PREDICTING THE ACADEMIC PERFORMANCE OF STUDENTS IN ON-SITE ARTICULATED PROGRAMS AT OKLAHOMA STATE UNIVERSITY-OKMULGEE

By

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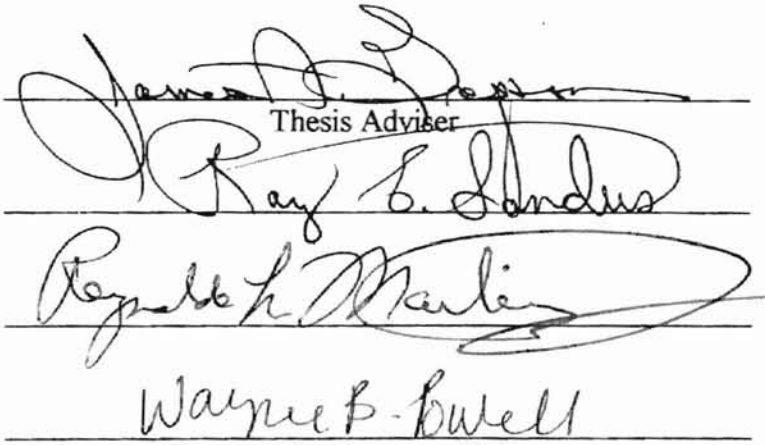

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CHAPTER I

INTRODUCTION

Background

The public higher education system, vocational education system, and common schools system are funded and operated separately in the state of Oklahoma. In 1993, an associate degree granting college and an area vocational technical school in Okmulgee County, Oklahoma developed an exclusive pilot program which overlapped the services of these distinctly different institutions. The participating institutions were Oklahoma State University, Technical Branch, Okmulgee (OSU-Okmulgee), and Green Country Area Vocational Technical School (AVTS) in Okmulgee.

OSU-Okmulgee

Established in 1946 as a branch campus of Oklahoma State University, (Davis, 1991) OSU-Okmulgee is Oklahoma's only highly-specialized, associate-degree-granting public technical college. OSU-Okmulgee has a very specific mission to concentrate on technologies designed to prepare technical-professionals for the emerging workforce (Oklahoma State University/Okmulgee, 1993). The Oklahoma State Regents for Higher

Education, a constitutionally mandated governing body, is the policy setting and program-approving board for the school.

An open enrollment institution, OSU-Okmulgee offers the Associate in Applied Science degree in 37 programs of study. An average of 90 semester credit hours is required for a degree and most programs require between 22 and 30 credit hours of general education courses. The amount of coursework required is based on recommendations from Industry Advisory Committees who have insisted on including both theory and applied courses. The extensive applied coursework required in all technical areas necessitates that OSU-Okmulgee provide state-of-the-art technology and equipment for student learning activities. To provide much of this technology, the institution enjoys national and international industry partnerships which are unparalleled in the state and region (L. L. Avant, personal communication, January 23, 1998). Other equipment is funded through institutional funds.

The campus is organized into these twelve academic departments: Air Conditioning and Refrigeration Technology, Automotive Technology, Business Technology, Construction Technology, Heavy Equipment and Vehicle Institute, Engineering Graphics Technology, Electrical and Electronics Technology, Hospitality Services Technology, Manufacturing Technology, Small Business Occupations, Visual Communications, and General Education.

Accredited by the North Central Association, Commission on Institutions of Higher Education, OSU-Okmulgee is required to comply with General Institutional Requirements which state that a majority of faculty must hold a degree higher than the

institution awards. OSU-Okmulgee hires faculty for this requisite academic requirement and also for business and industry experience in the technical fields. OSU-Okmulgee faculty who teach high school students in articulated programs must also meet secondary school teacher credentialing requirements as set by the Oklahoma State Board of Education and are required to attend Oklahoma State Summer and Mid-Winter Vocational Conferences which are conducted by the Oklahoma Department of Vocational and Technical Education.

GREEN COUNTRY AVTS

Green Country AVTS in Okmulgee was begun based on a unique Memorandum of Understanding (see Appendix A) signed in 1993 by both the Oklahoma Department of Vocational and Technical Education Board and the Board of Regents for Oklahoma State University and the A&M Colleges. The joint agreement provided assurances of cooperation in all endeavors for the taxpayers of Okmulgee County and the State of Oklahoma. In this pact, Oklahoma State University provided Green Country AVTS with a 100 year lease on 30 acres of land adjacent to the OSU-Okmulgee campus.

The mission of Green Country AVTS is to provide vocational education for area secondary school students and adults without duplicating programs and services which are provided by OSU-Okmulgee. Green Country AVTS is not a degree-granting institution. It confers certificates of program completion instead of college certificates or degrees. Oklahoma area vocational-technical school faculty are required to have high school teacher certification. The school is governed by a local school board and the Oklahoma Department of Vocational and Technical Education Board. Green Country

AVTS serves all eight Okmulgee County secondary schools: Beggs, Dewar, Henryetta, Morris, Okmulgee, Preston, Schulter, and Wilson.

Green Country AVTS students participate in applied learning activities, but very little theory is incorporated in the vocational-technical education programs. Green Country AVTS is permitted to purchase and procure equipment only for programs which are not duplicative of OSU-Okmulgee programs of study. State-of-the-art technology is available on the Green Country AVTS campus for students in the following programs: Business Technology, Carpentry, Computer Technology, Law Enforcement, Health Science Technology, and the Licensed Practical Nursing program for adults.

Characteristics of the Articulated Programs

To fulfill the obligation to preserve state and local resources by avoiding duplication of services, OSU-Okmulgee and Green Country AVTS agreed to share faculty, campus facilities and equipment, in serving secondary school students initially in two articulated programs of study -- Manufacturing and Drafting. According to Panter (1997), the Manufacturing Technology Program articulated program was developed in 1993:

> A Memorandum of Understanding was created between the two institutions (Appendix B) to explain the relationship of the two schools and the expectations of each. After working through the articulation process, the Memorandum of Understanding in Appendix C was established for the Manufacturing Technology program.

> For its part of the agreement, Green Country (AVTS) contracted with Oklahoma State University-Okmulgee for equivalent to one-half of the instructor salary, provided all books and tools for the students, and purchased some upgrade equipment. Green Country AVTS also agreed to provide administrative and support services for staff and students, maintain records on students, and administer discipline as required. Oklahoma State University-Okmulgee, in addition to the instructor, provided the facilities and equipment. Oklahoma State University-Okmulgee also agreed to provide a competency based curriculum and provide resources through library facilities and other staff expertise. (pp. 82-83)

The courses articulated in the Manufacturing Program are listed in Appendix D. Panter wrote that the "...articulated Drafting program was opened for the next school year using the same format as previously established in Manufacturing Technology. The Memorandum of Understanding for Drafting is listed in Appendix E with the courses used in this program listed in Appendix F" (Panter, 1997, p. 83).

Beginning in the 1996-97 school year, OSU-Okmulgee offered technical concurrent classes for high school students. Unlike the on-site articulated technical programs, these students attended the same classes with post-high school students. Technical concurrent classes were open to high school students in Air Conditioning and Refrigeration, Auto Body, Electrical and Electronics Technology, and the Heavy Equipment and Vehicle Institute.

For both the technical articulated programs and the technical concurrent courses, there is no set of entrance requirements or guidelines for student participation to effectively guide or counsel students for these programs.

Statement of the Problem

High school-to-college articulated and cooperative education programs are widespread, but these programs are most frequently established in academic areas with relatively little research completed in vocational and technical articulated education (Panter, 1997). Although articulated and cooperative technical education has grown since the 1980s (Imel, 1996), the problem is that there is little guidance in the counseling and selection of students for enrollment in articulated technical education based on reliable prediction of their academic performance in these programs and courses.

The prediction of college student success and subsequent selection of college students has been the focus of study from at least 1899 to the present decade (Astin, 1971; Bloom & Peters, 1961; Henderson, 1986; Lavin, 1965; Willingham, Lewis, Morgan & Ramist, 1990). Henderson wrote that the "National Education Association's Committee on College Entrance Requirements in 1899 concerned themselves with admission requirements which were to insure some standard for incoming students" (p. 4). Because the use of high school grade point averages has long been accepted as the most accurate predictor of student academic performance in college (Astin, 1971), the comparison and correlation of high school grades prior to enrollment in articulated college-level technical education should be evaluated as a potential guide for the progress and development of these articulated programs and the students they serve.

Purpose of the Study

The purpose of this study was to determine if high school grade point averages prior to enrollment in articulated college-level technical education were accurate predictors of academic performance for Green Country AVTS' on-site articulated program secondary students in technical education courses at OSU-Okmulgee. The programs of study offering on-site articulated courses at OSU-Okmulgee during the time frame of this study were Drafting and Manufacturing Technology. These programs were available to eleventh and twelfth grade students who were enrolled in any one of the eight Okmulgee County high schools and the OSU-Okmulgee Drafting or Manufacturing Technology program of study through Green Country AVTS.

Objectives of the Study

To accomplish the purpose of the study, the following objectives were established:

1. Determine the high school grade point averages of Green Country AVTS' technical on-site articulated program secondary students at the time they entered technical education courses at OSU-Okmulgee inclusive of the school years 1993-94 to 1996-97.

2. Determine the OSU-Okmulgee course grades of Green Country AVTS' technical on-site articulated program secondary students in technical education courses at OSU-Okmulgee inclusive of the school years 1993-94 to 1996-97.

3. Compare the high school grade point averages and OSU-Okmulgee course grades of the Green Country AVTS technical on-site articulated program secondary students in technical education courses at OSU-Okmulgee inclusive of the school years 1993-94, 1994-95, 1995-96, and 1996-97.

4. Determine the correlation of the high school grade point averages and OSU-Okmulgee course grades of the Green Country AVTS technical on-site articulated program secondary students in technical education courses at OSU-Okmulgee inclusive of the school years 1993-94, 1994-95, 1995-96, and 1996-97.

5. Determine the extent to which high school grade point averages can be used to predict the academic performance of secondary students in technical education programs articulated between Green Country AVTS and OSU-Okmulgee.

Significance of the Study

This study has the potential to provide data which can lead to the establishment of student selection criteria and information useful for counseling prospective students for high school-to-college articulated technical programs of study. Additionally, this study may begin to address the void in the literature regarding the prediction of student grades in articulated post-secondary technical education programs.

Scope of the Study

This study included eleventh and twelfth grade students who were enrolled in any one of the eight Okmulgee County high schools and the OSU-Okmulgee Drafting or Manufacturing Technology program of study through Green Country AVTS. Data

regarding these students were compared for the school years of 1993-94, 1994-95, 1995-96, and 1996-97.

Limitations

There were several limitations encountered in this study. First, this study encompassed only the two on-site high school-to-college technical articulation programs available at OSU-Okmulgee. This study did not include students who were participating in concurrent technical education programs at OSU-Okmulgee. Although these two types of programs have some similar characteristics, the on-site articulation programs are unique and were considered separately in this study. Second, the OSU-Okmulgee and Green Country AVTS articulated education program in Drafting began one year after the Manufacturing Technology articulated education program, therefore no data were available for the 1993-94 school year for Drafting high school students.

There appeared to be little variance in the types of high school coursework that participating students took. Without having done a systematic review of the subjects' transcripts to compare courses taken, it should be noted that all the students came from high schools without a lot of course offerings. Another notable limitation of this study was the low representation of females in these student populations; only seven of the 61 participants were female.

Although the OSU-Okmulgee Manufacturing Technology articulated program employed the same instructor for the entire period studied, the OSU-Okmulgee Drafting articulated program changed instructors each academic year during this study. It was

assumed that the grading was consistent enough among all the instructors that these changes in faculty did not affect this study.

Two students who enrolled in the on-site articulated technical education programs at OSU-Okmulgee during the period of this study did not remain in the program. No interviews were conducted in this research to determine why these students dropped out of the articulated programs.

Finally, although the literature indicates that standardized college entrance exam scores are the second most reliable predictor of college academic performance (Willingham & Breland, 1982; Willingham, Lewis, Morgan, & Ramist, 1990), students enrolled in the programs studied were not required to take these exams, therefore this data was not compared to or correlated with their high school grades.

Definition of Terms

The following terms were defined as they pertained to this study and were presented as follows:

1. Articulation - a coordination of programs that allows students to progress without duplication of time, effort, or expense to themselves or taxpayers. It contains the granting of postsecondary or college credit for the mastery of competencies that are equivalent to the postsecondary or college course (Lerner, 1987 in Panter, 1997, p.4).

2. Concurrent Enrollment - "a condition that exists when a student is officially enrolled in two different institutions simultaneously" (Lyon, 1995, p. 5).

3. Cooperative Enrollment - "adult student enrollment in a vocational program at an area vocational-technical school that allows the adult student to simultaneously receive college credit toward an associate degree" (Public Information Office, n.d.).

4. GPA - Grade Point Average - "The GPA is an average derived from a system in which the familiar letter grades (A, B, C and so forth) are assigned numbers, and the numbers averaged." In the "four-point" system, the letter grade of A is assigned four points, B is assigned three points, C is assigned two points, D is assigned one point, and an F is assigned zero points. The appropriate point values are multiplied by the number of credit hours for the respective course grades and divided by the total number of credit hours to compute the GPA (Astin, 1971, p.3).

5. Technical Education -"Many of the early educational programs for technicians were designed for the field of engineering technology. This has led to the mistaken idea that technical education is a type of education for certain engineering technologies. Now, however, there is general agreement that technical education is a level of education instead of a type of education and that occupational education for the highest levels of subprofessionals in any occupational field is the proper province of technical education" (Evans & Herr, 1978, pp. 224-225).

6. Tech Prep - "is a program of at least 2 years of structured high school training that leads to a postsecondary degree or certificate. Tech prep programs contain a rigorous common core of mathematics, science, communications, and technology at the secondary level that are geared specifically to a technical career path" (Delaware State Department of Public Instruction, 1994).

7. On-site Articulation - "the enrollment of secondary students on the campus of the post secondary institution for the expressed purpose of gaining vocational skills for future employment or continued enrollment. Students are subjected to the college curriculum, philosophy, and preparation in the vocational setting. The articulation program occupies one half of the student day before the student returns to the home school to complete academic requirements. The area school provides students and support services as well as budgeted amounts for operation. The college provides facilities, equipment, and training for the student" (Panter, 1997, p. 14).

8. Vocational Education - "both secondary and postsecondary instruction designed to prepare students for employment within a specific occupation" (Public Information Office, n.d.).

Organization of the Study

Chapter I is an introduction the study and a review of the relevant literature is discussed in Chapter II. Chapter III describes the design and methodology used in this study while the results of the study are presented in Chapter IV. Finally, Chapter V offers a summary of the findings, conclusions of the study, and recommendations including future research.

CHAPTER II

REVIEW OF THE LITERATURE

There are a variety of reform movements in secondary schools, vocational-technical education, and higher education and some of these reform efforts would address more of the liberal or classical viewpoints. This review of the literature, however, will address the vocational-technical perspective which more closely fits the vocational-technical school and the technical college which were involved in this program.

The Demand for Educational Changes

The role of education in the United States is grounded in employment productivity. It is this fundamental principle that frames the way we view education. Carnevale, Gainer, & Meltzer (1988) described education in the United States as follows:

> The school system's ability to prepare people for work is the keystone to its cultural and political roles. American society is based on work. A job is the symbol of personal worth and the price of admission into the mainstream of the American community. Persons unprepared for work disappear from the community, drop out of the political system, and fall into the underground cultures and economies outside the mainstream of American life. The United States' huge investments in schooling reflect the nation's faith that education

> creates an autonomous and economically independent citizenry ready to participate in culture and polity. (p. 10)

But technological, informational, managerial and competitive changes in the workplace have stripped traditional education of the capacity to sufficiently develop students' skills and produce workers to keep the economy and society healthy (Davis & Botkin, 1994). Highly skilled and autonomous employees are now required to create and sustain high-performance organizations (Carnevale & Porro, 1994). Workers are no longer being asked just to perform rote tasks but to understand their work and the technology used to accomplish their work (Wiggenhorn, 1990). Front-line workers must now use their own judgment, make decisions, and assume responsibility (National Center on Education and the Economy, 1990). Because workers must be prepared for immediate productivity, qualify for job placement at a variety of skill levels in one position, and demonstrate translation skills to move between jobs and responsibilities (Carnevale, Gainer, & Meltzer, 1988), educational institutions must respond to this high level of worker preparation.

Changes must be made in the ways we organize and conduct educational endeavors if we are to respond effectively to the needs of learners (Lux, 1990, p. 3). Carnevale, Gainer, & Meltzer (1988) focused on students outside the college preparatory track when they wrote the following:

> Of particular concern to education reformers is the quality of education available to general and vocational education students, who together make up about 61 percent of the high school student population. This 'other half' of the high school graduating class appears to be receiving a poor basic skills education and outdated

> occupational preparation that ultimately limits their opportunities and effectiveness in the workplace. Reformers tend to agree that this population requires new curricula that integrate the basics with job-related learning. (p. 10)

The Southern Regional Education Board (1992) urged cooperation among schools and colleges to improve student achievement:

> Accordingly, SREB recommended that states seek ways to blend higher-level academic courses with quality vocational studies, especially for students who grasp information more readily through practical applications than through abstract learning modes. The recommendation assumed that academic education might not be the only way to improve the high school experience; an effective mixture of both academic and vocational studies might be a way to achieve a common goal of preparing high school graduates to work and learn. (1992, p. 2)

The demands for educational changes were made to vocational education and higher education. In 1985, Carter asserted that, "Vocational education must work closely with employers, educators and entire communities to find ways to improve programs for students and reach high levels of effectiveness" (p. 3). While three years later, Carnevale, Gainer, and Meltzer (1988) wrote that, "The principal challenge for American colleges and universities will be to find ways to deliver education less expensively to students in order to reach a wider student population" (p. 11). The National Research Council (1996) declared that the interdependency of educational institutions has been recognized. "Colleges and universities have established partnerships with businesses, schools, nonprofit organizations, and government agencies that support the missions of all" (National Research Council, 1996, p. 7).

The Need for Educational Connections

Demands for educational excellence and simultaneous cost-effectiveness have made the need for articulation of vocational education programs more apparent (Carter, 1985, p. 1). Hull and Parnell (1991) wrote that the liberal arts and practical arts must be combined in learning just as they are in the work world; articulation of vocational education and higher education can achieve this goal. The resulting articulation must provide a sequential vocational curricula which will "provide the opportunities for students to connect the academic subjects with the practices in a broad educational field" (Bottoms, 1984 cited in Tennessee State Department of Education, 1985, p. 13).

The limitations of traditional vocational education can be pushed aside by articulation with higher education technical programs. Parnell (1985) wrote that the problem is not a void of programs which are labeled as vocational, but in the types of programs offered:

> Some twenty-seven percent of high-school graduates finish vocational programs. But the percentage educated as technicians is very low (one percent). Almost fifty percent of high-school vocational training is in agriculture, home economics, and industrial arts, areas that do not reflect the most pressing needs of the marketplace. Nor do most high schools have the resources to mount sophisticated technical education programs that more nearly reflect the needs of the marketplace. As community colleges well know, such training programs are usually expensive and constantly in need of update. (p. 115)

The vocational education perspective is not the only lens that magnifies the need for connecting various levels of education. In evaluating efforts to strengthen the academic preparation of college students, Carter-Wells (1989) cited one problem as the "overly diversified curricula lacking integration of instruction from the high school to college level" (p. 1). In her summary of collaborative efforts, Carter-Wells promoted "the development of experimental transition schools that would combine the school-college years and thus avoid curricular overlap and duplication" (p. 2). This transition and collaboration between institutions should begin before students reach the traditional college age. The National Center on Education and the Economy (1990, June) recommended that "students entering technical and professional certification programs would do so around their junior year in high school at age 16" (p. 79).

The articulated secondary to postsecondary education program known as Tech Prep "has emerged in response to the call for reform of educational systems," according to Imel (1996, p. 1). Imel wrote that this program

> provides technical preparation in an occupational field, integrates academic and vocational education, and leads to placement in employment, [and] has emerged in response to the call for reform of educational systems. The idea for tech prep originated in the 1980s with the work of Dale Parnell, but it did not become widespread until the Carl D. Perkins Vocational and Applied Technology Act of 1990 provided federal funds for tech prep in every state. (p. 1)

But demands for the articulation of vocational skills and higher education can be traced even further back -- to the Morrill Act of 1862 which established landgrant colleges teaching vocational skills (Henderson, 1986).

Declaring it an inescapable conclusion that the responsibility for educational continuity is shared by secondary schools and the community college, Panter (1997) urged the articulation of vocational and college-level technical education. "Secondary schools and community colleges need to form strong cooperative working relationships if the educational opportunities they offer are to have long-term benefits for the diverse local populations which they jointly serve" (Panter, 1997, p. 16).

Articulated Technical Education as One Approach

Defined by the joining or interrelating of various educational levels (Henderson, 1982), the term articulation has been used to mean many things from broad curriculum linkage (Faddis, 1992), to dual enrollment, reverse articulation, and concurrent enrollment (Marrow & McLaughlin, 1995), to shared facilities and/or faculty (Lerner, 1987), to Tech Prep programs (Imel, 1996). Henderson (1982) described vocational articulation as eliminating unnecessary gaps or overlaps in student learning and leading directly to entry-level employment. Turlington (1994) summed up the potential of articulated education very simply with the statement that "an articulation program between high schools and a community college eliminates overlaps between curricula in the various institutions" (p. 3).

The intrinsic connections between community colleges and their feeder high schools can be capitalized on with the development of articulation arrangements. "Too often, in times past, some community colleges have paid insufficient attention to developing partnership arrangements with these high schools" (Parnell, 1985, p. 89). Cargill (1994) wrote that high schools and colleges should both bear responsibility for students entering college by articulating their curriculum to create educational continuity. Henderson (1982) echoed this point: "Articulation will enable the secondary school graduate to enter a very similar vocational training program at the technical college level and pick up with the next logical step in career development" (p. 6). The theme is to reduce costs without reducing the number of options available to students (Lerner, 1987).

Although the lists of advantages of articulated curriculum are many and sometimes long, the Tennessee State Department of Education (1985) presented the benefits from the students' perspective as follows: "An articulated vocational curriculum allows a student to move from one level of instruction to the next without repeating instructions for learning tasks already mastered, and without experiencing gaps in the presentation of relevant instructional material" (p. 11). In fact, Henderson (1986) declared students to be the most important beneficiaries. "Through articulation agreements," Henderson further wrote in 1986, "students who have taken high school programs are not penalized by having to retake courses and are encouraged to prepare themselves for higher order jobs" (p. 4). Additionally, the benefits should include student retention for post-secondary education and improved student motivation (Henderson, 1982). Faddis (1992) stated that, "All articulation efforts aim to widen the pipeline of students entering and preparing for vocational-technical careers. All seek to reduce or

eliminate duplication of training across educational levels. The primary goal of articulation efforts, however, is to efficiently meet the career preparation needs of students" (p. ix).

But the benefits of articulation also go to educators, employers, and the taxpayers (Henderson, 1982). Carter (1985) stated that "articulation favors the post-secondary institution, which benefits from the increased student enrollment (p. 5). Regardless of who receives the benefits, there are many good reasons articulation strategies should be considered; Lux (1990) listed these:

- Students gain advanced standing or postsecondary credit.
- Eliminates or avoids instructional repetition.
- Provides students with opportunities for additional course options.
- Serves as an additional recruitment tool.
- Improves relations between two or more educational institutions.
- Provides for more efficient use of tax funds. (p. 4)

Lyon (1995) enumerated 15 benefits derived from successful articulation as follows:

1. saves money for the student;
2. saves time for the student;
3. reduces duplication of instruction;
4. expands program content;
5. facilitates communications between the secondary and post-secondary instructors and administrators;
6. improves job readiness skills;

7. enhances public relations;
8. increases the usage of selected faculty, especially adjunct from the secondary schools;
9. increases enrollments in articulated courses at the secondary level;
10. increases enrollments in upper-level courses at the post-secondary level;
11. assists with recruitment at both levels;
12. improves job placement potential;
13. promotes a more unified educational system;
14. increases revenues for both institutions; and
15. reduces duplication of instruction. (p. 10)

The achievements of articulation should include a more sequential training which is, according to Henderson (1982), "responsive to the needs of a rapidly changing technological community" (p. 6). In 1986, Henderson described the status of articulation programs as follows:

> Currently, there are a number of community and junior colleges who have established or are considering articulated programs. The need for such efforts is emphasized by the large number of high school students who drop out and do not achieve the skills they need to survive in today's job market. A broader sense of cooperation and coordination among secondary and post-secondary institutions can provide one answer to the problem. Articulation provides an effective continuum on the educational ladder that may lead students toward advanced placement upon entrance to higher education. Curriculum development through

articulation may eliminate unnecessary duplication of curriculum, materials, and facilities. (p. 4)

In a case study of programs articulated between Oklahoma State University, Technical Branch, Okmulgee and Green Country AVTS in Okmulgee, Oklahoma, Panter (1997) reached the following conclusions:

1. Secondary students can successfully learn vocational skills in an articulated on site college curriculum.

2. Cooperation between participating institutions is the key element in the success of articulated programs.

3. Articulated programs reduce duplication and make better use of resources, facilities, equipment, and taxpayers dollars.

4. Secondary certification of college faculty is a problem for college instructors involved in the articulation program.

5. Parents like the articulated program because it offers opportunities for high school students that are not available at their high school. They also like the program because students gain high school credits as well as college credit.

6. Students gained skills from the articulated programs which permitted them to enter employment when the high school program was complete.

7. The articulation program being conducted at Green Country Area Vocational Technical School and Oklahoma State University-Okmulgee is a "win-win" situation for all participants. (pp. 130-131)

But the benefits of articulation can only be realized when articulation is systematically planned, coordinated, and executed. (Tennessee State Department of Education, 1985). This means that faculty and administrators must collaborate and cooperate to produce a more uniform curriculum (Henderson, 1982).

Student Eligibility for Articulated Programs

The determination of student eligibility for articulated vocational and technical education varies from complete open entry for any interested high school student, to careful testing and evaluation of candidates. Some programs require rigorous testing of students: The Delaware State Department of Public Instruction (1994) said, "The candidate should be tested using various instruments to determine basic English and Math skills, I.Q., spatial relations, reference ability, manual dexterity, and vocational interest" (p. II-3). Other articulated programs prefer that students complete prerequisite math and science courses (Smith, 1989). A review of best practices of vocational-technical program articulation by Faddis (1992) promoted a specific recommendation for using students' prior vocational coursework grades as eligibility standards for entrance into articulation programs. Because the articulated education programs are distinctly different from traditional vocational education, the most ambitious programs seek to attract college-bound students and place " vocational education in the same arena with the 'Academic Track' departments" (Smith, 1989, p. 79).

For many programs, however, the only noted parameters of student eligibility for articulated education were enrollment in the eleventh or twelfth grades of high school (Faddis, 1992; Henderson, 1986; Marrow, 1995; Martin & Wells, 1985; Mertes, 1986; Portland Area Vocational Technical Consortium, 1989; Powell & Kelly, 1989; Wisconsin State Council on Vocational Education, 1989). Parnell (1985) wrote that articulated programs must be developed for those he called "ordinary students" (p. 171). Even though articulation programs may be an avenue to retain at-risk students, Lux (1990) urged program planners to determine student eligibility standards as a key step in designing successful articulation programs.

Predicting College Academic Performance

Whether they seek to be highly selective in order to maintain prestige, or carefully select students with the highest potential of success because of limited resources, colleges have been seeking accurate methods of predicting academic performance of students since before the turn of the century. Henderson (1986) traced this practice back to 1899 when the National Education Association's Committee on College Entrance Requirements "concerned themselves with admission requirements which were to insure some standard for incoming students" (p. 4). In 1965, Lavin proclaimed increased concern with the prediction of academic performance. Research on the question continued into the current decade (Willingham, Lewis, Morgan & Ramist, 1990; Lyerla & Elmore, 1996). Bloom and Peters (1961) maintained that the use of academic prediction data enabled each school to place students as well as the most experienced counselors.

The consensus seems to be that high school grades, gender, and standardized college entrance exam scores are the most reliable factors in predicting the academic performance of students in college; high school grades are favored. Astin (1971) said, "Of all of the information available about the high school student, his record of academic performance is the best single indicator how well he will do in college" (p. 5).

The trail of research depending on previous grades to predict future academic achievement is long. In 1961, Bloom and Peters traced this research as follows:

> As early as 1917, Lincoln (1917) reported a correlation of +.69 between high school standing and freshman college standing for 253 Harvard students who had reached junior or senior rank. In 1920, Jordan (1922) found a correlation of +.50 between high school senior grades and college freshman grades for a group of students at the University of Arkansas. In his review of the literature on college prediction studies up to 1933, Segel (1934) summarized the finding of twenty-three studies of the prediction of general college scholarship using average high school marks. The forty-eight coefficients cited ranged from +.29 to +.69, with a median value of +.55.
>
> Since 1933 there have been hundreds of additional studies published on college prediction, and in these studies high school grades have almost always been included as a predictor. In fact, most researchers have come to the conclusion that high school average grades are the best single measure from which to predict college success. (pp. 8-9)

But student characteristics also influence high school grades; gender is the critical characteristic to be taken into consideration. Astin (1971) wrote that "literally hundreds of studies have shown that girls get higher grades in secondary schools than boys do" (p. 4). Astin determined that this trend followed students into college.

A final factor that seems to add to the reliability of academic prediction is the student's score on a standardized college entrance exams such as the American College Test (ACT) or the Scholastic Aptitude Test (SAT). "Test scores and high school record (HSR) were equally good predictors of admissions decisions and equally good predictors of freshman grades in these colleges" (Willingham & Breland, 1982, p. 8). Although Astin, Green and Korn (1987) acknowledged a decline in academic skills and preparation from 1966 to 1985, a 1990 study by Willingham, Lewis, Morgan, and Ramist called the correlation between SAT scores, high school grades and college grades "moderately good" (p. xvii). Willingham and Breland (1982) had already decided that measures other than the test scores and high school record had been studied intensively for decades and that they had "not come up with any other measures that would add information of practical significance in predicting college GPA" (p. 8).

Summary

The educational system must change if it is to serve the current economy and society (Davis & Botkin, 1994). This demand for reform calls for education to effectively respond to learners' needs to see the connectedness and applicability of learning. Hull and Parnell (1991) wrote that education was giving scant attention to the

continuity of student learning. On-site articulation programs seek to attack this chasm in continuity. Cargill (1994) has asserted that curriculum articulation between high schools and higher education could reduce miseducation due to miscommunication.

The benefits of articulated education between high schools and colleges are many and the winners in these programs include students, secondary schools, post-secondary schools, educators, employers, and taxpayers. Various forms of articulated programs are easily found, but the determination of student eligibility for participation in these programs is not clearly defined.

Students have long been selected for college admission based on predictors of their academic success. The criteria for admission to Oklahoma institutions in the state system of higher education are high school graduation or equivalency, high school grade point average, and the student's participation in the American College Testing program (Oklahoma State Regents for Higher Education, 1996). While the prediction of college grades of individual students is inexact, the correlation between high school grades and future college grades is widely accepted as the best predictor of future success. Statistics using correlation coefficients and regression analysis are the accepted methods to use students' previous academic records to predict future academic performance.

CHAPTER III - PROCEDURES

DESIGN AND METHODOLOGY

Population

The population studied included Green Country AVTS' on-site articulated program secondary students in technical education courses at OSU-Okmulgee inclusive of the school years 1993-94, 1994-95, 1995-96, and 1996-97. The programs of study offering on-site articulated courses at OSU-Okmulgee during the time frame of this study were Drafting and Manufacturing Technology (MFG). These programs accepted eleventh and twelfth grade students who were enrolled in any one of the eight Okmulgee County high schools which are as follows: Beggs, Dewar, Henryetta, Morris, Okmulgee, Preston, Schulter, and Wilson. These are the secondary schools which Green Country AVTS serves.

This study included the total population of 61 individuals over the four-year period of this study. Seven of these students were female and 54 were male. The 26 subjects in the Drafting program during the timeframe of this study included 6 females and 20 males. The 35 subjects in the MFG program during the timeframe of this study included 1 female and 34 males. The study population is summarized in Table I.

TABLE I

SUBJECTS OF THIS STUDY BY PROGRAM OF STUDY AND GENDER

26 Drafting Students		35 Manufacturing Technology Students	
Female	*Male*	*Female*	*Male*
6	20	1	34

Fourteen of these students completed both years of the program, four in Drafting and ten in MFG. Of the two-year-program-completers, 2 Drafting students were female and 2 were male while 1 female and 9 males completed two years of the MFG program. The students completing two years of their program are represented in Table II.

TABLE II

STUDENTS COMPLETING TWO YEARS OF THEIR PROGRAM
BY PROGRAM OF STUDY AND GENDER

4 Drafting Students		10 Manufacturing Technology Students	
Female	*Male*	*Female*	*Male*
2	2	1	9

In 1993-94, there were no articulated students enrolled in the Drafting program and nine articulated students enrolled in the MFG program. In 1994-95, there were 9 articulated students enrolled in the Drafting program and 11 articulated students enrolled in the MFG program. In 1995-96, there were 9 articulated students enrolled in the Drafting program and 13 articulated students enrolled in the MFG program. In 1996-97, there were 12 articulated students enrolled in the Drafting program and 12 articulated students enrolled in the MFG program. Table III shows the number of students enrolled in on-site articulated courses at OSU-Okmulgee by program, year and gender.

TABLE III

STUDENTS ENROLLED IN ON-SITE ARTICULATED COURSES AT OSU-OKMULGEE BY PROGRAM, YEAR, AND GENDER

	Drafting		Manufacturing Technology	
	Female	*Male*	*Female*	*Male*
1993-1994	0	0	0	9
1994-1995	4	5	0	11
1995-1996	3	6	1	12
1996-1997	1	11	1	11

Design

Multiple Linear Regression Analysis

The high school grade point averages of Green Country AVTS technical on-site articulated program secondary students were determined at the time they entered technical education courses at OSU-Okmulgee. The OSU-Okmulgee course grades were determined for Green Country AVTS technical on-site articulated program secondary students in technical education courses at OSU-Okmulgee.

In order to determine if high school grade point averages were accurate predictors of academic performance in this articulated technical education program, these students' high school grade point averages at the time they entered the articulated program and their OSU-Okmulgee course grades were then compared and correlated using t-Tests, correlation coefficients, and regressional analysis statistical techniques. These methods were chosen because of their wide use in the very similar application of using high school grades to predict college academic performance (Astin, 1971; Bartz, 1988; Willingham, Lewis, Morgan & Ramist, 1990).

Collection of Data

All of the data were collected by the researcher from the students' home high schools, Green Country AVTS, and OSU-Okmulgee. As a faculty member at OSU-Okmulgee and as the Green Country Tech Prep Grants Writer and Evaluator, the researcher had professional access to the data used in this research and complied with all applicable policies of student confidentiality. The list of students in the population

studied was provided by Green Country AVTS and confirmed by the OSU-Okmulgee Drafting and Manufacturing Departments. This data included the students' names, gender, program of study, years of enrollment, and home high school name. The students' high school transcripts were provided by their home high schools. The students' OSU-Okmulgee grades were provided by OSU-Okmulgee. The data were compiled and only reported as group data which could not be used to identify any individual student. The data is kept in a locked file and only the researcher has access to data which could identify individual students.

Analysis of Data

A correlation coefficient analysis was used to establish the degree of predictability of the subjects' technical program articulated course grades based on the subjects' high school grade point averages. Collected data were entered in an Excel database and statistically analyzed. Correlations tested for a direct relationship between variables. Because a significant relationship between variables was established, a multiple linear regression was used to determine the degree of predictability between the variables.

The statistical technique of correlation coefficient is the accepted method of establishing a relationship between two sets of scores from the same subjects (Linton, Gallo, & Logan, 1975). These sets of scores can be students' high school grades and college grades. Bartz (1988) wrote, "If there is a relationship between two variables, such as high school grades and college success, we say that they are correlated" (p. 176). After a significant correlation has been established between two variables, one variable can be

used to predict the other by using regression analysis methods (Bartz, 1988). In fact, the continuing example given by Bartz for using prediction and regression is to predict a student's college GPA after a correlation has been established between high school grade point average (GPA) and college GPA. Astin (1971) explained this example, too:

> The degree of relationship or association between any two measures, such as high school grades and college grades, is conventionally reported in terms of a correlation coefficient. For those readers who may not be familiar with statistical techniques, a correlation coefficient reflects the degree of relationship or association between two measures (such as high school grades and college grades). The size of the coefficient can range between -1.00 and +1.00. If -- as in the case of high school grades and college grades -- people with high scores on one measure tend to have high scores on the other measure, and people with low scores on one tend to have low scores on the other, the two measures are said to be positively correlated and the coefficient will be positive in sign. If high scores on one measure tend to be associated with low scores on the other (as, for example, with high school grades and number of absences from school), then the two measures are said to be negatively correlated, and the coefficient will be negative in sign. If the two measures are unrelated (the person's height and his grades, for example), the correlation coefficient will be zero. (p. 6)

Willingham, Lewis, Morgan, & Ramist (1990) wrote that the regression line and the correlation coefficient could both be used in establishing the relationship between a predictive factor and students' future grade point averages:

> Compared to the regression slope, the correlation coefficient has two advantages that likely account for its frequent use. It is expressed on a simple scale where zero indicates no systematic relationship and 1.0 indicates a perfect relationship. Also, a correlation is largely unaffected by the fact that different measures may be expressed on different scales. (p. 9)

According to Sprinthall (1990), a correlational technique can "allow the researcher to make better than chance predictions" (p. 313). With reliable predictions of student academic performance, designers of successful articulation programs can establish student eligibility standards for improved recruitment and selection of students (Lux, 1990).

CHAPTER IV

PRESENTATION OF FINDINGS

Introduction

The purpose of this study was to determine if high school grade point averages were accurate predictors of academic performance for Green Country AVTS' on-site articulated program secondary students in technical education courses at OSU-Okmulgee. The statistical method of correlation coefficient was used to determine the degree of relationship between the study subjects' high school grade point averages and their grades in on-site articulated program technical education courses OSU-Okmulgee. A regression analysis was used to predict students grades in OSU-Okmulgee on-site articulated technical programs based on their high school grade point average.

This chapter presents the analysis of data collected about the 61 (n=61) eleventh and twelfth grade students enrolled in any one of the eight Okmulgee County high schools and the OSU-Okmulgee Drafting or Manufacturing Technology (MFG) program of study through Green Country AVTS during the 1993-1997 time frame of this study. The students' home high schools, Green Country AVTS, and OSU-Okmulgee provided the data used. The data were analyzed using an Excel database.

The first section of this chapter described the subjects of this study. The results of the research objectives were discussed in the second section.

Description of the Subjects

The 61 subjects of this study were enrolled in eleventh or twelfth grade in any one of the eight Okmulgee County high schools and the OSU-Okmulgee Drafting or Manufacturing Technology program of study through Green Country AVTS during the 1993-1997 time frame of this study. Students came from each of the eight high schools in Okmulgee County: 8 from Beggs, 1 from Dewar, 2 from Henryetta, 13 from Morris, 10 from Okmulgee, 18 from Preston, 7 from Schulter, and 2 from Wilson. Table IV shows the distribution of students by home high school. Fourteen of these students completed both years of the program; 4 in Drafting and 10 in MFG.

TABLE IV

DISTRIBUTION OF STUDENTS BY HOME HIGH SCHOOL

High School	Drafting		Manufacturing Technology		TOTAL
	Female	Male	Female	Male	
Beggs	0	3	0	5	8
Dewar	0	1	0	0	1
Henryetta	0	1	0	1	2
Morris	3	6	0	4	13
Okmulgee	1	3	0	6	10
Preston	1	3	0	14	18
Schulter	0	3	1	3	7
Wilson	1	0	0	1	2
TOTAL	6	20	1	34	61

Table V shows that of the two-year-program-completers, 2 Drafting students were female and 2 were male, while 1 female and 9 males completed two years of the MFG program.

TABLE V

STUDENTS COMPLETING TWO YEARS OF THEIR PROGRAM
BY PROGRAM AND GENDER

4 Drafting Students		10 Manufacturing Technology Students	
Female	*Male*	*Female*	*Male*
2	2	1	9

The raw data are presented in Appendix H; data are omitted which could identify individual students.

Results of the Research Objectives

Four objectives were established to accomplish the purpose of this study. Each objective and the outcome is described below.

1. Determine the high school grade point averages of Green Country AVTS' technical on-site articulated program secondary students at the time they entered technical education courses at OSU-Okmulgee inclusive of the school years 1993-94 to 1996-97.

The subjects' high school grade point averages were determined at the time they entered on-site articulated technical education courses at OSU-Okmulgee by using their high school transcripts. The grade point average was computed using a 4.0 system in which the letter grades A, B, C, D, and F were assigned numbers, and the numbers averaged. The letter grade of A was assigned four points, B was assigned three points,

C was assigned two points, D was assigned one point, and an F was assigned zero points. The sum point values were multiplied by the number of credit hours for the respective course grades and divided by the total number of credit hours to compute the high school grade point average (Astin, 1971). Table VI shows the descriptive statistics resulting from these high school GPAs for the population studied.

TABLE VI

TOTAL POPULATION HIGH SCHOOL GRADES

Mean	2.57006
Standard Error	0.08082
Median	2.42
Mode	2.28
Standard	0.63122
Sample	0.39844
Kurtosis	-
Skewness	0.14699
Range	2.822
Minimum	1.04
Maximum	3.862
Sum	156.774
Count	61

2. Determine the OSU-Okmulgee course grades of Green Country AVTS' technical on-site articulated program secondary students in technical education courses at OSU-Okmulgee inclusive of the school years 1993-94, 1994-95, 1995-96, and 1996-97.

Course grades were derived from the subjects' high school transcripts and computed using the same 4.0 formula as described for computing their high school grade

point average. Table VII shows the descriptive statistics resulting from these OSU-Okmulgee GPAs for the population studied.

TABLE VII

TOTAL POPULATION OSU-OKMULGEE GRADES

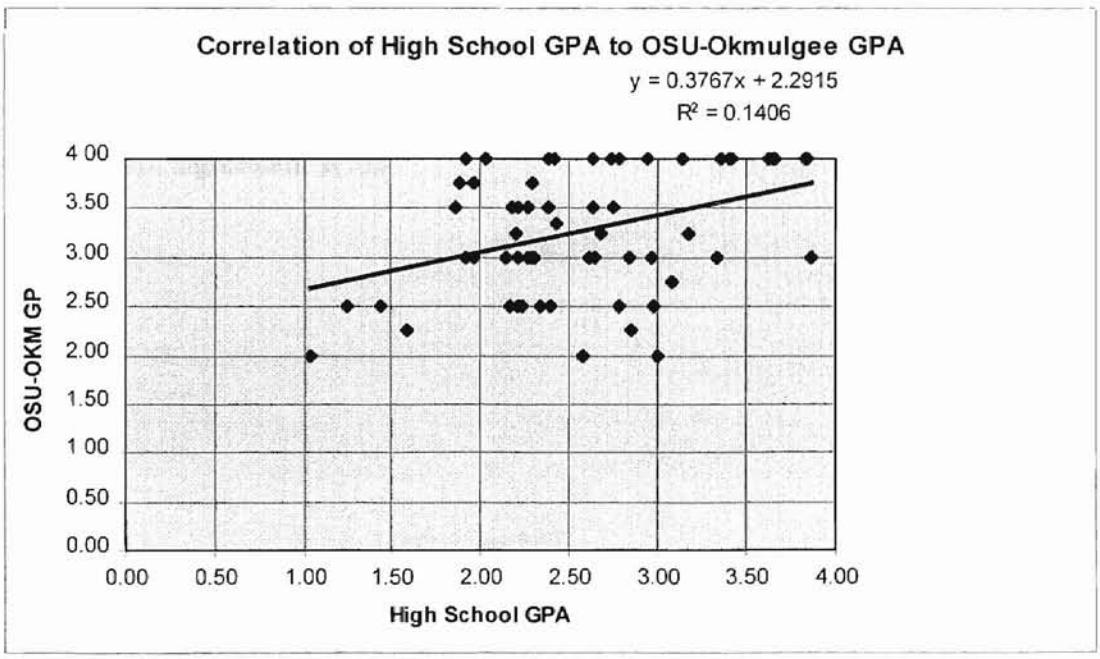
Mean	3.259574
Standard Error	0.081191
Median	3.25
Mode	4
Standard Deviation	0.63412
Sample Variance	0.402108
Kurtosis	-1.06466
Skewness	-0.31077
Range	2
Minimum	2
Maximum	4
Sum	198.834
Count	61

3. and 4. Compare and determine the correlation of high school grade point averages and OSU-Okmulgee course grades of the Green Country AVTS technical on-site articulated program secondary students in technical education courses at OSU-Okmulgee inclusive of the school years 1993-94, 1994-95, 1995-96, and 1996-97. These comparisons and correlations were computed using t-Tests, correlation coefficients, and regressional analysis statistical techniques. These methods were chosen because of their wide use in the very similar application of using high school grades to predict college academic performance (Astin, 1971; Bartz, 1988; Willingham, Lewis, Morgan & Ramist, 1990).

Grades were compared and correlated for the entire population studied. As shown in Figure 1, the result of the correlation was statistically significant: $R^2 = 0.1406$; alpha = .05; $y = 0.3767 + 2.2915$, significant. The probability of obtaining this correlation by chance is less than 5 chances in 1,000 ($p = .005$). This coefficient of determination explains only 14 percent of variation.

As compared to the range of high school grade point averages of the subjects of this study, there was a narrow range of grades assigned in their on-site articulated program technical education courses at OSU-Okmulgee.

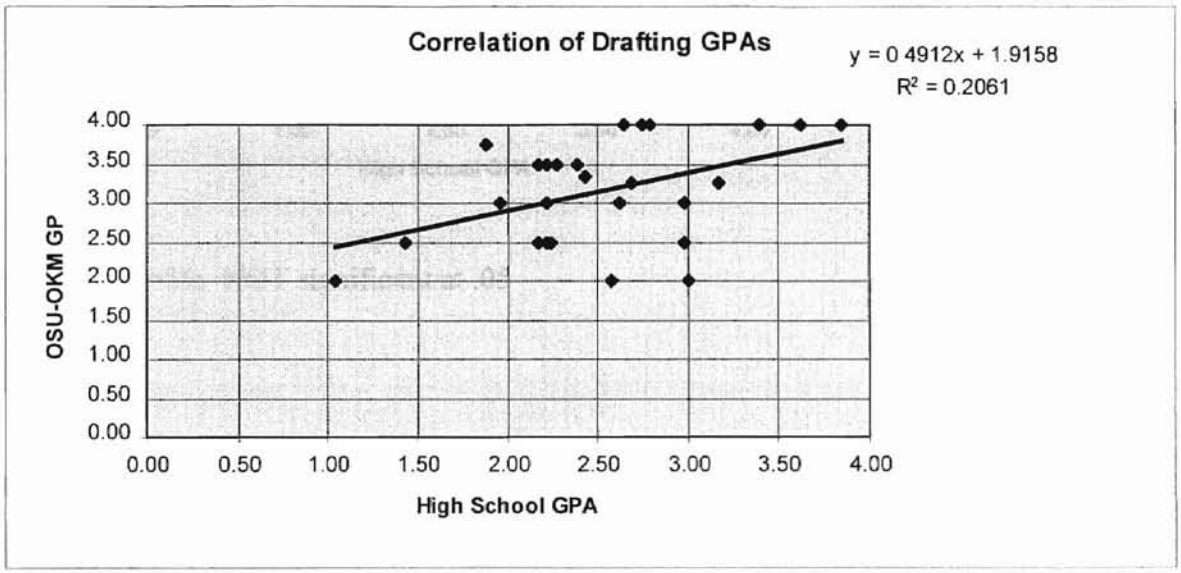
FIGURE 1



R = .375, n = 61; significant at .05; p = .005

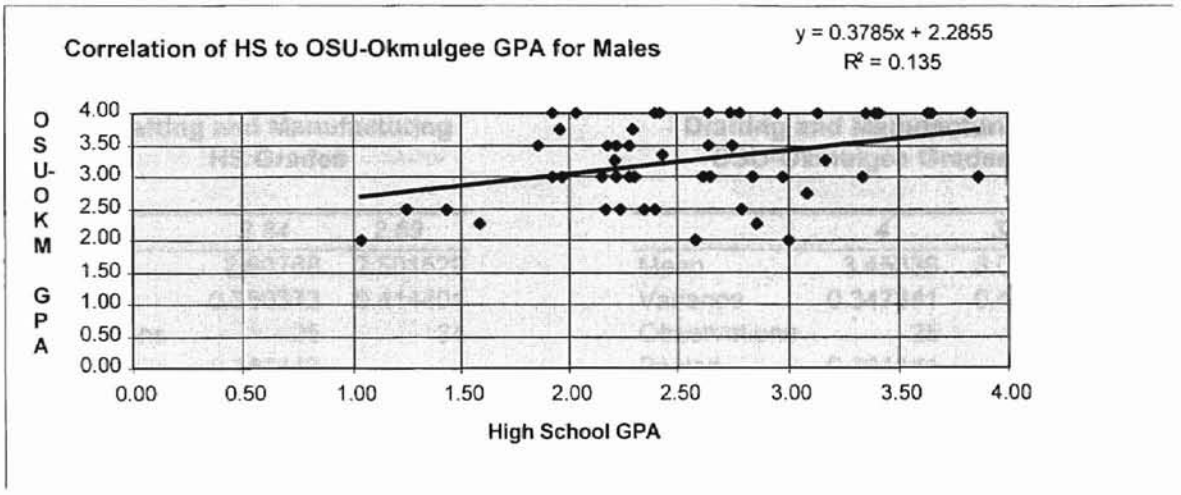
The correlation was also significant for the population sub-groups of Drafting students and for males, it was not significant for the sub-groups of Manufacturing students or for females. See Figures 2, 3, 4, and 5.

FIGURE 2



R= .454, n=26; significant at .05

FIGURE 5



R= .367, n=54; significant at .05

A two sample t-Test, shown in Table VIII, determined that there is no significant difference in the high school grade point averages of students who choose the drafting or manufacturing program. The same test, Table IX, revealed a significant difference in the OSU-Okmulgee grade point averages of students who choose the drafting or manufacturing program (t = 2/100612. significant at .05, p = < .031905.

TABLE VIII

t-Test: Two-Sample Assuming Equal Variances

Drafting and Manufacturing HS Grades

	3.84	*2.69*
Mean	2.60768	2.501529
Variance	0.350373	0.414401
Observations	25	34
Pooled Variance	0.387442	
Hypothesized Mean Difference	0	
df	57	
t Stat	0.647296	
P(T<=t) one-tail	0.26002	
t Critical one-tail	1.672029	
P(T<=t) two-tail	0.520039	
t Critical two-tail	2.002466	

TABLE IX

t-Test: Two-Sample Assuming Equal Variances

Drafting and Manufacturing OSU-Okmulgee Grades

	4	*3.25*
Mean	3.45336	3.095588
Variance	0.347841	0.405359
Observations	25	34
Pooled Variance	0.381141	
Hypothesized Mean Difference	0	
df	57	
t Stat	2.199616	
P(T<=t) one-tail	0.015952	
t Critical one-tail	1.672029	
P(T<=t) two-tail	0.031905	
t Critical two-tail	2.002466	

Separate two sample t-Tests, shown in Tables X and XI, determined that there is no significant difference in the high school or OSU-Okmulgee grade point averages of males and females.

TABLE X

t-Test: Two-Sample Assuming Equal Variances

Females' High School GPAs Compared to Males' High School GPAs

	3.84	*2.17*
Mean	2.6285	2.547038
Variance	0.380584	0.388117
Observations	6	53
Pooled Variance	0.387456	
Hypothesized Mean Difference	0	
df	57	
t Stat	0.303832	
P(T<=t) one-tail	0.381181	
t Critical one-tail	1.672029	
P(T<=t) two-tail	0.762363	
t Critical two-tail	2.002466	

TABLE XI

t-Test: Two-Sample Assuming Equal Variances

Females' OSU-Okmulgee GPAs Compared to Males' OSU-Okmulgee GPAs

	4	*2.5*
Mean	3.25	3.261019
Variance	0.4	0.403858
Observations	6	53
Pooled Variance	0.40352	
Hypothesized Mean Difference	0	
df	57	
t Stat	-0.04027	
P(T<=t) one-tail	0.484009	
t Critical one-tail	1.672029	
P(T<=t) two-tail	0.968018	
t Critical two-tail	2.002466	

5. Determine the extent to which high school grade point averages can be used to predict the academic performance of secondary students in technical education programs articulated between Green Country AVTS and OSU-Okmulgee.

The extent to which high school grade point averages can be used to predict the academic performance of secondary students in technical education programs articulated between Green Country AVTS and OSU-Okmulgee was determined to be moderately significant for the entire population studied. Bloom and Peters had pronounced that

"high school average grades are the best single measure from which to predict college success" (1961, pp. 8-9). However, because 86 percent of the variation of the students' OSU-Okmulgee grade point averages is not explained by their high school grade point averages, other factors should be considered.

Although research by Willingham, Lewis, Morgan and Ramist found that standardized entrance exam scores and high school grade point average were "equally good predictors" (1982, p. 8), this study has shown that for the entire population studied and for some sub-groups of the population, the high school record alone is a moderately good predictor of OSU-Okmulgee grades in on-site articulated technical programs. However, no SAT or ACT entrance exams were given to the students in this study prior to their entry into the on-site articulated technical programs.

Because of the significant difference in the OSU-Okmulgee grades of Drafting and Manufacturing students in this study, as shown in Figures 2 and 3, the high school grade point average is a moderately good predictor of academic performance for Drafting students, but not for Manufacturing students. These findings indicate that the data should be separated by program of study whenever being evaluated.

Although a t-Test revealed no significant difference in the grades of females and males in this study (Tables X and XI), the correlation of high school grades to OSU-Okmulgee grades was significant for males but not for females (Figures 4 and 5). The population of females in this study was very small (n=7) and may have not been large enough to extrapolate an accurate predictor.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The purpose of this study was to determine if high school grade point averages prior to enrollment in articulated college-level technical education were accurate predictors of academic performance for Green Country AVTS' on-site articulated program secondary students in technical education courses at OSU-Okmulgee.

There were five objectives established to accomplish the purpose of this study. The subjects' high school grade point averages were determined at the time they entered on-site articulated technical education courses at OSU-Okmulgee by using their high school transcripts. Then, their course grades were determined for technical on-site articulated program courses at OSU-Okmulgee inclusive of the school years 1993-94, 1994-95, 1995-96, and 1996-97. Next, the subjects' high school grade point averages and OSU-Okmulgee on-site articulated technical education course grades were compared and correlated. Finally, the extent to which high school grade point averages can be used to predict the academic performance of secondary students in technical education programs articulated between Green Country AVTS and OSU-Okmulgee was determined to be moderately good for the entire population studied and for the sub-group of Drafting

students. The correlation between high school grades and OSU-Okmulgee grades was statistically significant for the 54 males in the population studied, but not for the very small population of 7 females in the population. The extent to which high school grade point averages can be used to predict the academic performance of secondary students in Manufacturing technical education program articulated between Green Country AVTS and OSU-Okmulgee was determined to be insignificant.

This study included the 61 eleventh and twelfth grade students who were enrolled in any one of the eight Okmulgee County high schools and the OSU-Okmulgee Drafting or Manufacturing Technology program of study through Green Country AVTS during the any of the school years of 1993-94, 1994-95, 1995-96, or 1996-97.

The literature review consisted of six major areas: the demand for educational changes, the need for educational connections, articulated technical education as one approach, student eligibility for articulated programs, predicting college academic performance, and a summary.

An analysis of the data revealed that high school grade point averages were accurate predictors of academic performance for the entire population studied of Green Country AVTS' on-site articulated program secondary students in technical education courses at OSU-Okmulgee. The moderately good prediction found in this study was very similar to the results of other research in the prediction of college grade point averages (Bloom and Peters, 1961). Because there was a significant correlation between the two variables of high school grades and OSU-Okmulgee grades, a regression analysis was performed. Further analysis of the data revealed that high school grade point averages

were moderately good predictors of academic performance for students in the on-site articulated Drafting program, but not for students in the on-site articulated Manufacturing program at OSU-Okmulgee. It is of interest that the correlation was significant for one program in this study, but not for the other. The difference could be attributable to chance, but it is unknown and may merit future research. A regression analysis was also performed for students in the on-site articulated Drafting program. High school grade point averages were also moderately good predictors of academic performance for males in the on-site articulated technical education programs at OSU-Okmulgee. While some research (Astin, 1971) has noted that females get higher grades in high school and college than boys do, the population of females in this study was too small to draw the same conclusion or disprove it.

Conclusions

Conclusions from this research were:

1. Students' high school grade point averages can be used to predict academic performance for on-site articulated technical program secondary students in Drafting courses at OSU-Okmulgee, however high school grade point averages cannot reliably be used as a predictor of academic performance for students in the Manufacturing program.

2. High school grade point averages should be considered in the recruitment and selection of students to participate in the Green Country AVTS and OSU-Okmulgee on-site articulated technical Drafting program.

Recommendations for Practice

The findings and conclusions of this study have implications for the counseling and recruitment of students for high school-to-college articulated technical programs of study which should, in turn, affect the design of current and future articulated technical education programs. High school grade point averages should be a factor in the counseling and recruitment of on-site articulated program secondary students in technical education courses at OSU-Okmulgee. These findings support the exhortation of Lux (1990) to determine student eligibility standards as a key step in designing successful articulation programs.

When using high school grade point averages to predict OSU-Okmulgee grades, the data should be separated into students' majors because there appears to be a difference in the populations.

Students' scores on standardized college entrance exams such as the American College Test (ACT) or the Scholastic Aptitude Test (SAT) add to the reliability of prediction of future academic performance (Willingham & Breland, 1982; Willingham, Lewis, Morgan, and Ramist, 1990). Students could be required to take the ACT exam prior to entry into technical articulated programs at OSU-Okmulgee. The accuracy of these scores, used in combination with high school grade point averages, should be evaluated as a predictive factor.

Recommendations for Further Research

Further research is needed to identify which other criteria should be considered in the counseling, recruitment, and selection of students to participate in these programs. It was notable that only 14 of the 61 participants in this study completed both years of the program.. Further research could explore other evidence of student success such as completion of both years of the technical articulated programs. This research will become increasingly worthwhile because as the programs continue, the number of students grows and the history of the programs should yield more data. Finally, further research could evaluate the conduct and outcomes of the technical on-site articulated programs as well as similar technical concurrent programs of study. Recommendations for future research are as follows:

1. Focus on the different on-site articulated technical programs to determine why this study was unable to predict the academic achievement of students in the Manufacturing program.

2. Conduct studies of the reliability of standardized testing to predict the academic achievement and persistence of technical high school-to-college articulated program students.

3. Study the narrow range of grades assigned in the subjects' on-site articulated program technical education courses at OSU-Okmulgee as compared to their range of high school grade point averages.

4. Conduct personal interviews and qualitative studies to determine why two students who enrolled in the on-site articulated technical education programs at OSU-Okmulgee during the period of this study did not persist in the programs.

5. Determine why females were under-represented in the on-site articulated technical education programs at OSU-Okmulgee during this study.

6. Compare the cohort which participated in the on-site articulated technical education programs at OSU-Okmulgee and the cohort of Okmulgee County high school students who did not participate in these programs to determine if these programs improve student retention and persistence to high school graduation.

7. Examine students' academic records to determine if the types of high school core and elective courses that they take affect their performance in articulated technical courses or improve the predictability of their performance in these courses.

8. Examine students' involvement in extracurricular activities to determine if these activities influence their performance in articulated technical courses or improve the predictability of their performance in these courses.

9. Explore evidence of student success other than grades, such as completion of both years of the technical articulated programs.

10. Study the high school technical concurrent programs at OSU-Okmulgee to evaluate and attempt to predict the academic achievement and persistence of these students.

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APPENDIX A

OKLAHOMA STATE BOARD OF VOCATIONAL AND TECHNICAL EDUCATION

MINUTES

FEBRUARY 20, 1992

MINUTES OF THE MEETING

OF THE STATE BOARD OF

VOCATIONAL AND TECHNICAL

EDUCATION

February 20, 1992

votech
OKLAHOMA DEPARTMENT
OF VOCATIONAL
AND TECHNICAL EDUCATION

March 5, 1992

MEMORANDUM

TO: Oklahoma Tax Commission
Ad Valorem Tax Division

FROM: Tom Friedemann, Assistant State Director

SUBJECT: Formation of Area Vocational-Technical School District No. 28 in Okmulgee and McIntosh Counties

The State Board of Vocational and Technical education, at its regular monthly meeting held, February 20, 1992 in Oklahoma City, officially designated the vo-tech district formed on April 23, 1991, as Area Vocational-Technical School District No. 28. The State Board also approved the results of a five mill operating levy election conducted February 18, 1992, which were as follows:

FOR THE PROPOSITION	-	1,351
AGAINST THE PROPOSITION	-	1,109

A description of the public school systems in Area Vocational-Technical School District No. 28 is as follows: Territory comprising all school districts in Okmulgee County, Oklahoma, excluding any portion that is presently being served by an area vocational-technical school district which is that portion of Mounds. (C-5 served by Central Oklahoma Area Vocational-Technical School), Liberty (T-14 served by Tulsa County Area Vocational-Technical School), Haskell (M-2 served by Indian Capital Area Vocational-Technical School), Graham (OKF-32, served by Wes Watkins Area Vocational-Technical School), and Weleetka (OKF-31 served by Wes Watkins Area Vocational-Technical School) and including that portion of Dewar School District No. I-008 that lies in McIntosh County.

Attachment

avts0004

1500 West Seventh Avenue
Stillwater, OK 74074-4364
(405) 377-2000

Mrs. Shepherd moved approval of the plans for the new addition. Dr. Oliver seconded the motion which carried with the following votes: Mr. Ferguson, yes; Mrs. Robinson, yes; Mr. Reece, yes; Mr. Johnson, yes; Mr. Potts, yes; Mrs. Shepherd, yes; Mr. Bentley, yes; Dr. Oliver, yes; and Mr. Bartlett, yes.

Western Oklahoma AVTS to Purchase Property

Dr. Friedemann said a request had been received from the Western Oklahoma AVTS District No. 12, Burns Flat, Washita County, for approval to purchase ten acres of land located in Sayre, Oklahoma. The legal description is as follows:

> A tract of land 387.20 x 892.08 x 525.68 feet with an angle/radius on the South located on U.S. Highway 66 next to Interstate 40, a part of the Southwest Quarter (SW/4) of the Northeast Quarter (NE/4) of Section 27, Township 10 North, Range 23 West of the Indian Meridian, City of Sayre, Beckham County, Oklahoma.

Dr. Friedemann said the purchase price for the property is $29,500 and will be funded locally. He went on to say this purchase is in anticipation of securing enough additional annexations to eventually have a branch campus in Sayre.

He said, currently, Sweetwater Public School District I015, Rogers Mills County, and Sayre Public School District I031, Beckham County, have annexed to Western Oklahoma and they are busing students to Burns Flat which is quite a distance.

Approval of the purchase was moved by Dr. Oliver. Mr. Johnson seconded the motion and it carried as follows: Dr. Oliver, yes; Mr. Bentley, yes; Mrs. Shepherd, yes; Mr. Potts, yes; Mr. Johnson, yes; Mr. Reece, yes; Mrs. Robinson, yes; Mr. Ferguson, yes; and Mr. Bartlett, yes.

Board Approves AVTS District No. 28 as an Official District

Dr. Friedemann said he was pleased to announced that on Tuesday, February 18, 1992, Okmulgee County successfully passed their five mill operational levy which officially allows them to receive funds and to be recognized as an area vocational and technical school district. Dr. Friedemann said having this approval will make the District eligible for state and federal dollars.

Dr. Friedemann said the election count was: yes, 1,351 and no, 1,109. He said the rural areas really carried the election. He then said the Department was pleased with the results and congratulated the local board on a nice campaign.

Mr. Reece moved that AVTS District No. 28 be officially recognized as a District and that Department staff keep a close watch for possible duplication of programs between institutions in the area. Dr. Oliver seconded the motion and it carried with the following votes: Mr. Ferguson, yes; Mrs. Robinson, yes; Mr. Reece, yes; Mr. Johnson, yes; Mr. Potts, yes; Mrs. Shepherd, yes; Mr. Bentley, yes; Dr. Oliver, yes; and Mr. Bartlett, yes.

APPENDIX B

MEMORANDUM OF UNDERSTANDING

BETWEEN

GREEN COUNTRY AREA VOCATIONAL TECHNICAL SCHOOL

AND

OKLAHOMA STATE UNIVERSITY-OKMULGEE

MEMORANDUM OF UNDERSTANDING

between

Oklahoma State University/Okmulgee

and

Green Country Area Vocational Technical School District No. 28

Purpose

The Oklahoma State University at Okmulgee (OSU/Okmulgee) and Green Country Area Vocational Technical School will increase and improve the educational opportunities for citizens in the greater Okmulgee geographical area through systematic and cooperative programming. This commitment is pursuant to a no cost land lease agreement the Board of Regents for the Oklahoma Agricultural and Mechanical Colleges extended to Green Country Area Vocational Technical School and its Board subsequently accepted.

This **Memorandum of Understanding** guides and clarifies programming responsibilities between the two institutions. The belief is that upfront and open communications between program sponsors associated with the two institutions will alleviate potential problems, but if questions about responsibilities should arise then this document will serve as the guide to finalize decisions in question. In general it is assumed the program sponsors will amicably resolve any disputes which might arise, but if they can not the CEOs of the two institutions will make every effort to resolve any differences. In a case where the program sponsors and CEOs may not be able to come to a mutually acceptable agreement, the governing boards of the two institutions will make the final decision.

Finally, this **Memorandum of Understanding** will assure that both financial and non-financial resources available to each of the two institutions will be utilized in an efficient and effective fashion by not competing or unnecessarily duplicating programs and services. The resource providers, primarily taxpayers, can the two institutions in their effort to provide the needed services for the area's citizens.

Definition of Terms

Vocational education: Concerned with people who become members of the work force and produce the goods and provide the services required by society. Vocational education emphasizes the proficient development of manipulative skills and concentrates on entry-level job preparation.

Technical education: Concerned with people who become members of the work force and are responsible for facilitating the work efforts of those producing the goods and providing the services required by society. Technical education concentrates on critical thinking, problem solving and trouble shooting in the context of real life problem situations.

Credit classes: Learning experiences which are of sufficient quality and duration to be afforded academic recognition by virtue of the carnegie unit.

Non-credit classes: Learning experiences not meeting the structural requirements prescribed by the carnegie unit.

Customized classes: Classes cooperatively developed and offered between an educational institution and an employer or other sponsor to meet a specific need. Those classes defined as technical education may be recognized for college credit.

Adult/continuing education/business-industry linkages: Student learning experiences offered which usually meet a specific need and are typically not a part of a regular program of study. Such classes may be avocational, recreational, vocational and technical. Depending upon their structure and rigor such classes may be for college credit, but are often time recognized in terms of Continuing Education Units (CEUs).

Cooperative enrollment agreement: An agreement between an institution of higher education and an Oklahoma area vocational technical school (must comply with the policy of the Oklahoma State Regents for Higher Education) which allows adult students enrolled in area vocational schools, under special conditions, to earn college credit.

Self-supporting classes: Classes where all direct costs associated with the educational offerings must be paid for by the student or sponsor.

Institutional Missions

Oklahoma State University at Okmulgee: To serve as the lead institution of higher education in Oklahoma and the region for comprehensive, high-quality, advancing-technology programs and services to prepare and sustain a diverse student body as competitive members of a world class work force and contributing members of society.

Green Country Area Vocational Technical School: To provide training opportunities through vocational and technical education which prepare individuals for present and future jobs and to retrain and upgrade the skills of the persons employed or those seeking employment and to continuously work with business and

industry in providing training and assisting with economic development.

Programming Guidelines

While it is virtually impossible to clearly delineate every conceivable programming alternative, those which follow will serve as a guideline. In most cases programming will more appropriately fall to one institution because of the uniqueness of each organization's mission. Every attempt will be made to adhere to institution's mission when making programming decisions. When gray areas emerge and institutional mission and term definition do not clearly dictate institutional responsibility, cooperative negotiation will be utilized. The criteria enumerated below can, and most likely will be clarified and added to periodically by mutual agreement between the CEOs of the two institutions.

Adult/continuing education/business-industry linkages

1. OSU/Okmulgee will concentrate on credit classes consistent with its mission.

2. OSU/Okmulgee will concentrate on short-term customized non-credit technical classes for business and industry consistent with its mission.

3. Green Country Area Vocational Technical School will concentrate on non-credit vocational classes consistent with its mission.

4. Green Country Area Vocational Technical School will concentrate on short-term customized non-credit vocational classes for business and industry consistent with its mission.

5. Avocational/recreational classes offered by either institution must be self-supporting. Every attempt will be made not to duplicate these types of class offerings between the two institutions.

6. Representatives of adult/continuing education/business-industry linkages programs for each institution will meet on a monthly basis. The representatives plan and coordinate adult/continuing education/business-industry linkage efforts for Okmulgee County. Minutes will be taken at each meeting and the responsibility for the minutes will alternate between institutions on an annual basis.

7. Adult cooperative enrollment agreements, if needed, may be developed between Green Country Area Vocational Technical School and OSU/Okmulgee. Other higher education institutions may become involved if coordinated through OSU/Okmulgee.

<u>Full time programs (secondary and adult)</u>

8. Where feasible, full time programs will be cooperatively developed and implemented.

9. Each institution will have full time programs unique to its mission.

10. Where feasible facilities, equipment, faculty and other resources will be shared in an economically fair and legal fashion, and with the approval of the board of each institution.

Ancillary and support services

11. Where feasible the institutions will cooperate regarding the providing of ancillary and support services such as student assessment, learning resources, cooperative purchasing, student financial aid, telecommunications, professional staff development, motor pool, vending, food service, sponsorship of special events, etc.

(CEO, OSU/Okmulgee)	(CEO, Green Country Vo-Tech)
(Title)	(Title)
(Date)	(Date)

APPENDIX C

MEMORANDUM OF UNDERSTANDING

FOR MANUFACTURING TECHNOLOGY

BETWEEN

GREEN COUNTRY AREA VOCATIONAL TECHNICAL SCHOOL

AND

OKLAHOMA STATE UNIVERSITY-OKMULGEE

MEMORANDUM OF UNDERSTANDING
BETWEEN
GREEN COUNTRY AREA VOCATIONAL TECHNICAL SCHOOL
AND
OKLAHOMA STATE UNIVERSITY--OKMULGEE

STATEMENT OF UNDERSTANDING

The purpose of this memorandum of understanding is to form a partnership between Green Country Area Vocational Technical School and Oklahoma State University--Okmulgee in an effort to enroll secondary students in the Manufacturing Technology program at OSU--Okmulgee.

PARTICIPATING INSTITUTIONS AND STUDENTS

The primary institutions involved with this memorandum of understanding are Green Country Area vocational Technical School and Oklahoma State University--Okmulgee. Students participating will be eleventh and twelfth grade students enrolled in the vo-tech participating district. Participating schools are Beggs, Dewar, Henryetta, Morris, Okmulgee, Preston, Schulter, and Wilson.

PROGRAM

This memorandum of understanding will involve those courses designed for the Manufacturing Technology program.

Oklahoma State University--Okmulgee

_____
Provost

_____
Contact Person

_____
Title

Green Country Area Vo-Tech School

_____
Superintendent

_____
Contact Person

_____
Title

CONDITIONS OF UNDERSTANDING

OSU--OKMULGEE

1. Provide a competency based curriculum delivery in Manufacturing Technology which will include staff, facilities, and stationary equipment.
2. Students completing curriculum requirements will have the opportunity to transcript approved college credits after satisfactorily completing 12 hours of regular college enrollment. Students will have one year after graduation and must have enrolled for the Fall semester of the succeeding year to take advantage of this opportunity. The student must maintain a "B" average for each class in which he/she receives credit.
3. Instructors will be certified by the Oklahoma State Department of Education.
4. Provide resources available through library facilities and other staff expertise.
5. Provide credits in the following courses:

Year 1	MFG	1183	Introduction to Manufacturing
	ENGT	1103	Engineering Drawing
	ENGT	1113	Metrology
	MCH	1101	Fundamentals of Turning
	MCH	1193	Conventional Turning
	MCH	1201	Fundamentals of Milling
	MCH	1203	Conventional Milling
Year 2	MFG	2113	Quality Assurance
	MFG	2303	Applied Metallurgy
	MFG	2363	Non-Destructive Testing
	MCH	2513	Advanced Machining

Green Country Area Vocational Technical School

1. Counsel and enroll 11th and 12th grade students from area high schools.
2. Pay equivalent to one half of instructor salary.
3. Provide books, tools, and equipment for students.
4. Provide stationary equipment on a rotating basis as jointly approved.
5. Provide administrative and support services for staff and students.
6. Maintain records on students.
7. Administer discipline as required.

APPENDIX D

ARTICULATED CURRICULUM

FOR MANUFACTURING TECHNOLOGY

BETWEEN

GREEN COUNTRY AREA VOCATIONAL TECHNICAL SCHOOL

AND

OKLAHOMA STATE UNIVERSITY-OKMULGEE

1995-96 OSU-Okmulgee
Green Country Vo-Tech
Manufacturing Curriculum

YEAR 1 CURRICULUM

MFG	1183	Introduction to Mfg.
ENGT	1103	Engineering Drawing
ENGT	1113	Metrology
MCH	1101	Fund. of Turning
MCH	1193	Conventional Turning
MCH	1201	Fund. of Milling
MCH	1203	Conventional Milling

17 Total Credit Hours

Total Credit Hours at minimum GPA requirement (3.0) and recommendation of Instructor Required.

YEAR 2 CURRICULUM

MFG	2113	Quality Assurance
MFG	2303	Apld. Metalurgy
MFG	2363	Non-Desc. Testing
MCH	2513	Advanced Mach.

12 Total Credit Hours

Total Credit Hours at minimum GPA requirement (3.0) and recommendation of Instructor Required.

APPENDIX E

MEMORANDUM OF UNDERSTANDING

FOR DRAFTING

BETWEEN

GREEN COUNTRY AREA VOCATIONAL TECHNICAL SCHOOL

AND

OKLAHOMA STATE UNIVERSITY-OKMULGEE

MEMORANDUM OF UNDERSTANDING
BETWEEN
GREEN COUNTRY AREA VOCATIONAL TECHNICAL SCHOOL
AND
OKLAHOMA STATE UNIVERSITY--OKMULGEE

STATEMENT OF UNDERSTANDING

The purpose of this memorandum of understanding is to form a partnership between Green Country Area Vocational Technical School and Oklahoma State University--Okmulgee in an effort to enroll secondary students in the Engineering Graphics (Drafting) program at OSU--Okmulgee.

PARTICIPATING INSTITUTIONS AND STUDENTS

The primary institutions involved with this memorandum of understanding are Green Country Area Vocational Technical School and Oklahoma State University-Okmulgee. Students participating will be eleventh and twelfth grade students enrolled in the vo-tech participating district. Participating schools are Beggs, Dewar, Henryetta, Morris, Okmulgee, Preston, Schulter, and Wilson.

PROGRAM

This memorandum of understanding will involve those courses designed for the Engineering Graphics (Drafting) program.

Oklahoma State University-Okmulgee

_____
Provost

_____
Contact Person

_____
Title

Green Country Area Vo-Tech School

_____
Superintendent

_____
Contact Person

_____
Title

CONDITIONS OF UNDERSTANDING

OSU-OKMULGEE

1. Provide a competency based curriculum delivery in Engineering Graphics (Drafting) which will include staff, facilities, and stationary equipment.
2. Students completing curriculum requirements will have the opportunity to transcript approved college credits after satisfactorily completing 12 hour of regular college enrollment. Students will have one year after graduation and must have enrolled for the Fall semester of the succeeding year to take advantage of this opportunity. The student must maintain a "B" average for each class in which he/she receives college credit.
3. Instructors will be certified by the Oklahoma State Department of Education.
4. Provide resources available through library facilities and other staff expertise.
5. Provide credits in the following courses:

Year 1	ENGT	1103	Engineering Drawing
	ENGT	1113	Metrology
	ENGT	1123	CAD I
	ENGT	1373	Residential Design
Year 2	ENGT	1213	CAD II
	ENGT	2213	Machine Design
	ENGT	1233	Descriptive Geometry
	ENGT	2123	CAD Applications

Green Country Area Vocational School

1. Counsel and enroll 11th and 12th grade students from area high schools.
2. Pay equivalent to one half of the instructor's salary.
3. Provide books, tools, and equipment for students.
4. Provide stationary equipment on a rotating basis as jointly approved.
5. Provide administrative and support services for staff and students.
6. Maintain records on students.
7. Administer discipline as required.

APPENDIX F

ARTICULATED CURRICULUM

FOR DRAFTING

BETWEEN

GREEN COUNTRY AREA VOCATIONAL TECHNICAL SCHOOL

AND

OKLAHOMA STATE UNIVERSITY-OKMULGEE

1995-96 OSU-Okmulgee
Green Country Vo-Tech
Engineering Graphics Curriculum

YEAR 1 CURRICULUM

ENGT 1103 Engineering Drawing
ENGT 1113 Metrology
ENGT 1123 CAD I
ENGT 1373 Residential Design

12 Total Credit Hours

Total Credit Hours at minimum GPA requirement (3.0) and recommendation of Instructor Required.

YEAR 2 CURRICULUM

ENGT 1213 CAD II
ENGT 2213 Machine Design
ENGT 1233 Descriptive Geometry
ENGT 2123 CAD Applications

12 Total Credit Hours

Total Credit Hours at minimum GPA requirement (3.0) and recommendation of Instructor Required.

APPENDIX G

RAW DATA

Thesis_Data

StudentID	Gender	Program	Entry GPA	OSU-OKM GPA
1	F		3.84	4
2	F		2.215	2.5
3	F		1.88	3.75
4	F		2.385	3.5
5	F		2.98	2.5
6	F		2.69	3.25
7	F		3.621	4
8	M	DFT	2.744	4
9	M	MFG	1.04	2
10	M	MFG	3	2
11	M	MFG	2.22	3
12	M	MFG	2.62	3
13	M	DFT	2.179	3.5
14	M	MFG	2.217	3.5
15	M	MFG	3.4	4
16	M	DFT	2.17	2.5
17	M	MFG	1.963	3
18	M	DFT	2.24	2.5
19	M	MFG	1.435	2.5
20	M	MFG	2.786	4
21	M	MFG	2.58	2
22	M	MFG	3.173	3.25
23	M	MFG	2.28	3.5
24	M	DFT	2.639	4
25	M	DFT	2.429	3.334
26	M	MFG	2.977	3
27	M	DFT	3.83	4
28	M	MFG	2.42	4
29	M	MFG	1.92	3
30	M	DFT	2.393	4
31	M	DFT	2.15	3
32	M	MFG	1.25	2.5
33	M	DFT	3.652	4
34	M	MFG	1.96	3.75
35	M	MFG	2.03	4
36	M	DFT	3.64	4
37	M	MFG	2.28	3
38	M	DFT	1.92	4
39	M	DFT	2.42	4
40	M	DFT	2.308	3
41	M	MFG	2.21	3.25
42	M	DFT	2.342	2.5
43	M	MFG	3.34	3
44	M	MFG	3.14	4
45	M	DFT	1.86	3.5
46	M	MFG	2.207	3.25
47	M	MFG	3.09	2.75
48	M	MFG	2.654	3
49	M	MFG	2.79	2.5
50	M	MFG	2.4	2.5
51	M	MFG	1.59	2.25
52	M	MFG	2.86	2.25
53	M	DFT	2.643	3.5
54	M	MFG	3.358	4
55	M	DFT	2.84	3
56	M	DFT	2.292	3.75
57	M	DFT	3.42	4
58	M	MFG	2.75	3.5
59	M	MFG	2.3	3
60	M	MFG	2.95	4
61	M	MFG	3.862	3

APPENDIX H

APPLICATION FOR REVIEW OF HUMAN SUBJECTS RESEARCH

OKLAHOMA STATE UNIVERSITY INSTITUTIONAL REVIEW BOARD

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: March 3, 1998 **IRB #: ED-98-084**

Proposal Title: PREDICTING THE ACADEMIC PERFORMANCE OF STUDENTS IN ON-SITE ARTICULATED PROGRAMS AT OKLAHOMA STATE UNIVERSITY

Principal Investigator(s): James Gregson, Kathryn J. Shurden

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING, AS WELL AS ARE SUBJECT TO MONITORING AT ANY TIME DURING THE APPROVAL PERIOD.
APPROVAL STATUS PERIOD VALID FOR DATA COLLECTION FOR A ONE CALENDAR YEAR PERIOD 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 Disapproval are as follows:

Signature: _____ Date: March 4, 1998
Chair of Institutional Review Board
cc: Kathryn J. Shurden

VITA

Kathryn J. Shurden

Candidate for the Degree of

Master of Science

Thesis: PREDICTING THE ACADEMIC PERFORMANCE OF STUDENTS IN ON-SITE ARTICULATED PROGRAMS AT OKLAHOMA STATE UNIVERSITY, OKMULGEE

Major Field: Occupational and Adult Education

Biographical:

Personal Data: Born in Wichita Falls, Texas on June 5, 1960, the daughter of Leroy and Carol Orsburn; married to Frank Shurden; reside in Henryetta, Oklahoma.

Education: Graduated from Wewoka High School, Wewoka, Oklahoma in May 1978; received Bachelor of Arts degree in Management of Human Resources from Southern Nazarene University, Bethany, Oklahoma in May 1994. Completed the requirements for the Master of Science degree with a major in Occupational and Adult Education at Oklahoma State University in July 1998.

Experience: Broadcast Journalist 1975-1985; Health Care Marketing Representative 1985-1995; Adjunct Instructor for Defensive Driving, Medic First Aid, Medical Office Management, and Word Processing for the Oklahoma Safety Council, Wes Watkins Area Vocational Technical Center, Green Country Area Vocational Technical School, and Gordon Cooper Area Vocational Technical School 1977 to 1997; Grants and Former Students Coordinator at Oklahoma State University, Technical Branch, Okmulgee 1995 to 1997; Communications Faculty at Oklahoma State University, Technical Branch, Okmulgee 1997 to present.