	___ U.S. Government ( )	___ Athletics ( )
___ _____ ( )	___ _____ ( )	___ _____ ( )	___ _____ ( )	___ _____ ( )

10TH GRADE

MATH	LANGUAGE ART	SCIENCE	SOCIAL STUDIES	ELECTIVES
___ Algebra I• ( )	___ English* ( )	___ Biology I• ( )	___ World History ( )	___ Voc. Ed.[3]_____ ( )
___ Geometry* ( )	___ Speech ( )	___ Chemistry• ( )	___ Economics ( )	___ Health Education• ( )
___ Applied Math I* ( )	___ _____ ( )	___ Physiology• ( )	___ Geography ( )	___ Intro. to Computers ( )
___ Applied Math II* ( )	___ _____ ( )	___ App. Bio. & Chem. II• ( )	___ American History ( )	___ Keyboarding ( )
___ _____ ( )	___ _____ ( )	___ Prin. of Technology I* ( )	___ _____ ( )	___ _____ ( )
___ _____ ( )	___ _____ ( )	___ _____ ( )	___ _____ ( )	___ _____ ( )

11TH GRADE

MATH	LANGUAGE ART	SCIENCE	SOCIAL STUDIES	ELECTIVES
___ Algebra II• ( )	___ English* ( )	___ Biology II• ( )	___ Psychology* ( )	___ Voc. Ed.[3]_____ ( )
___ Applied Math II* ( )	___ American Literature ( )	___ Chemistry• ( )	___ Economics ( )	___ Computer Programming ( )
___ Geometry* ( )	___ Engl./Applied Comm. ( )	___ Prin. of Tech. I*/II* ( )	___ American History ( )	___ Humanities ( )
___ Trigonometry* ( )	___ _____ ( )	___ Physiology• ( )	___ _____ ( )	___ Foreign Language ( )
___ _____ ( )	___ _____ ( )	___ _____ ( )	___ _____ ( )	___ _____ ( )

12TH GRADE

MATH	LANGUAGE ART	SCIENCE	SOCIAL STUDIES	ELECTIVES
___ Algebra II• ( )	___ English ( )	___ Chemistry• ( )	___ Psychology* ( )	___ Voc. Ed.[3]_____ ( )
___ Algebra III* ( )	___ Yearbook/Journalism ( )	___ Biology II• ( )	___ Sociology ( )	___ Humanities ( )
___ Trigonometry* ( )	___ Engl./Applied Comm. ( )	___ Prin. of Tech. II* ( )	___ _____ ( )	___ Athletics ( )
___ _____ ( )	___ _____ ( )	___ _____ ( )	___ _____ ( )	___ Foreign Language ( )
___ _____ ( )	___ _____ ( )	___ _____ ( )	___ _____ ( )	___ _____ ( )

CAREER PREP (CP)[1] (Vocational Education[2])

___ Orient. to Health Occup. ( )
___ Allied Health Careers I*✓ ( )
___ Allied Health Careers II* ( )
___ Dental Lab Assisting I★ ( )
___ Dental Lab Assisting II ( )
___ Medical Assisting ( )
___ Dental Assisting ( )
___ Nursing Option ( )
___ Practical Nursing ( )
___ _____ ( )
___ _____ ( )

•Knowledge of the subject important to approximately ½ or more of health occupations.
*Knowledge of the subject important to approximately ½ or more of health occupations.

[1]Courses can be taken in grades 10-12. What courses are taken and when the courses are taken depend on the student's career path.
[2]Suggested vocational education courses the student may take if interested in this career cluster.
✓Allied Health Careers I is a prerequisite for Allied Health Careers II.
★Dental Lab Assisting I is a prerequisite for Dental Lab Assisting II.

Health Cluster

DESCRIPTION: Health occupations are concerned with the providing of services and/or products relating to the health of people or animals.

POTENTIAL CAREER OCCUPATIONS:

Occupation	DOT Code[1]	Occupation	DOT Code[1]	Occupation	DOT Code[1]
Audiologist	076.101-010	Biomedical Technician	019.261-010	Chiropractor	079.101-010
Cytotechnologist	078.281-010	Dental Hygienist	078.361-010	Dental Lab Technician	712.381-018
Dental Assistant	079.361-018	Dentist	072.101-010	Diagnostic Songrapher	078.364-010
Dialysis Technician	078.362-014	Dietitian	077.127-018	Electrocardiograph Tech.	078.362-018
Electroencephalographic Technician	078.362-022	Emergency Med. Tech.	079.374-010	Hospital Administrator	187.117-010
Medical Lab Technician	078.381-014	Industrial Hygienist	079.161-010	Licensed Practical Nurse	079.374-014
Medical Technologist	078.261-038	Medical Records Administrator	079.167-014	Medical Records Technician	079.362-014
Occupational Therapist	076.121-010	Nuclear Medicine Technologist	078.361-018	Nursing Assistant/Aide	355.674-014
Optometric Assistant	079.364-014	Optometrist	079.101-018	Optician	716.280-014
Pharmacist	074.161-010	Phlebotomist	079.364-022	Orthotist/Prosthetist	078.261-018
Physician	070.101-022	Physician's Associate	079.364-018	Physical Therapist	076.121-014
Psychiatrist	070.107-014	Pulmonary Function Technologist	078.262-010	Podiatrist	079.101-022
Recreation Therapist	076.124-014	Speech/Lang. Pathologist	076.107-010	Radiographer	078.362-026
Respiratory Therapist	076.361-014	Veterinarian	073.101-010	Registered Nurse	075.364-010
Diagnostic Songrapher	078.364-010			Surgical Technologist	079.374-022
				Ward Clerk	245.362-014

MORE SOURCES OF INFORMATION: *Oklahoma Career Search, Oklahoma Career Choices* tabloid, *Career Directions* magazine, *Career Planner—A Catalog of Vocational Courses, Dictionary of Occupational Titles, Occupational Outlook Handbook, Guide for Occupational Exploration, Work Force Oklahoma, Occupational Outlook Quarterly, and Licensed Occupations of Oklahoma* (specific sources for health information).

REQUIREMENTS MAY INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

You should like:
- Working with people.
- Activities of a scientific and technical nature.
- Working with processes, machines, and techniques.
- Helping people.

You should be able to:
- Communicate well.
- Work effectively with others.
- Evaluate information based on personal judgement and/or measurable standards.
- Perform a variety of duties that may change frequently.
- Use logical, clear, step-by-step procedures in your work.
- Work within precise limits or standards of accuracy.

Possible physical abilities:
- Have good vision, either naturally or with correction.
- Hear well, either naturally or with correction.
- Possess manual dexterity and use of fingers, hands, and arms.
- Have good perception of depth and color.
- Able to assist in lifting of patients and/or equipment.
- Stand long periods of time.

Opportunities for experience:
- Summer, part-time, and volunteer work at a hospital or clinic.
- Experience may be gained through the various branches of the military.
- Participation in co-op programs at a vocational center or college.
- Vocational student organizations (i.e., HOSA).

(Because of the specialization involved in some of the health occupations, opportunities for experience may be somewhat limited.)

Methods of entry:
- Direct application to employers.
- Consulting newspaper ads.
- Consulting professional journals.
- Consulting placement offices.
- Consulting state employment offices.
- Taking civil service exams.

[1]DOT Code — Occupation can be found by this code in the revised 1991 *Dictionary of Occupational Titles*. The DOT is a U.S. Dept. of Labor publication that includes standardized and comprehensive descriptions of job duties and related information for 12,000 occupations.

93 009491

APPENDIX D

OKLAHOMA STATE UNIVERSITY INSTITUTIONAL REVIEW BOARD APPROVAL OF HUMAN SUBJECTS STUDY

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
FOR HUMAN SUBJECTS RESEARCH

Date: 10-28-93 **IRB#:** ED-94-030

Proposal Title: THE EFFECTS OF DEVELOPING A FOUR-YEAR PLAN OF STUDY ON THE VOCATIONAL IDENTITY OF 9TH GRADE STUDENTS

Principal Investigator(s): Dr. Garry Bice, Belinda McCharen

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

APPROVAL STATUS SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING.
APPROVAL STATUS PERIOD VALID FOR ONE CALENDAR YEAR AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL. ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Reasons for Deferral or Disapproval are as follows:

Revisions received and approved.

Signature: _____ Date: November 24, 1993
Chair of Institutional Review Board

APPENDIX E

PRE-TEST FOLLOW-UP LETTER TO PARTICIPATING INSTITUTIONS

votech
OKLAHOMA DEPARTMENT
OF VOCATIONAL
AND TECHNICAL EDUCATION

September 20, 1993

Dear :

You were contacted earlier this fall regarding your willingness to participate in a survey examining the effect of the development of a Plan of Study on the vocational identity of students. You indicated that you were willing to participate.

On the form you completed, you also indicated that the Plans of Study at your school were to be completed in April 1994. Our data show that you have XX 9th grade students who will completing the 4-year Plans of Study. I have enclosed sufficient copies of the survey instrument for your use. The first 18 questions on the front of the survey should be completed at any time during the first nine weeks of school and before the students begin work on the Plan of Study. The same instrument should be used as a post-measure following the completion of the Plan of Study. This second administration can be completed any time between the end of your planning process and the end of your school term. Please administer the instrument to new students prior to the time their Plan of Study is developed.

I would prefer you send the pre-measure instruments back to me as soon as you have completed them. This will allow me to proceed with setting up the data bank for your site.

Please feel free to call me at (405) 743-5158 if you have questions. Also, please feel free to call for additional copies of the student forms for your use, if you wish. I will send the complete profile of your student responses both pre- and post-measurement at the end of the project, which will probably not be until Mid-Summer.

Thank you again for you assistance with this study.

Sincerely,

Belinda McCharen, Coordinator
Guidance Division

APPENDIX F

POST-TEST CONFIRMATION LETTER TO PARTICIPATING INSTITUTIONS

votech
OKLAHOMA DEPARTMENT
OF VOCATIONAL
AND TECHNICAL EDUCATION

January 19, 1994

Dear :

Thank you for agreeing to participate in the study to identify whether the use of a four-year plan of study has an effect on the Vocational Identity of students. In doing so you were asked to complete the enclosed form with the students who would be developing a plan of study.

This letter is a reminder that a second administration of the enclosed questionnaire, *My Vocational Situation* is needed before the end of school this year as a post-test in order to complete the study.

Please feel free to call and let me know how many of the *My Vocational Situation* questionnaires you need to complete the post-testing with the enclosed form. As closely as possible, the same students who complete the pre-test need to complete the post-test. All students completing the post-test should have developed a Plan of Study some time during this school year.

When your post-tests have been completed, please mail them to my office at 1500 West Seventh Avenue, Stillwater, OK 74074. As soon as the post-test is received I will process the results and send a copy of your school's profile for your use during the summer. If you happen to still have completed pre-tests for new students, please label them as pre-tests and send them with the completed post-tests to my office.

You may reach me at (405) 743-5158 if you have questions. Again, I express my sincere appreciation and thanks for assisting me with this project.

Sincerely,

Belinda McCharen, Coordinator
Guidance Division

APPENDIX G

PARTICIPATING INSTITUTIONS TRACKING FORM FOR DATA COLLECTION

TRACKING FORM
MY VOCATIONAL SITUATION

SCHOOL ______________________

STUDENT NUMBER	GENDER	PRETEST	POSTTEST	DIFFERENCE (+ OR -)

VITA

Belinda Kay Cole McCharen

Candidate for the Degree of

Doctor or Education

Thesis: THE EFFECTS OF DEVELOPING A FOUR-YEAR PLAN OF STUDY ON THE VOCATIONAL IDENTITY OF NINTH GRADE STUDENTS

Major Field: Occupational and Adult Education

Biographical:

Education: Received Bachelor of Science in Physical Education and Psychology, Southwestern Oklahoma State University, 1973; received Master of Science in Education, Central State University, 1977; received Certificate in Secondary Administration, Central State University, 1977; received Certificate for Educational Administration, 1986; completed requirements for Doctor of Education degree at Oklahoma State University in December 1994.

Professional Experience: Instructor, Moore Public Schools, Moore, Oklahoma, 1973-76; Guidance Counselor/Department Head, Moore Public Schools, Moore, Oklahoma, 1975-84; Career Specialist, Oklahoma Department of Vocational and Technical Education, Oklahoma City, Oklahoma, 1984-86; Coordinator of Vocational Guidance, Oklahoma Department of Vocational and Technical Education, Stillwater, Oklahoma, 1986-Present; Adjunct Faculty, Central State University, Edmond, Oklahoma, 1990-94.

Certificates and Licenses: National Certified Counselor; National Certified Career Counselor; Licensed Professional Counselor, State of Oklahoma; Standard Guidance and Counseling Certificate, Oklahoma State Department of Education; Standard Secondary Administration Certificate, Oklahoma State Department of Education.

Professional Organizations: American Vocational Association; National Career Guidance Supervisors Consortium; Oklahoma Career Development Association; Oklahoma Vocational Association