


8-2010

Characteristics of Local Dual Credit Programs That Promote Sustained Enrollment and High School Achievement

Karl William Olive

Western Kentucky University, karl.olive@wku.edu

Follow this and additional works at: <http://digitalcommons.wku.edu/theses>

 Part of the [Educational Administration and Supervision Commons](#), and the [Educational Assessment, Evaluation, and Research Commons](#)

Recommended Citation

Olive, Karl William, "Characteristics of Local Dual Credit Programs That Promote Sustained Enrollment and High School Achievement" (2010). *Masters Theses & Specialist Projects*. Paper 189.
<http://digitalcommons.wku.edu/theses/189>

This Thesis is brought to you for free and open access by TopSCHOLAR®. It has been accepted for inclusion in Masters Theses & Specialist Projects by an authorized administrator of TopSCHOLAR®. For more information, please contact topscholar@wku.edu.

CHARACTERISTICS OF LOCAL DUAL CREDIT PROGRAMS THAT PROMOTE
SUSTAINED ENROLLMENT AND HIGH STUDENT ACHIEVEMENT

A Specialist Project
Presented to
The Faculty of the Department of Educational Administration, Leadership & Research
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
Of the Requirements for the Degree
Education Specialist

By
Karl William Olive

August 2010

CHARACTERISTICS OF LOCAL DUAL CREDIT PROGRAMS THAT PROMOTE
SUSTAINED ENROLLMENT AND HIGH STUDENT ACHIEVEMENT

Date Recommended July 29, 2010

Sharon Spall
Director of Thesis

Bud Schlinker

Ric Keaster

Dean, Graduate Studies and Research Date

TABLE OF CONTENTS

	Page
Abstract	vi
Introduction	3
<i>Research Problem</i>	3
<i>Research Purpose</i>	4
<i>Research Question</i>	4
<i>Significance of the Study</i>	5
<i>Limitations</i>	5
<i>Definition of Terms</i>	6
Literature Review	10
<i>Introduction</i>	10
<i>Barriers to Secondary Students</i>	13
<i>Senior Slump</i>	13
<i>Underrepresented and Underprepared Students</i>	15
<i>Cost Deterrents</i>	17
<i>Articulation</i>	19
<i>General Barriers</i>	20
<i>General Benefits</i>	21
<i>Articulated Options to Dual Credit/Dual Enrollment</i>	23
<i>Advanced Placement</i>	23
<i>International Baccalaureate</i>	25
<i>Tech Prep and Middle College</i>	27

<i>Career Academies</i>	30
<i>Dual Credit/Concurrent Enrollment</i>	32
<i>History</i>	33
<i>Barriers</i>	37
<i>Benefits</i>	41
<i>Dual Credit in Kentucky</i>	49
<i>Summary</i>	54
Methodology	57
<i>Introduction</i>	57
<i>Role of the Researcher</i>	57
<i>Setting</i>	59
<i>Data Sources</i>	60
<i>Interview</i>	61
<i>Documents</i>	64
<i>Data Analysis</i>	65
<i>Trustworthiness</i>	67
<i>Triangulation</i>	68
<i>Peer Debriefing</i>	68
<i>Member Checking</i>	69
<i>Reflexive Journal</i>	69
<i>Rich, Thick Description</i>	70
<i>Audit Trail</i>	70
Findings	72

<i>Introduction</i>	72
<i>Research Problem</i>	72
<i>Research Purpose</i>	73
<i>Research Question</i>	74
<i>Program Descriptions</i>	74
<i>Postsecondary</i>	74
<i>Secondary #1</i>	76
<i>Secondary #2</i>	77
<i>High Achievement</i>	78
<i>Admissions Criteria</i>	78
<i>Academic Rigor</i>	80
<i>SACS Requirements</i>	80
<i>Interview</i>	80
<i>Course Competencies and Student Learning Outcomes</i>	81
<i>Instructor Traits</i>	81
<i>Sustained Enrollment</i>	83
<i>Admissions Criteria</i>	83
<i>Instructor Traits</i>	84
<i>Time and Money Savings</i>	85
<i>Program Promotion</i>	86
<i>Program Strengths</i>	86
<i>Collaboration</i>	87
<i>Student Development</i>	88

<i>Accessibility</i>	89
<i>Miscellaneous</i>	91
<i>Program Barriers</i>	91
<i>Organizational Hierarchy</i>	91
<i>Communication</i>	92
<i>Logistics</i>	93
<i>Qualified Instructors</i>	95
<i>Tuition Costs</i>	96
<i>Remediation</i>	97
<i>Competition/Other Options</i>	97
<i>Recommendations</i>	98
<i>One Person in Charge</i>	98
<i>Improve Communication and Program Promotion</i>	99
<i>Expand Dual Credit Opportunities</i>	101
<i>Underserved Populations and Remediation</i>	102
<i>Grow SEEK</i>	104
<i>Discussion and Implications</i>	106
<i>Discussion</i>	106
<i>Implications</i>	112
<i>Relation of Findings to Relevant Literature</i>	113
<i>Barriers to Postsecondary Enrollment</i>	114
<i>Dual Credit Barriers</i>	115
<i>Dual Credit Benefits</i>	117

<i>Personal Reflections upon Contributions to Professional Practice</i>	118
<i>To Professional Growth</i>	118
<i>To Research Understanding</i>	119
<i>Topics for Further Investigation</i>	120
<i>Summary</i>	120
References	122

CHARACTERISTICS OF LOCAL DUAL CREDIT PROGRAMS THAT PROMOTE
SUSTAINED ENROLLMENT AND HIGH STUDENT ACHIEVEMENT

Karl William Olive	August 2010	Pages
Directed by: Sharon Spall, Bud Schlinker, Ric Keaster		136
Department of Educational Administration		Western Kentucky University

The intent of this study was to identify the features of local dual credit programs that promote high achievement and sustained enrollment. Ancillary outcomes of the study were to identify strengths and weaknesses of the programs as well as develop recommendations for the development and implementation of future dual credit programs in the area. The dual credit programs studied were offered by two secondary schools in conjunction with the local community and technical college. Information regarding the programs was collected via interviews from individuals at the secondary and postsecondary level who had substantial knowledge of the programs.

Overriding themes that emerged as a result of this study were the need to designate a single dual credit coordinator at both the college and the high schools to improve communication, the desire to increase participation in the existing programs while expanding the program to area schools that do not already participate in dual credit, and the need to maintain the quality and academic rigor of the courses.

Introduction

Dual credit courses enable high school students to acquire college credit while still enrolled in secondary school. These programs aim to provide a smooth transition between secondary and postsecondary education and are credited with rendering a rigorous curriculum to high school juniors and seniors that Adelman (1999) suggests is the best predictor of future degree attainment.

Research also indicates that there is a strong correlation between education and wage earning ability (Southern Regional Education Board [SREB], 2009).

Unfortunately, per capita income in Kentucky is only 82.1% of the national average, and bachelor degree attainment rates in Kentucky lag far behind most other states (Kentucky Chamber of Commerce, Task Force on Postsecondary Education, 2007). In an effort to improve the standard of living and quality of life of residents in Kentucky, policymakers and educational leaders have increasingly turned to dual credit education as a means of improving the transition from high school to college and increasing postsecondary retention and graduation rates.

Research Problem

In an effort to increase the number of students pursuing postsecondary education and thereby improve the quality of life for Kentuckians, the Kentucky Council on Postsecondary Education (KCPE) abolished the restrictive participation criteria it had established for dual enrollment programs in the state and granted the local school districts and postsecondary institutions the opportunity to develop their own articulation agreements regarding dual enrollment. While this policy change in 2000 by the KCPE has resulted in a marked increase in the number of students participating in dual credit

courses, a multi-year study conducted by the KCPE indicates dual credit programs did not substantially increase matriculation or retention rates (KCPE, 2006a).

Locally, wide variations exist in the dual credit programs that postsecondary institutions have developed with local school systems. For example, the Elizabethtown Community & Technical College (ECTC) alone had 3 different memoranda of agreement for dual credit with local school districts during the 2007-2008 school year. These agreements differed with regard to admission processes for students, costs associated for dual credit courses, and even measures of academic progress (ECTC, 2009).

While these variations may suit the individual needs of the local districts, the lack of regulation and uniformity of dual credit programs raises serious concerns about the quality, access, and funding of these programs and calls into question whether or not locally designed dual enrollment programs can adequately prepare students to successfully transition to postsecondary education.

Research Purpose

In an effort to improve future local dual credit programs, research was conducted to identify the aspects of current area dual credit programs that promote student participation and improve student achievement.

Research Question

In examining area dual credit programs, this research project addressed the following research questions from the perspective of secondary and postsecondary program managers and dual credit instructors who have participated in the local dual credit programs.

1. What are the features of the dual credit programs operated by the local community and technical college in conjunction with area school districts that support sustained enrollment and high achievement for students?
 - a. What are the strengths of the local dual credit programs?
 - b. What are the barriers that have been encountered in the dual credit programs?
 - c. What are the recommendations for the development and implementation of future dual credit programs in the area?

Significance of the Study

Kirst (2001) identifies disjunctions between secondary schools and postsecondary institutions as a major reason why seniors are not adequately prepared for the rigors of college level coursework. Examination of local dual credit programs provides valuable insight to educators who seek to strengthen the bonds between secondary and postsecondary education.

By identifying the particular strengths among the area dual credit programs, a model for future dual enrollment programs can be developed that will enable local districts and postsecondary institutions to serve the needs of students better by increasing student participation and achievement. By creating superior dual credit programs, area secondary and postsecondary schools should expect to increase matriculation and persistence rates.

Limitations

Given the relatively narrow focus of this project on the dual enrollment programs of a single community college with two local secondary schools, the intent of this study

was to provide relevant information to those who might be directly involved in the study or to those who might benefit from creating a dual enrollment program with the community college. Any extrapolation to another context is completely dependent upon the similarities between the two contexts.

Definition of Terms

The terms used within this study are defined as follows:

Academic courses: Courses recognized for credit toward fulfillment of the graduation requirements for a college bachelor's degree (Calhoun & Finch, 1976).

Accelerated learning programs: Educational programs that allow high school students, usually juniors or seniors, to take college courses for credit while still in high school (Shaughnessy, 2009).

Advanced Placement (AP): A national accelerated learning program typically offered to seniors by a secondary school teacher who has received special training to teach the course. In order to receive college credit for AP courses, students must take an end of course exam that is administered by the College Board, a private firm that owns the Advanced Placement program. Acceptable scores for the granting of credit vary based upon state legislation and postsecondary policies (Western Interstate Commission for Higher Education [WICHE], 2006).

Articulation: Methods for granting or waiving of college credit for competencies and/or skills obtained outside of the traditional college classroom to ease the transition from secondary to postsecondary education. Examples of articulation might include but are not limited to dual credit course, concurrent enrollment, AP, International Baccalaureate (IB), Tech Prep, and Middle College (Lyon, Longnion, & Cougot, 1997).

Career academy: Small learning communities where students meet with the same teachers over a 2- to 4- year period. Career academies offer a college preparatory curriculum geared toward a specific career such as business and finance. Career academies develop partnerships with area employers to expose students to the real-life application of learned material via mentoring, service learning, and career internships (Stern, Dayton, Raby, Lenz, & Tidyman, 2000).

Career and technical education (CTE): CTE instruction aims to develop foundational skills, core workplace competencies, and specific skill sets in various occupational areas. Internships, practica, cooperative education, school-based enterprises, dual enrollment programs, and apprenticeships are a few of the modes of delivery by which career and technical education provide meaningful opportunities for learners to apply their academic and technical skills (Scott & Sarkees-Wircenski, 2004).

Concurrent enrollment, dual credit, and dual enrollment: For purposes of simplicity and clarity of understanding, the standard definition of dual and concurrent enrollment as adopted by the Education Commission of the States will be utilized to refer to all dual credit, dual enrollment, and concurrent enrollment programs throughout this project. According to the Education Commission of the States (ECS) (2001), “Dual or concurrent enrollment is defined as a high school student enrolled in a postsecondary institution while still in high school” (p. 4). This all-encompassing definition includes postsecondary courses taught to high school students in both the secondary setting and the postsecondary setting, as well as online through distance learning or virtual schools. In addition, dual credit courses taught as a portion of a Tech Prep program or CTE program also fall under this definition. IB courses AP courses and are not included under

this definition as students in IB and AP programs earn college credit based upon examinations versus satisfactory course completion (ECS, 2001).

Distance learning: A formal educational process whereby the majority of the instruction in a course occurs when students and instructors are isolated from one another by distance and possibly time. Instruction may be synchronous or asynchronous.

Distance education courses utilize various methods for the transmission of information such as the Internet, closed-circuit television, fiber optics, satellite links, or wireless communication devices (Southern Association of Colleges and Schools, Commission on Colleges, 2009).

High achievement: For purposes of the current project, high achievement will be defined as the completion of a dual credit course with an A or B average.

International Baccalaureate (IB): An accelerated learning program where high school juniors and seniors take a standardized rigorous curriculum. At the conclusion of each course, a test is administered by the International Baccalaureate Organization (IBO) and scored on a scale from 1 to 7. Most universities recognize a score of 4 or above for college credit; however, the granting of credit varies based upon state legislation and postsecondary policies (WICHE, 2006).

Kentucky Council on Postsecondary Education: The state agency in the Commonwealth of Kentucky with statutory responsibility to set and coordinate state policy for higher education (KCPE, 2009).

Non-academic courses: Courses that count for college credit but do not count toward the graduation requirements of a college bachelor's degree (Shaughnessy, 2009).

Sustained enrollment: For purposes of the current project, sustained enrollment will be defined as dual credit courses that have demonstrated a steady or improving rate of participation over the last 3 to 4 years.

Tech Prep/Middle College: Tech Prep was created as a result of the passage of the Tech Prep Education Act, Title II of the Carl D. Perkins Vocational and Technical Education Act of 1984. Although the program is federally funded, states allocate resources to local programs that provide the education and training required to meet the needs of the local workforce. Tech Prep was developed in order to provide students with the academic and technical skills required for successful employment in a highly skilled workforce. A sequential program of study attempts to provide students with a seamless transition into postsecondary education and employment through academic courses and technical training. The majority of Tech Prep programs lead to either an associate's degree or a postsecondary certification in a technical field (Bragg, Kirby, & Zhu, 2006). As an offshoot of Tech Prep, Middle College High Schools developed on college campuses in order to assist at-risk students to complete high school and earn college credit. Students in the program are provided a wide range of counseling and advising services in addition to receiving individualized attention and small group instruction (What Works Clearinghouse, 2009).

Virtual school: A method of instructional delivery that takes place through online means. According to the counselor at Fort Knox High School, virtual schools are typically accredited institutions that teach a course of instruction designed to lead to a diploma or degree (S. Curley, personal communication, October 13, 2009).

Literature Review

Introduction

The National Center for Public Policy and Higher Education (2008) conducted a statistical analysis of data provided by the American Community Survey (ACS) to create report cards for higher education at both the state and national level. Analysis of these data revealed a high degree of correlation between national trends and trends in Kentucky. The national on-time graduation rate for high school students has decreased over the last 20 years to just 77.5%. The percentage of 18- to 24-year-olds enrolled for college has only increased modestly over the last 10 years to just 34%. In addition, college completion/retention rates have also shown only a modest increase to 18%. Currently, a high school freshman has only a 42% chance of enrolling in college by the age of 19.

A report by the Kentucky Chamber of Commerce, Task Force on Postsecondary Education (2007) regarding education in Kentucky echoed many of the trends found in the preceding national study and revealed that Kentucky lags far behind other states in terms of bachelor degree attainment. The task force, utilizing statistics from ACS, found that only 65% of ninth graders in Kentucky will graduate from high school, and only 12% will graduate from college within 6 years. As of 2004, Kentucky ranked 24th out of 50 states with 21.5 associate degrees awarded within 3 years per 100 high school graduates. Unfortunately, Kentucky was 41st out of 50 states with only 42.3 bachelor degrees awarded within 6 years per 100 students. As of 2005, 21.1% of Kentuckians between the ages of 25-64 held a bachelor's degree, compared to the national average of 29.2%. According to data collected from the National Center for Education Statistics by the

SREB (2009), the average adult in the United States with a bachelor's degree in 2007 earned \$59,400 versus \$41,400 for a person with an associate's degree or \$33,600 for a person with a high school diploma or GED. Per capita income in Kentucky in 2005 was determined to be only 82.1% of the national average (Kentucky Chamber of Commerce, Task Force on Postsecondary Education, 2007).

In addition to the economic advantage of postsecondary education, Watts (2001) identifies several other benefits of higher education related to quality of life issues such as improved health and civic involvement, as well as benefits to the Commonwealth of Kentucky from increased tax revenues and decreased public program participation and criminal involvement. Utilizing multivariate probit models and regression models on surveys, Watts determined that the total lifetime social benefits of each Kentuckian with a bachelor's degree or more in 2000 versus a high school diploma amounted to \$126,126 for a man and \$96,823 for a woman.

In an effort to improve the quality of life and standard of living of the residents of the Commonwealth to a level greater than that of the national average by 2020, the Kentucky General Assembly passed the Postsecondary Education Improvement Act of 1997 in a special session of the Assembly. Major thrusts of the legislation as they relate to the scope of this project aim at providing a seamless and adequately funded system of postsecondary education, creating an integrated community and technical college system, and delineating the duties for the KCPE in order to achieve the 2020 goal (KCPE, 2009; Kentucky Postsecondary Education Act of 1997, 1997). In order to improve postsecondary enrollment, persistence, and degree completion, the KCPE and the Kentucky Board of Education created the Kentucky P-16 Council. Major goals of the P-

16 Council include the alignment of secondary and postsecondary competency standards as well as the elimination of barriers that would impede student efforts toward degree completion (Kentucky P-16 Council, 2009). Based upon 2005 projections by the Kentucky P-16 Council, Kentucky will fall short of the 2020 goal of 791,000 residents with bachelor's degrees by 211,000 (Kentucky P-16 Council, 2005).

In order to meet the needs of the students in Kentucky, policy makers and educational leaders have begun to investigate a wide range of options aimed at improving the transition from high school to college and increasing college retention rates, thereby improving the standard of living and quality of life for Kentuckians. One such effort was the Kentucky Education Forum sponsored by the League for Innovation in the Community College and the SREB. The goals of the meeting were to decrease postsecondary remediation, increase postsecondary enrollment and persistence, increase achievement at both the secondary and postsecondary levels, increase postsecondary completion rates, and improve employment prospects for Kentuckians. The efforts of Kentucky to improve postsecondary access via AP, dual credit, and Kentucky Virtual School were commended. Some of the recommendations coming from this meeting that relate to the scope of the current project and address many of the barriers that face secondary students in Kentucky included the implementation of a rigorous college-preparatory curriculum in high school, the preparation of seniors for transition into college, the utilization of community and technical colleges to develop study pathways for secondary students, the establishment of standards for dual credit within the state, the development of opportunities for students to earn industry certifications while in dual credit programs, the dissemination of information to parents and students about the rigors

and benefits of a college education, and the improvement of high school graduation rates (SREB, 2005).

Barriers to Secondary Students

According to Kirst (2001), 70% of high school students move directly into some form of postsecondary education. Despite that high percentage, only 18% of high school students will complete their degree within a 6-year time span (National Center for Public Policy and Higher Education, 2008). In essence, over half of all high school seniors who enroll directly into a 4-year college fail to earn a degree within the first 6 years after graduating and an even higher percentage leave community colleges without a degree or certificate (National Commission of the High School Senior Year, 2001a). Based upon the final report of the National Commission of the High School Senior Year (2001b), students in the 21st century will need at least 2 years of postsecondary education in order to make ends meet.

In examining the relevant research related to improving postsecondary enrollment and persistence, three overriding themes that emerge are to improve academic rigor and relevance in the senior year of high school thereby avoiding the senior slump, to increase enrollment and retention of underrepresented and underachieving students, and to decrease the costs associated with postsecondary education. With regard to the Commonwealth of Kentucky, specific recommendations for meeting these needs were addressed at the Kentucky Education Forum in 2005 (SREB, 2005).

Senior Slump

According to a linear regression study of test scores, surveys, and college and high school transcripts of a national cohort of 10th grade students from 1980 until 1993,

Adelman (1999) examined the bachelor's degree achievement rates of the cohort and found that the single greatest predictor of a student's academic persistence and degree completion was dependent upon the academic rigor of the student's secondary education. Despite the implications of Adelman's findings, Kirst (2001), in a report prepared for the National Commission on the High School Senior Year, identified several disjunctions between secondary schools and postsecondary institutions that result in a failure to prepare seniors adequately for the rigors of college level coursework. Kirst found a lack of coherence and sequencing between secondary and postsecondary institutions with regard to curriculums and assessments that would adequately prepare and place students. In addition, Kirst stated that the emphasis by high school counselors, college recruiters, parents, and students in secondary schools is on college admissions rather than academic preparation required for postsecondary education. Given the emphasis on admissions, Kirst asserted that seniors do not have any incentives to take academically challenging courses because most colleges require completion of the admissions process prior to the completion of their senior year.

The results of two mix-method reports released by the National Commission on the High School Senior Year support the observations of both Adelman and Kirst. According to the *Preliminary Report* (2001a), one-third to one-half of high school seniors are under-educated or mis-educated for either work or college, and the senior year represents a lost opportunity for many students to catch up. Results of the *Final Report* (2001b) indicate that in 1997 only 43% of seniors reported themselves to be in academically challenging programs while 57% were enrolled in either general or vocational education programs.

In an effort to counteract the effects of the senior slump, Kirst (2001) makes a number of recommendations aimed at reclaiming the senior year. Some of his suggestions are that high schools should align their senior year courses with the general education college level courses, should stress the importance of placement exams, and should expand dual-enrollment courses to all seniors so that they may take college-level courses. In addition, Kirst believes that statewide secondary assessments and college placement exams should be aligned, college admissions policies should be revamped, and states should create P-16 policies to monitor student progress and align curriculums from preschool through college.

Similarly, the *Final Report* from the National Commission on the High School Senior Year (2001b) recommends upgrading the number of academic courses required for graduation as well as mandating academically challenging coursework during the senior year, instituting a P-16 alignment of curriculum, raising achievement so that a college preparatory curriculum is the default for everyone, and providing more rigorous alternatives such as Advanced Placement, dual enrollment, and work studies in addition to the regular curriculum.

Underrepresented and Underprepared Students

According to the *Preliminary Report* of the National Commission on the High School Senior Year (2001a), white children will make up less than 50% of the school-age population by the year 2040. Furthermore, the report verifies that graduation rates for minority students and low-income students lag far behind the graduation rates for white middle- and upper-income students. In addition, many of the students who do enroll for college are completely unprepared; and therefore, require remedial courses to catch up.

The National Commission estimates the costs of remediation by colleges to be between \$260 million to \$1 billion annually.

As previously stated, Adelman (1999) determined that the single greatest predictor of a student's academic persistence and degree completion was dependent upon the academic rigor of the student's secondary education. In the same study, Adelman concluded that a rigorous high school curriculum was a better predictor of academic persistence and degree completion for African American and Hispanic students than any other pre-college indicator.

In investigating the attitudes and experiences of low-income students who decide to attend college versus those who do not, King (1996) conducted a survey of 900 seniors, 300 of whom reported family incomes below \$20,000 annually. King concluded that a rigorous high school curriculum for all students coupled with access to college counseling were instrumental factors in the low-income student's decision to attend college. Results of the demographic information on the surveys revealed a high degree of correlation between the low-income students and minorities. Over 60% of the students who identified themselves as low-income were also minorities; conversely, nearly 70% of all respondents who identified themselves as middle- or upper-income were white.

While studying underprepared students, Adelman (1999) determined that only 39% of college students who required remedial reading courses earned bachelor's degrees versus a 69% graduation rate for students who did not require any form of remediation. Adelman's findings would appear to be substantiated by the analysis of data submitted by postsecondary institutions to the KCPE (2006b) in order to examine the effects of Kentucky's 2001 Mandatory Placement Policy on underprepared students.

According to the data, 38.8% of underprepared students in 2002 in Kentucky dropped out of college altogether after their first year versus 19.5% for adequately prepared students. Analysis of the data also indicated a high degree of correlation between minority students and lack of preparation for college level work. Of the students enrolling in 4-year institutions in Kentucky in 2002, 77.5% of African American students required some form of remediation versus 50.2% of white students.

Cost Deterrents

The final major barrier to secondary students enrolling and persisting in postsecondary education as identified by the research is the cost associated with tuition and other ancillary expenses. According to a statistical analysis of data provided by the ACS, the National Center for Public Policy and Higher Education (2008) determined that the costs of college tuition in the United States increased 439% from 1982 to 2006. By comparison, median family income during the same period increased 147% and the consumer price index increased only 106%. In essence, college tuition in 2006 was three times more expensive than it was relative to median family income in 1982.

In comparing median family incomes versus the figures for 4-year public college expenses for the 2007-2008 school year, the National Center for Public Policy and Higher Education (2008) found that average college costs minus financial aid were equal to 55% of the median income of families in the lowest quintile. Even in the middle-income quintile, college costs minus financial aid accounted for 25% of family income. Costs for 2-year colleges were not much better. Annual expenses for 2-year colleges were equivalent to 49% of the family income in the bottom quintile and 20% of the family income of the middle quintile.

Utilizing statistics from the National Center for Education Statistics, Ingles and Dalton (2008) found that the rising cost of college tuition was an important aspect in determining postsecondary aspirations. In 2004, 33% of male students and 38% of female students identified expenses as a very important factor in decisions regarding postsecondary options. Also, as a result of the rapid growth of tuition relative to family income, student borrowing has also increased dramatically. According to the National Center for Public Policy and Higher Education (2008), the number of students receiving federal Stafford loans has increased roughly 50% from the 1997-1998 school year to the 2006-2007 school year while amount of the loans has more than doubled from \$41 billion to \$85 billion.

Issues related to tuition and financial aid were examined in a mixed methods study regarding postsecondary affordability in Kentucky (JBL Associates, Inc., & Educational Policy Institute, 2005). Although the study, utilizing surveys of high school seniors and an analysis of financial aid and tuition costs, revealed that higher education in Kentucky was reasonably affordable, students surveyed for the study confirmed the findings of Ingles and Dalton (2008) by indicating that finances played a major role in their postsecondary educational choices. In addition, gaps in relative affordability were identified for African American, independent, and part-time students versus other segments of the population. Subsequently, research also indicated that sharp increases in tuition rates or decreases in financial aid once a student was enrolled in a postsecondary institution would negatively impact student persistence rates.

Unfortunately, the correlation between tuition and persistence was confirmed when a briefing report by the Commonwealth of Kentucky Auditor of Public Accounts

(APA) (2007) indicated that tuition increases were having a negative impact on undergraduate enrollment at both 2- and 4-year colleges in Kentucky. Utilizing enrollment and tuition information for postsecondary institutions from 1998-2007, the APA determined that the full time tuition rates at the Commonwealth's eight universities increased by an average of 66% from the 2002-2003 school year to the 2006-2007 school year. During that time, the total full-time enrollment for 2- and 4-year colleges in Kentucky has decreased by 900 students. According to the APA, tuition increases have hindered the ability of Kentuckians to afford postsecondary education.

Figures presented by the SREB (2009) would appear to substantiate the assertions of the APA. From 1998-2008 tuition at 4-year institutions increased 109% in Kentucky versus 74% in SREB states and 48% nationally. A comparison of tuition costs for 2-year institutions shows an even greater discrepancy. From 1998-2008, tuition at 2-year institutions increased 142% in Kentucky versus 45% in SREB states and 28% nationally. In 2008, Kentucky had a higher average tuition cost for 2-year institutions than any other SREB state. In addition, average costs associated with 2-year colleges in Kentucky were 45% higher than the national average. As of 2008, the average cost of tuition in Kentucky exceeded the national average by approximately \$300 annually for a 4-year institutions and \$1,100 annually for 2-year colleges (SREB, 2009); yet per capita income in Kentucky in 2005 was determined to be only 82.1% of the national average (Kentucky Chamber of Commerce, Task Force on Postsecondary Education, 2007).

Articulation

Articulation is often used as a means to combat the major barriers to secondary student enrollment and persistence. It is defined by the Kentucky Department of

Education (KDE) (2007) as a process to ensure that both secondary and postsecondary institutions work in tandem to promote a smooth transition to postsecondary education without delays, academic redundancy, or loss of credit. According to Reese (2002), articulated programs create a pathway of learning that eases student transition from secondary to postsecondary education. Lyon et al. (1997) identify articulation as an overarching term that can encompass a variety of programs including but not limited to the following: AP, business or professional certifications, credit by exam, credit for work experience, Tech Prep, and dual credit.

General Barriers

Although many of the limitations to articulation that exist are specific to particular programs such as AP or Tech Prep, some broad barriers cut across most if not all articulated programs. Given that many programs and states do not have set standards for curriculum and instruction of articulated programs, Boswell (2001) identifies the quality of the programs being offered in the high schools and the qualifications of secondary educators to teach postsecondary level courses as major concerns. In addition, Boswell cited the transferability of credit both to postsecondary institutions and from one institution to another as a major problem with articulation.

Although Kentucky, in accordance with guidelines set forth by the Southern Association of Colleges and Schools (SACS), does require that high school educators who teach college level courses should have at least 18 graduate hours in the teaching field and have a master's degree, few statewide policies exist regarding the admission of students into articulated programs or the common criteria required in order to earn credit for articulated programs. In addition, postsecondary institutions are free to develop

individual articulated programs with local school systems (SREB, 2005). As a case in point, ECTC had three different memoranda of agreement for dual credit with local secondary schools during the 2007-2008 school year. These agreements varied with regard to admission processes, costs associated for dual credit courses, and measures of academic progress (ECTC, 2009).

General Benefits

Lyon et al. (1997), as well as a report by Boswell (2001), identify numerous benefits derived from articulation. First and foremost, articulation saves students time and money. By eliminating academic redundancy between secondary and postsecondary institutions, students are able to take fewer postsecondary courses in college (Boswell, 2001). Articulation decreases the amount of time and money students need to stay in college and thereby increases persistence rates. Given that research by JBL Associates, Inc. and the Educational Policy Institute (2005) indicated that sharp increases in tuition rates once a student was enrolled in a postsecondary institution would negatively impact student persistence rates, and given that tuition rates for Kentucky colleges have increased at a rate far outpacing the national average from 1998-2008 (SREB, 2009), the need for articulation in Kentucky becomes apparent. In addition, articulated options are often less expensive than traditional college courses. For example, tuition for courses taken through the Dual Credit Program at Western Kentucky University (2009) currently costs \$200 versus \$867 in tuition for regular undergraduate courses. In addition, many states pay or reimburse the costs associated with articulation such as AP or IB exams (Kaye, 2006).

Other benefits of articulation as identified by Boswell (2001) include greater academic challenges to secondary students, improved communication and collaboration between secondary and postsecondary institutions, improved student aspiration to attend college, and a decreased need for remediation at the postsecondary level. As previously stated, Adelman (1999) found that the single greatest predictor of persistence and degree completion was dependent upon the academic rigor of the student's secondary education. Therefore, according to Adelman's findings, articulation should improve persistence by increasing the academic rigor in high schools. Boswell's findings regarding the postsecondary aspirations of students also appear to be aligned closely with King (1996) who concluded that access to college counseling coupled with a rigorous high school curriculum for all students were instrumental factors in a low-income student's aspirations to attend college. Finally, given that Adelman (1999) and the KCPE (2006b) found that students who required postsecondary remediation were much more likely to drop out than the general postsecondary population, a decrease in the need for college remediation as a result of articulation should result in a decrease in the postsecondary dropout rate. Thus, by removing many of the barriers to postsecondary enrollment and persistence, articulation should result in an increase in degree attainment and subsequent improvement in the quality of life.

Kentucky lawmakers believe so strongly in articulation as a means of improving degree attainment and resulting improved the standard of living and quality of life for Kentuckians that they have enacted legislation mandating the implementation of these programs into all Kentucky schools. KRS 160.348 (2002) required every secondary

school to offer a curriculum with AP, IB, dual enrollment, or dual credit courses through on-site or online means by 2003-2004.

Articulated Options to Dual Credit/Dual Enrollment

As previously stated, articulation is an umbrella term that applies to many programs that attempt to ensure that both secondary and postsecondary institutions work in tandem to promote a smooth transition to postsecondary education without delays, academic redundancy, or loss of credit (KDE, 2007). For the purposes of this project, only those methods of articulation that are currently utilized in Kentucky will be examined. Current articulated options to dual credit/dual enrollment include AP, IB, Tech Prep, and career and technical education.

Advanced Placement

The College Board first offered AP exams in 1956 after assuming responsibility for developing and administering a series of unnamed placement tests that were given by 12 universities to roughly 2,000 high school seniors and college freshmen. Exams were scored as they are now by utilizing a comparative analysis of exam results to a previously scored sample group. According to Hertberg-Davis, Callahan, and Kyburg (2006), AP courses and examinations were initially designed for the top 5% of high school seniors. In examining the benefits of AP courses, Adelman (1999) identified AP courses as a strong predictor of bachelor degree attainment. According to a study conducted by Andrews (2003) for the SREB regarding the progress of AP in SREB states, the AP program attempts to eliminate academic redundancy between secondary and postsecondary institutions and provides students with the opportunity to take advanced courses earlier in their educational careers.

Since the initial AP exams offered in 1956, the implementation of AP programs as a means of articulation has grown dramatically in schools across the country (College Board, 2009). In 2007, roughly 25% of the 2.8 million high school seniors in the United States took an AP exam in 1 of 37 different areas with approximately 61% achieving a score of 3 or better on the end of course exam that would enable them to earn college credit or exemption from coursework based upon postsecondary institutional policies regarding AP acceptance (College Board, 2008). The rapid growth of the AP Program can be attributed to efforts aimed at increasing participation of all students in AP courses and the influence or research such as Adelman's (1999) on policymakers. The SREB suggests that states should consider making AP courses available to all students in every school (Kaye, 2006). Even the College Board in its Equity Policy Statement affirms that all students who are willing to accept the demands of a rigorous college level curriculum should be considered for placement in AP courses (College Board, 2002).

Unfortunately, the increase in numbers of students taking AP courses has not resulted in a corresponding increase in the number of students scoring a 3 or higher on the AP exam. According to Andrews (2003), the passing rates on AP exams tend to decrease as more students take AP courses. For example, Kaye (2006) in an analysis of data for the SREB regarding AP programs found that the percentage of Kentucky students taking 1 or more AP exams increased from 11% to 17% from 2000 to 2005. Unfortunately, the passing rate during the same period decreased from 55% to 47%. A similar trend is evident nationally with passing rates decreasing from 63% in 2000 to 61% in 2005. Given that AP courses and examinations were initially designed for the top 5% of high school seniors (Hertberg-Davis et al., 2006), then it stands to reason that an

increase in the number of students taking AP courses would result in a relative decrease in the percentage of students scoring a 3 or better on the AP exam.

Additionally, gaps exist between minority participation and achievement rates in the AP program. For example, African American students represented 14% of the national class of 2007, yet only 3.3% of African American students from that cohort scored a 3 or higher on the AP exam (College Board, 2008). Utilizing statistics from the College Board, Hertberg-Davis et al. (2006) determined that the percentage of African American students scoring a 3 or better on the AP exams actually decreased from 39% to 32% from 1997 to 2004 despite increases in minority participation rates during that time.

International Baccalaureate

The International Baccalaureate Organization (IBO) was founded in 1968. Based in Geneva, Switzerland, the IBO was created in order to develop a uniform curriculum and procedures for university enrollment for children of globally mobile parents. As of 2003, more than 800 schools worldwide participate in the International Baccalaureate Programme. In the United States alone, more than 300 high schools participate in the IB (Andrews, 2003). Despite the passage of KRS 160.348 (2002) that required every secondary school to offer a curriculum with AP, IB, dual enrollment, or dual credit courses through on-site or online means by 2003-2004, the KDE (2009a) currently identifies only 5 schools in the Commonwealth as IB institutions. Hertberg-Davis et al. (2006) suggest that this slow rate of growth is due to the fact that IB requires a school to commit to a full course of study as opposed to the AP program that can be initiated with select courses.

The IB curriculum is a 2-year program that is divided into the six academic areas of language, second language, individuals and societies, science, math and computer science, and art. In addition, students are required to complete a theory of knowledge course, a community service program, and a 4,000-word essay on a topic of student interest. In order to earn an IB diploma, students must score a 4 out of 7 or better on each subject area exam as well as complete the theory of knowledge course, the community service project, and the essay in a satisfactory manner. In 2002, 81.8% of the students in Kentucky who were eligible earned an IB diploma versus a national success rate of 77.9%. The admitting postsecondary institution determines the number of college credits granted for an IB diploma. Students who do not earn an IB diploma may be granted college credit for individual courses with approval by the admitting postsecondary institution (Andrews, 2003). Most postsecondary institutions grant credit for scores of 4 or better on the end of course exams (Kaye, 2006).

In a mixed-method study that included interviews with 300 students and 200 teachers as well as observations in 23 different schools, Hertberg-Davis et al. (2006) attempted to determine how students perceive and evaluate their learning experience in the AP and IB programs and how teachers implement the curriculums in these programs. The researchers found that minority students were underrepresented in IB programs, and those minority students who did participate in IB tended to underperform on end of course exams. Many minority students in the study pointed to a lack of requisite skills such a time management and study skills as a barrier to success. In addition, these students also indicated that they were unable to catch up when they fell behind due to the fast pace of the program. According to an analysis of data collected for the Academic

Pathways to Access and Student Success (APASS) project, IB programs are present in 49 states. Unfortunately, only 17 states indentified IB as a method of reaching underserved students (Kim, 2006).

Tech Prep and Middle College

According to Bragg et al. (2006), Tech Prep was developed in order to provide students with the academic and technical skills required for successful employment in a highly skilled workforce. A sequential program of study attempts to provide students with a seamless transition into postsecondary education and employment through academic courses and technical training. The majority of Tech Prep programs lead to either an associate's degree or a postsecondary certification in a technical field.

Tech Prep was created as a result of the passage of the Tech Prep Education Act, Title II of the Carl D. Perkins Vocational and Technical Education Act of 1984.

Although the program is federally funded, states allocate resources to local programs that provide the education and training required to meet the needs of the local workforce (Bragg et al., 2006). According to a study of state policies regarding accelerated learning options conducted by WICHE (2006), 13 states currently have specific legislation related to Tech Prep. Legislation on Tech Prep tends to be less comprehensive than policies on other forms of advanced learning options. In Kentucky, a School-to-Careers System oversees a wide variety of programs such as Tech Prep, School-to-Work, and High Schools That Work. Matching funds are distributed to local Tech Prep initiatives through the School-to-Careers Grant Program.

In 2002, over 45 states had adopted Tech Prep programs according to a survey administered by the National Association of State Directors of Career Technical

Education Consortium (2002). Utilizing statistics from a state survey administered by the APASS project, Kim (2006) determined that all 50 states had developed Tech Prep programs by 2006. In addition, 45 states indicated that the programs targeted underserved students. Survey results also revealed that 12 states identified Tech Prep as the primary means to promote college access and success.

According to an analysis of data submitted by the Illinois consortia of The Prep programs, Bragg et al. (2006) determined that the implementation of the programs and an emphasis on student participation in dual credit and dual enrollment resulted in an increase in articulated credits from roughly 50% to 70% in a 3-year period from 2001 to 2003. In addition, college enrollment and persistence of Tech Prep students increased modestly from 2001-2005. Unfortunately, the percentage of Tech Prep students who required at least one remedial course in college was relatively consistent over all 5 years of the study.

In addition to looking at student data, Bragg et al. (2006) also conducted surveys of the consortium directors. In the surveys, the directors were asked to identify what they perceived to be the major barriers to effective implementation of the program. The directors identified the ability to find qualified instructors to teach the technical courses in the high schools as the major impediment to implementation of Tech Prep. Other major barriers included a lack of funding, a lack of understanding about Tech Prep, a lack of acceptance of Tech Prep as a rigorous academic program, and the stereotype that Tech Prep is for less socially and academically desirable students.

Kentucky currently operates 54 area technology centers that offer hands-on training in business and graphic technologies, construction technology, health and human

services, horticulture technology, manufacturing technology, and transportation technology. Articulated credit is offered through the Kentucky Virtual School and area community colleges in an effort to provide a seamless transition to postsecondary education (Kentucky Tech Prep, 2009).

As an offshoot of Tech Prep, Middle College High Schools have developed on college campuses in order to assist at-risk students to complete high school and earn college credit. Students in the program are provided a wide range of counseling and advising services in addition to receiving individualized attention and small group instruction. (What Works Clearinghouse, 2009). As of 2006, 23 states offered Middle College programs (Kim, 2006).

Currently, only a handful of Middle Colleges operate in the Commonwealth of Kentucky. An example of the Middle College concept would be Commonwealth Middle College, which officially opened on the campus of West Kentucky Community and Technical College in the fall of 2009. The 50 students in the first class will earn their high school diploma and have the opportunity to complete a minimum of 36 hours of college credit while receiving career counseling. At this time, district attendance funding and a substantial donation by the Lay Foundation finance the program. As a result, the program is completely free to students (West Kentucky Community & Technical College, 2009).

Analyzing data collected by the National Middle College High School Consortium, Cunningham and Wagonlander (2000) determined that students who attend Middle Colleges show improved attendance, lower dropout rates, higher grade point averages, higher graduation rates, higher postsecondary enrollment rates, and better job

placement rates than other at-risk students nationally. In contrast, an analysis of data collected for a dropout prevention study revealed no discernable effects of Middle College on dropout prevention and increased graduation rates (What Works Clearinghouse, 2009).

Career Academies

Often lumped together with Tech Prep under the overarching term of career and technical education, career academies are typically schools within a school that offer a college preparatory curriculum while focusing on a career-related theme. Although initially focused on dropout prevention and vocational education, career academies have evolved to meet the needs of a job market that now requires postsecondary levels of education for gainful employment in well-paying jobs (Stern, Dayton, & Raby, 2000). Career academies share 3 common characteristics. First, the academies are small learning communities where students meet with the same teachers over a 2- to 4-year period. Second, the academies offer a college preparatory curriculum geared toward a specific career such as business and finance. Third, the academies develop partnerships with area employers to expose students to the real-life application of learned material via mentoring, service learning, and career internships (Stern et al., 2000).

According to Stern et al. (2000), the first career academy was established in 1969 at Edison High School in Philadelphia. By 1982, the 29 academies that had developed independently around Philadelphia were organized under one entity. In the 1980's, academies in New York were sponsored by businesses such as American Express that banded more tightly to create the National Academy Foundation. On the west coast the first career academies appeared in 1981 around Silicon Valley. In 1984, the California

government authorized and funded the development of 10 more career academies. That number was increased to 40 in 1987 and 290 by 2000. As of 2000, more than 500 academies operate in California. Many states have followed California's lead in the development of career academies. For example, the Illinois Board of Education opened 20 career academies during the 1994-1995 school year. By 2000, that number had expanded to 50.

In examining the benefits of career academies, Maxwell and Rubin (2002) conducted a quantitative analysis of a single district and national data to compare outcomes of career academy students versus students in regular programs. Empirical analysis revealed that the career academies increased the educational attainment of at-risk students. Kemple and Snipes (2000) conducted a large scale, multi-site evaluation of students randomly assigned to either a regular program of study or a career academy in order to identify the effects of career academies on student outcomes. Overall, academy students earned more credits than their counterparts in a regular course of study. In addition, high-risk students in the academy setting exhibited reduced dropout rates, improved attendance, and increased on-time graduation rates. On the other hand, students in the academies did not demonstrate any improvement on standardized math and reading tests. Kerka (2000) suggests that alternatives to standardized tests may be more appropriate for students in career academies.

In a preliminary report on a national evaluation of career academies, Kemple and Rock (1996) identified several key factors affecting the successful implementation of career academies. Factors included adequate funding, effective administrative leadership,

school and district support, effective collaboration with employer partners, and a linkage of the program with local needs.

In an effort to promote career and technical education, the Kentucky Community and Technical College System (KCTCS) with the financial support of the Ford Foundation embarked on a mission in 2002 to integrate remedial, workforce, and academic endeavors to promote the economic and academic success of students (KCTCS, 2009a), and thereby, improve the workforce competitiveness within the Commonwealth of Kentucky. The resulting 17 career pathways combine academic preparation with skill development and certification to provide a seamless transition to further postsecondary education or improved employment. The pathways are developed and maintained through partnerships between secondary schools, local KCTCS colleges, and employers (KCTCS, 2009b).

Dual Credit/Concurrent Enrollment

Many definitions exist for dual credit, dual enrollment, and concurrent enrollment. For example, the KDE (2009a) defines dual credit as college level courses taught on the high school campus while dual enrollment courses are postsecondary courses taught at a college or university. For purposes of simplicity and clarity of understanding, the standard definition of dual and concurrent enrollment as adopted by the ECS will be utilized to refer to all dual credit, dual enrollment, and concurrent enrollment programs throughout this project. According to the ECS (2001), “Dual or concurrent enrollment is defined as a high school student enrolled in a postsecondary institution while still in high school” (p.4). High school students in dual or concurrent enrollment programs are thereby able to earn secondary and postsecondary credits for the

satisfactory completion of courses. This all-encompassing definition includes postsecondary courses taught to high school students in both the secondary setting and the postsecondary setting, as well as online through distance learning or virtual schools. In addition, dual credit courses taught as a portion of a Tech Prep program or CTE program also fall under this definition. AP courses and IB courses are not included under this definition as students in AP and IB programs earn college credit based upon examinations versus satisfactory course completion (ECS, 2001).

History

According to Conklin and Williams (1990), the primary objectives of dual credit programs are to provide a smooth transition from high school to college, decrease the time required to earn an undergraduate degree, eliminate academic redundancy, improve academic readiness for postsecondary education, and increase the educational opportunities for students. That being said, the roots of dual credit education can be traced back to the 1880's when the Massachusetts Teachers' Association passed two resolutions. One condemned the lack of cooperation between secondary and postsecondary institutions. The other called for increased cooperation between both high schools and colleges in order to ease the transition for secondary to postsecondary education and improve educational opportunities for students. In 1882, the Committee of Ten addressed these concerns by recommending a standardized high school curriculum and stressing the need for increased coordination between secondary and postsecondary institutions (Stoel, 1988). Despite the efforts of the Committee of Ten, Conklin and Williams (1990) suggest that most colleges continued to set their own standards for academic preparedness. Thus, high schools were unable to prepare students adequately

for the vast array of college entrance requirements. Conklin and Williams state that little changes were made in the educational status quo until the Sputnik crisis and the radical social changes of the mid-1960s.

The first true concurrent enrollment program was the Syracuse University's Project Advance (SUPA) that was developed in the early 1970's (Conklin & Williams, 1990). Initially, this program targeted academically gifted students at seven high schools in Syracuse, New York. Since its inception, the program has expanded to 165 high schools and now provides services to all qualified high school seniors who are interested in receiving college credit while enrolled in high school (Syracuse University, 2009).

According to Kim, Kirby, and Bragg (2004), a small number of other programs developed over the next several years utilizing the SUPA model. Developed in 1974, The Middle College High School at LaGuardia Community College was a dual credit program that focused on students who were at high risk of dropping out. In all other regards, it conforms to the Middle College concept previously discussed. Other examples of the development of dual credit programs include Florida International University's Partners in Progress that was created in 1982 to provide a rigorous curriculum to minority students in inner city schools (Greenburg, 1989) and the Kingsborough Community College's College Now program that was developed in New York in 1984 (Kim et al., 2004). The major goal of College Now is to provide qualified students the opportunity to take college courses while still in high school and thus prepare them for success in college. The program also provides remediation to students who are not yet adequately prepared to undertake college-level coursework. The program was expanded to colleges in the City University of New York system in 1999.

Despite the development of these isolated programs, dual enrollment did not gain wide acceptance until the mid-1980's when several states began to enact legislation to ensure that students capable of college-level coursework had access to postsecondary educational opportunities while still in high school. Boswell (2001) identified several factors that served as the impetus for policymakers to act. Dual enrollment programs reduced college costs, accelerated student progress toward degree attainment, combated the senior slump, improved college admissions, and increased the academic opportunities for rural students. The first such state-mandated program was the Post Secondary Enrollment Options (PSEO) enacted by the Minnesota legislature in 1985. This program allowed any high school junior or senior to take postsecondary courses on the college campus at state expense provided the students met the admission criteria for the college (Boswell, 2001; Greenburg, 1989). According to Boswell (2001), other states such as Michigan, Indiana, Iowa, and Ohio have all adopted similar dual credit programs.

Following the success of the PSEO, Washington's Running Start program is another example of a state mandated dual credit program. Established in 1994, the program initially enabled qualifying high school juniors and seniors to take college level courses at area community and technical colleges at no cost to the students. The program has since expanded to include five 4-year postsecondary institutions. As of 2006, the program served approximately 10% of the state's juniors and seniors. In terms of grades, completion rates and degree attainment, students in the Running Start perform at a level equivalent to that of college aged students who are not in the program (State of Washington, State Board for Community and Technical Colleges, 2006).

As a whole, the expansion of dual enrollment programs has been dramatic over the last several years. By 2001, Boswell (2001) reported that 38 states had adopted state policies for concurrent enrollment programs. Andrews (2004), however, identified dual credit programs in 44 states that were sanctioned through state legislation or operated by various state education offices. In 2006, WICHE released an analysis of state policies regarding accelerated learning programs indicating that 42 states had adopted concurrent enrollment policies. Of these states, 40 had adopted specific state statutes regarding dual credit. Kim (2006) found that dual enrollment programs operated in some form in all 50 states. In addition, dual credit programs were identified by 17 states as the primary academic pathway for promoting student access and success to postsecondary educational opportunities. By comparison, only 12 states identified AP as the primary pathway. Another 12 states identified Tech Prep as the primary pathway. Andrews (2004) attributes the growth of dual enrollment to the fact that dual credit programs directly address two educational issues of national concern: the senior slump and the length of time required to earn a degree which estimated to be roughly 5 to 5.5 years.

In analyzing the quality of the various dual credit programs available throughout the country, the ECS (2001) noted that concurrent enrollment programs varied greatly from state to state. In order to rate the programs, the ECS utilized broadly defined categories and found that 21 states offered comprehensive dual credit programs. These programs met two of three criteria: offered courses to students with minimal or no tuition costs, granted secondary credit for postsecondary courses taken, and stipulated few course restrictions. Kentucky was 1 of 26 states identified as having limited programs. The programs in these states required students to pay tuition costs associated with

postsecondary course, placed numerous restrictions on courses, or established stringent guidelines for course eligibility.

Barriers

Despite the growth of dual credit programs throughout the country, the ECS (2001) has identified numerous barriers to the effective implementation of effective dual enrollment programs. Specific issues related to dual credit programs outlined by the ECS involve the loss per pupil funding at the secondary or postsecondary level, governmental desires to avoid the “double-dipping” of state revenue, the cost of tuition, the quality of instruction, restrictions on enrollment, problems with course transferability, and the lack of information on dual credit options.

According to Boswell (2001), 13 states do not allow dually enrolled students to be counted in the full time equivalent (FTE) for the postsecondary institution. Findings by Andrews (2000b) indicate that a failure to count dually enrolled students in both the ADA and FTE may be a deterrent to the development of dual credit programs. Prior to 1997, the 48 community colleges in Illinois were not allowed to count dually enrolled students for funding purposes unless these students were not counted in the ADA figures for their high schools. During the 1997-1998 school year, the Illinois Community College Board began allowing community colleges to count dually enrolled students in the FTE figures for the colleges even though the students were counted in the ADA figures for the high school. In 2000, Andrews conducted a survey of the presidents of all 48 community colleges and found that the change in funding had resulted in a marked increase in concurrent enrollment programs. Prior to the policy change, 18 of the community colleges did not offer any dual credit courses. By 2000, all 48 colleges were offering

concurrent enrollment programs, and secondary school involvement in dual credit courses increased by 240% from 1997-2000. In addition, 26 of the colleges reported that dual credit courses were offered in the secondary setting, and 28 of the colleges offered dual credit classes through distance or virtual learning formats.

Despite the aforementioned findings by Andrews (2000b), only 27 states allow both the local school district and the postsecondary institution to count dually enrolled students in their respective enrollment figures for state funding (Boswell, 2001). Boswell (2001) identifies state government concerns over “double dipping” of revenue as the main reason why other states have not adopted a more liberal funding policy for dually enrolled students. Chapman (2001) states that concerns over double-dipping pose a barrier to the development and implementation of dual credit programs. After analyzing state policies, WICHE (2006) suggests that states should investigate funding options that compensate both the high school and postsecondary institution in order to maximize the benefits of concurrent enrollment programs.

With regard to tuition, 15 states require that the state or local school district pay most if not all of the costs associated with dual enrollment while local districts in 9 other states have the option of covering the tuition costs of dual credit courses. Reduced tuition for dual credit is mandated in 3, and 18 states, including Kentucky, assume that students are responsible for tuition associated with dual credit courses; however, local districts may subsidize these costs or the postsecondary institution may reduce tuition for dually enrolled students (Boswell, 2001). For example, tuition for courses taken through the Dual Credit Program at Western Kentucky University (2009) currently cost \$200.00 versus \$867.00 in tuition for regular undergraduate courses. Also, tuition for dual credit

courses through the ECTC during the 2007-2008 school year ranged from free to \$140 for a 3-hour course (ECTC, 2009).

Research appears to confirm that tuition costs play a large role in the development and growth of dual credit programs. Utilizing statistics gathered by the Illinois Board of Education, Andrews and Barnett (2002) examined the effect of the Accelerated College Enrollment (ACE) grants on dual credit participation rates. ACE grants were implemented in Illinois in 2001 in an effort to cover part, if not all, of the tuition and fees associated with dual credit courses. Student participation in dual credit programs increased over 100% from 5,863 students in 2000 to 11,809 in 2001. By 2002, the number of students receiving ACE grants for dual enrollment increased to 17,006 (Barnett, Gardner, & Bragg, 2004).

The ECS (2001) identifies tuition costs as a barrier to the effective implementation of dual enrollment programs and expresses concern that forcing students to pay for tuition may exclude low-income students from participation if no financial aid or tuition assistance is rendered. In order to address these concerns, WICHE (2006) recommends that federal and state policymakers should provide funds to secondary and postsecondary institutions that provide improved access to accelerated learning options for underrepresented and economically disadvantaged students. In addition, WICHE suggests that states ensure that low-income students do not incur expenses as a result of participation in accelerated learning programs.

Given that many states have not set standards for dual credit programs, the quality of the programs being offered and the qualifications of secondary educators to teach postsecondary level courses are often cited as major concerns (American Association of

State Colleges and Universities [AASCU], 2002; Boswell, 2001). Chapman (2001) identifies questions related to faculty qualifications and selection as a major issue that needs to be addressed in order to develop a quality dual credit program. WICHE (2006) recommends that state boards of education and state higher education offices should develop clear guidelines that address issues related to the curriculum and faculty of accelerated learning options such as dual credit programs. The SREB (2005) recommends that high school educators who teach college level courses should have at least 18 graduate hours in the teaching field and have a master's degree.

In addition to the concerns about course quality and faculty qualifications, Boswell (2001) and the AASCU (2002) identify restrictions on enrollment and the transferability of credit both to postsecondary institutions and from one institution to another as issues with dual credit programs that need to be addressed. The ECS (2001) also cites the lack of information available on dual credit options as another barrier to the effective implementation of concurrent enrollment programs. In an effort to address these concerns, WICHE (2006) makes a number of recommendations. First, with regard to enrollment restrictions, WICHE suggests that state policymakers and others involved accelerated learning options should remove policies and barriers that may limit access or participation in programs such as dual enrollment. Second, WICHE recommends that state legislators ensure that students receive credit at any state supported postsecondary institutions for dual credit courses. Third, state lawmakers should mandate that secondary and postsecondary institutions provide information on accelerated learning options to all students in grades 9-12.

According to Andrews (2000a), Missouri and Illinois are examples of states that have addressed issues of quality, enrollment, and transferability. The Missouri Coordinating Board for High Education assigned the responsibility for dual credit course quality to the postsecondary institution. The institutions are required to develop principles of good practice relative to student eligibility, program administration, faculty qualifications, assessment, and transferability of courses. The Illinois Community College Board requires that all instructors of dual credit courses be employed and evaluated by the community colleges. Instructors must have qualifications and credentials on par with those required for teaching at the college level. In addition, other criteria have been established to ensure that qualified students are able to enroll in concurrent enrollment programs and that dual credit courses are transferable to all baccalaureate degree granting institutions.

Created in 1999, the National Alliance of Concurrent Enrollment Partnerships (NACEP) directly addresses many of the concerns and issues related to dual enrollment through the development of national standards for curriculum, instruction, student enrollment, student assessment, and program evaluation of dual credit programs. In addition, the NACEP (2009a) promotes program development and encourages research of concurrent enrollment. Western Kentucky University is currently the only postsecondary institution in the state that is a fully accredited member of the NACEP (NACEP, 2009b).

Benefits

In examining the benefits of dual credit programs, policymakers cite several advantages for students in increasing accelerated learning options. First and foremost,

dual credit programs save students time and money (AASCU, 2002; Boswell, 2001; ECS, 2001; Greenburg, 1989). By eliminating academic redundancy between secondary and postsecondary institutions, students are able to take fewer postsecondary courses in college (Boswell, 2001), thus decreasing the amount of time and money required to stay in college and thereby increase persistence rates.

A survey conducted by Andrews in 2000 of the presidents of all 48 community colleges in Illinois substantiates these assertions. When presidents were asked to identify the main strength of the dual enrollment programs, seven of the presidents cited the program's ability to save students' time and money as the major benefit (Andrews & Barnett, 2002). Other research by Andrews and Marshall (1991) also verifies that dual enrollment can save time and money. In investigating the implementation of a dual enrollment program for advanced students at Marquette High School in Ottawa, Illinois, Andrews and Marshall determined that allowing juniors and seniors at the school to enroll in dual credit courses at a nearby community college would enable the students to earn as much as 30 hours of college credit and thereby decrease the time required to earn a 4-year degree by 1 whole year. In addition, Andrews and Marshall estimated that students could save \$4,000 to \$15,000 in future college expenses by taking advantage of the program.

The Washington State Board for Community and Technical Colleges also identifies cost and time savings as a major benefit of the Running Start program. Through this state-supported dual credit program, students can complete their first 2 years of college during their junior and senior year of high school. In addition, students pay no tuition for the dual credit courses taken through the program. According to data

complied by the State Board for Community and Technical Colleges, the average student in the Running Start program who completed a bachelor's degree in 2004 required 33 fewer credits than students who did not participate in the program and entered college as freshmen (State of Washington, State Board for Community and Technical Colleges, 2006).

In addition to saving time and money, dual enrollment programs increase the communication and collaboration between secondary and postsecondary institutions, thereby improving the academic rigor needed to combat the effects of the senior slump (AASCU, 2002; Andrews, 2004; Boswell, 2001; ECS, 2001; Greenburg, 1989). As previously stated, Kirst (2001) found a lack of coherence and sequencing between secondary and postsecondary institutions with regard to curricula and assessments that would adequately prepare and place students.

In the aforementioned survey of community college presidents, Andrews and Barnett (2002) found that 15 of the 48 respondents identified the increased opportunities and intellectual challenges of dual credit as the major strength of the programs offered by the community colleges in Illinois. Additionally, the State Board for Community and Technical Colleges in Washington determined that students who had participated in the Running Start program completed more college credits with better grades than similarly aged college students who were not in the program (State of Washington, State Board for Community and Technical Colleges, 2006). Likewise, Spurling and Gabriner (2002) conducted a study of 2,274 students comparing course completion rates and grade point averages of students who had matriculated to the City College of San Francisco after having been in the concurrent enrollment program at the college to students who had

enrolled at the college without dual enrollment experience. Students who had taken dual credit classes passed 58% of their college courses versus 53% for the students who did not have dual credit experience. In addition, students who had taken dual credit courses maintained a grade point average that was approximately one quarter of a point higher than those who did not have a dual credit background.

By providing a rigorous curriculum, dual credit programs decrease the need for remediation. In addition, the AASCU (2002) suggests that offering college courses to at-risk students may actually reduce dropout rates. The National Commission on the High School Senior Year (2001a) reported that one-third to one-half of high school seniors are under-educated or miseducated for either work or college. While studying underprepared students, Adelman (1999) determined that only 39% of college students who required remedial reading courses earned bachelor's degrees versus a 69% graduation rate for students who did not require any form of remediation. In the same study, Adelman concluded that a rigorous high school curriculum had more bearing on academic persistence and degree completion for African American and Hispanic students than any other pre-college indicator.

In an effort to prevent below average students from dropping out or failing to enroll in postsecondary options, Lord (2000) noted a growing trend in providing college courses to below average students through Middle Colleges and community colleges with open enrollments. Growth of this concept has been rapid. According to Kleiner and Lewis (2005), approximately 5% of all Title IV degree granting institutions had dual enrollment programs for at-risk students. Approximately 39% of these programs had a career or technical focus while 34% had an academic focus. In examining academic

pathways that promote student success, Kim (2006) analyzed data of a 50-state survey conducted by the APASS project, and found that 29 states had dual credit programs that targeted underserved populations.

Along the same lines, dual credit courses can provide greater academic opportunities to students at rural high schools (Boswell, 2001; ECS, 2001). In analyzing the data from the Colorado Department of Education and Colorado Community College System on dual credit programs at 29 high schools, 5 college centers, and 1 community college in rural eastern Colorado over a 9-year period, Gertge (2008) found that a significant portion of the students who participated in dual enrollment programs were doing so through distance learning networks. The two-way interactive television networks enabled instructors to reach small separated students populations simultaneously, so that the students could have access to the same educational opportunities as students at larger schools. Approximately 25% of the students eligible for the dual enrollment programs participated during the course of the study.

Dual credit is also utilized as a means of providing advanced and academically gifted students with a challenging education. In investigating the dual enrollment program for advanced students at Marquette High School in Ottawa, Illinois, Andrews and Marshall (1991) found, that prior to the implementation of a dual credit program with the Illinois Valley Community College, the school averaged just three students a year earning Advanced Placement credits. Since the implementation of the program, the school has an average of 35 students a year that have earned an average of 18 hours each. In addition, an average of 80% of the graduates from Marquette High School enroll in college.

Dual credit programs are also associated with increased student aspirations to attend college (Boswell, 2001; ECS, 2001; Greenburg, 1989). In investigating the attitudes and experiences of low-income students who go to college, King (1996) concluded that a rigorous high school curriculum for all students coupled with access to college counseling were instrumental factors in the low-income student's decision to attend college. Incidentally, over 60% of the students in his study who identified themselves as low-income were also minorities. In order to determine student perceptions of dual enrollment and postsecondary educational plans, Peterson, Anjewierden, and Corser (2001) conducted a survey of students enrolled through a dual credit program at Salt Lake Community College. Of the students enrolled in the program, 56% reported that participation in the program had encouraged them to attend college and 42% stated that it did not have an effect on their postsecondary educational decisions. Less than 1% indicated that participation in dual credit courses had discouraged their decision to attend college.

Similarly, Smith (2007) conducted a survey of 304 students at five rural Kansas high schools in an effort to determine the relationship between educational aspirations and participation in and the location of dual credit courses. After controlling for personal factors and the highest level of parent education, Smith concluded that there was a positive correlation between dual enrollment and increased educational aspirations. In addition, she found that students who took dual credit courses on the college campus exhibited higher educational aspirations than those who had taken courses at the high school.

Lastly, with regard to students, dual credit courses improve student college retention and persistence rates (AASCU, 2002). As previously stated, Adelman (1999) determined that the single greatest predictor of a student's academic persistence and degree completion was dependent upon the academic rigor of the student's secondary education. In a similar longitudinal study of the persistence rates of a nationally representative cohort of high school seniors from 1992 who matriculated to college, Adelman (2006) found that those students who had completed at least 9 hours of college credit during high school had an increased likelihood of finish their bachelor's degree within 8 years. Based on Adelman's findings, students such as those at Marquette High School and those in the Running Start program in Washington have a much greater chance of completing their degrees than students who do not have sufficient access to dual credit programs. In a mixed method study that examined the matriculation, persistence, and degree completion rates of students at two community colleges, Lokes et al. (2007) found that high students who had participated in CTE programs with dual credit options performed better academically and had higher degree completion rates than students who had not participated in such programs.

In examining the many advantages of dual credit programs, researchers also point to improved relationships between secondary and postsecondary institutions as another benefit of dual credit programs (AASCU, 2002; Boswell, 2001; ECS, 2001; Greenburg, 1989). In the aforementioned study by Andrews and Barnett (2002), 35% of the community college presidents cited improved relations with local high schools as the greatest strength of their respective dual credit programs. Additional benefits to institutions from dual credit programs include improved student recruitment, improved

community relations, and an increase in potential funding sources (AASCU, 2002; Greenburg, 1989).

In addition to traditional instructional methods, distance learning and virtual schools have experienced rapid growth as a means of delivery for dual credit courses. From 2001-2002 to 2005-2006, the Running Start program in Washington experienced 163% growth in online instruction. From 1998-1999 to 2005-2006, online delivery of courses increased over tenfold (State of Washington, State Board for Community and Technical Colleges, 2006). According to aforementioned data by Kim (2006), distance learning programs or virtual high schools are present in all 50 states. In addition, online instructional programs in 36 states are geared to reach underserved populations.

With regard to online instruction, the State Board for Community and Technical Colleges in Washington (2006) declares that online delivery methods enable students to access college courses from their high school campus thereby increasing the accessibility to students in remote and rural locations. Gertge's (2008) aforementioned study in rural eastern Colorado affirm the assertion that distance learning is beneficial to rural populations with limited access to postsecondary educational opportunities.

In performing an analysis of virtual schools, Clark (2001) conducted an online survey of 44 virtual learning formats that included state sanctioned virtual schools, university based programs, regional consortiums, secondary school based programs, private virtual schools, charter programs, and for profit virtual education providers. These surveys were followed up with e-mails and telephone interviews to glean further information whereby Clark found that dual enrollment courses accounted for

approximately 16% of online courses offerings. In addition, remedial courses accounted for an additional 24% of virtual learning courses.

Although dual enrollment programs are typically mentioned separately when discussing accelerated learning options, dual credit is often utilized to enhance other means of articulation such as Tech Prep, Middle College, and CTE programs (Barnett et al., 2004). For example, in Washington 17,140 students earned an average of 6.5 college credits through Tech Prep in 2005-2006 (State of Washington, State Board for Community and Technical Colleges, 2006). Also, as previously mentioned, Bragg et al. (2006) determined that student participation in dual credit and dual enrollment in the Tech Prep programs in Illinois increased roughly 50% to 70% in a 3-year period from 2001 to 2003. Finally, in examining CTE programs at two community colleges, Lekes et al. (2007) found that high school students who had participated in CTE programs with dual credit options performed better academically and had higher degree completion rates than students who had not participated in such programs.

Dual Credit in Kentucky

In 1997, the Kentucky General Assembly passed the Postsecondary Education Improvement Act of 1997 (KCPE, 2009; Kentucky Postsecondary Education Act of 1997, 1997). This legislation was enacted in order to improve college matriculation, persistence, literacy, job growth, and the standard of living in the Commonwealth. In addition, this legislation consolidated the governance of Kentucky's community colleges under the KCTCS (Welsh, Brake, & Choi, 2005).

In 2000, the KCPE abolished the restrictive participation criteria it had established for dual enrollment programs in the state and granted the local school districts and

postsecondary institutions the opportunity to develop their own articulation agreements regarding dual enrollment (KCPE, 2006a). In addition, transferability of dual credit courses was ensured at all state supported postsecondary institutions. The intent of these policy changes was to promote an increase in the number of students pursuing postsecondary education and thereby improve the quality of life for Kentuckians. Within this policy framework, dual credit is expected to increase community college enrollments and allow community colleges to serve as a point of access for higher education (Welsh et al., 2005).

The change in policy by the KCPE resulted in a 96.2% increase in the number of students participating in dual credit courses from 9,321 in 2001-2002 to 18,921 in 2004-2005. Of the 18,921 students enrolled in dual credit courses during 2004-2005, 87% were enrolled in the KCTCS. In addition, 43% of all student enrolled in 2003-2004 took only technical or occupational courses while 18% took business or information technology courses. Only 19% of students during the same period took academic courses for dual credit (KCPE, 2006a).

In 2006, the KCPE released results of a multi-year study aimed at examining matriculation and retention rates to postsecondary institutions. Data for the study were submitted to the Council's Comprehensive Database by postsecondary institutions in Kentucky. Results of the study indicated that 32% of dually enrolled students in the 2003-2004 school year matriculated to postsecondary education in the 2004-2005 school year. Of students who took academic dual credit courses, 68% matriculated while only 17% of students who took tech courses and 19% of students who took business courses matriculated. In conclusion, the KCPE determined that dual credit programs did not

substantially increase matriculation or retention rates; however, results did indicate that those dual credit students who did matriculate had a grade point average at the end of their second year of college that was over one-third of a point higher than students who had not earned dual credit (KCPE, 2006a).

Although the study indicated that only 32% of dually enrolled students in the 2003-2004 matriculated to postsecondary education in 2004-2005, data collected by the KCPE do not distinguish between junior and seniors and possibly sophomores who were dually enrolled. As a result, the matriculation rate was lowered because of juniors and sophomores in 2003-2004 who did not enroll in postsecondary education. Allowing 3 years for all dually enrolled students to matriculate rectifies this problem. Of the dually enrolled students in 2001-2002, 57% matriculated to postsecondary education in Kentucky by 2004-2005. In addition, the KCPE determined that many students who had dually enrolled in KCTCS institutions were not properly identified as first-time students and were, therefore, not included in the matriculation rates (KCPE, 2006a).

In an aforementioned study, Welsh et al. (2005) examined student predictors of student participation and success in dual credit courses. In addition, they investigated the dual credit enrollment trends for the general population as well as underserved students. The researchers used dual credit students enrolled in the KCTCS system during the fall of 2000 and 2001 as the sample population. Welsh et al. (2005) found that community colleges experienced significant growth in dual enrollment courses from 2000 to 2001. In addition, they determined that females, African Americans, low-income students, and rural students also experienced significant growth in dual enrollment over the same

period. With regard to predictors of success, the researchers found that English and math subtest scores on the ACT were the best predictors of success in dual credit courses.

Kentucky lawmakers believe so strongly in dual credit as a means of improving degree attainment and, subsequently, the standard of living and quality of life for Kentuckians that they have enacted legislation mandating the implementation of these programs into all Kentucky schools. KRS 160.348 (2002) requires every secondary school to offer a curriculum with AP, IB, dual enrollment, or dual credit courses through on-site or online means. This statute also requires each site-based council to develop policies for the recruitment and assignment of students to these programs. KRS 158.622 (2002) requires each district to identify current and future funding sources for dual enrollment programs.

In addition, Kentucky state law requires that the KCPE develop guidelines for the content of dual credit courses and training for the teachers of such classes (WICHE, 2006). In order to improve policies related to dual credit, the Kentucky P-16 Council created a Dual Credit Task Force that developed an action plan to address issues related to dual credit in Kentucky. Recommendations include but are not limited to improving readiness for under-prepared students to take dual credit class, establishing statewide eligibility standards for readiness, creating clear pathways for continued education, providing free or discounted funding for dual credit courses, improving the quality of instruction, and gauging success through continued research of dual credit education in Kentucky (Kentucky P-16 Council, Interagency Task force on Dual Credit, 2008).

With regard to virtual schools and distance learning, Kentucky initiated the Kentucky Virtual University (KYVU) in 1999. Since that time enrollment in online

courses through the KYVU has increased from 300 students to over 55,000 in 2005. Of the students who received a degree or credential in 2004-2005, 28% took at least 1 course through the KYVU. The KYVU estimates that 55% of students in Kentucky who earned a degree in 2004-2005 took at least 1 online course in the previous 4 years. In addition, the number of students taking online courses in Kentucky increased 48% from 2002-2005 (Kentucky P-16 Council, 2006). Currently, the goals of the Kentucky Virtual Schools (KYVS) are to provide access to an expanded curriculum for every student, increase instructional support for at-risk students, provide educational enrichment to gifted students, and enable schools to offer AP and foreign language courses (KDE, 2009b).

A major impediment to implementing dual credit programs in Kentucky is related to the fact that Kentucky is 1 of 18 states that assume the student or parent is responsible for the tuition and fees associated with dual credit courses (Boswell 2001). According to survey results collected by the Kentucky P-16 Council Dual Enrollment Task Force (2006), tuition costs borne by dually enrolled students vary widely and nearly all KCTCS institutions require that the local school districts subsidize tuition associated with dual credit. Consequently, high schools in Kentucky have no financial incentive to promote dual enrollment programs. Indeed, it is in the best financial interests of high schools to downplay the significance of dual enrollment programs. As a case in point, ECTC only has 77 students enrolled in dual credit courses for the fall semester of 2009 (KCTCS, 2009c) despite the fact that there are well over 2,000 juniors and seniors enrolled in secondary schools in Hardin County alone.

Again, research appears to confirm that tuition costs play a large role in the development and growth of dual credit programs. Andrews and Barnett (2002) found

that student participation in dual credit programs increased dramatically when the costs of the tuition and fees associated with dual credit courses were covered by the state. In addition, the ECS (2001) identifies tuition costs as a barrier to the effective implementation of dual enrollment programs and expresses concern that forcing students to pay for tuition may exclude low-income students from participation if no financial aid or tuition assistance is rendered. In an effort to address this problem, the Dual Enrollment Task Force of the Kentucky P-16 Council recommends that issues that impede the enrollment of students in college programs should be eliminated (Kentucky P-16 Council, 2006).

Summary

Research indicates a high degree of correlation between education and wage earning ability (SREB, 2009). Unfortunately, per capita income in Kentucky is only 82.1% of the national average, and bachelor degree attainment rates in Kentucky lag far behind most other states (Kentucky Chamber of Commerce, Task Force on Postsecondary Education, 2007). In an effort to improve the standard of living and quality of life of residents in Kentucky, policymakers and educational leaders have increasingly turned to articulated options, especially dual credit education, as a means of improving the transition from high school to college and increasing postsecondary retention rates.

Although articulated options such as AP, IB, Tech Prep/Middle College, and CTE provide students with a rigorous curriculum and the opportunity to earn college credits while still in high school, each of these options have shortcomings. AP and IB rely on end-of-course exam in order to earn credit. In addition, Hertberg-Davis et al. (2006)

found that minority students were underrepresented in AP and IB programs. Also, minority students who participated in AP and IB tests underperformed on end-of-course exams. With regard to Tech Prep and CTE programs, the KCPE (2006a) found that 68% of students who took academic dual credit courses matriculated while only 17% of students who took tech courses and 19% of students who took business courses matriculated.

Although questions regarding course quality, faculty qualifications, and funding of dual credit programs exist, a number of benefits can readily be identified. First and foremost, dual credit programs save students time and money (AASCU, 2002; Boswell, 2001; ECS, 2001; Greenburg, 1989). In addition to saving time and money, dual enrollment programs increase the communication and collaboration between secondary and postsecondary institutions, thereby improving the academic rigor needed to combat the effects of the senior slump (AASCU, 2002; Andrews, 2004; Boswell, 2001; ECS, 2001; Greenburg, 1989). By providing a rigorous curriculum, dual credit programs decrease the need for remediation. In addition, the AASCU (2002) suggests that offering college courses to at-risk students may actually reduced dropout rates. Along the same lines, dual credit courses can provide greater academic opportunities to students at rural high schools (Boswell, 2001; ECS, 2001). Dual credit is also utilized as a means of providing advanced and academically gifted students with a challenging education. Dual credit programs are also associated with increased student aspirations to attend college (Boswell, 2001; ECS, 2001; Greenburg, 1989). Lastly, with regard to students, dual credit courses improve student college retention and persistence rates (AASCU, 2002).

In examining the many advantages of dual credit programs, researchers also point to improved relationships between secondary and postsecondary institutions as another benefit of dual credit programs (AASCU, 2002; Boswell, 2001; ECS, 2001; Greenburg, 1989). In addition to traditional instructional methods, distance learning and virtual schools have experienced rapid growth as a means of delivery for dual credit courses. Although dual enrollment programs are typically mentioned separately when discussing accelerated learning options, dual credit is often utilized to enhance other means of articulation such as Tech Prep, Middle College, and CTE programs (Barnett et al., 2004).

Methodology

Introduction

The purpose of this study was to identify the characteristics of dual credit programs operated by a local community college that support student participation and achievement. This study sought to gain specific detailed answers to the research question by examining documents and interviewing those people who have a thorough knowledge of these programs at the secondary and postsecondary level. Given the small number of local dual credit programs, a qualitative method of inquiry was utilized for this field-based project. This mode of inquiry was consistent with Hendricks (2009) and Bogdan and Biklen (2007) who suggest utilizing qualitative inquiry when sample populations are small and substantial in-depth information is sought. Additionally, the field-based nature of the study met the first of six criteria that Eisner (1991) identifies as vital features of a qualitative study. By identifying the particular strengths among these programs, local districts and postsecondary institutions will be able to design future dual credit programs that will better serve the needs of their students.

Role of the Researcher

As in any qualitative study, the researcher played an important role in the development and implementation of the study as well as the analysis of data collected throughout the course of the project and the discussion of findings. Eisner (1991) identifies the researcher as an instrument as the second of the six vital characteristics of qualitative studies. The researcher's knowledge and sensibility regarding the subject matter to be studied directly affected the outcome of the study. Eisner suggests that the

imprint that the researcher leaves upon the study is not a liability, but provides further insight upon the subject based upon the researcher's knowledge of the topic.

Along the same lines, Eisner (1991) identifies the interpretive character of the researcher as the third vital aspect of qualitative studies. What data the researcher collected and how he made sense of the data bore a direct impact upon the outcome of the study. This interpretation was directly influenced by the aforementioned knowledge of the researcher as well as his personal style.

Further defining the role of the researcher, Eisner (1991) refers to the Primacy of Judgment. First, Eisner suggests that qualitative research places a high value on the uniqueness of the researcher and his or her particular strengths. Second, the researcher's personal style also influences qualitative work. This permeation of style into qualitative studies is directly opposed to traditional methods of research that seek to minimize personal influences. Additionally, qualitative work is fluid, and the researcher may need to adjust the course of action during a study based upon unanticipated findings. Finally, given that qualitative work lacks the specificity of quantitative studies, a researcher must exhibit a high degree of credibility in order for others to have faith in his or her findings.

With regard to the current study, the researcher had no direct relationship with any of the intended interview subjects. In addition, the researcher was not affiliated with the community college or any of the secondary schools operating the dual credit programs that were investigated. The researcher's interest in dual credit programs is directly related to the potential benefits successful dual enrollment programs could render to the local area. The researcher's knowledge of dual credit programs has been

developed over time through personal investigation as well as the development of the literature review and project proposal.

Throughout the course of this project, the researcher was responsible for constructing and conducting interviews, examining documents, conducting member checks, maintaining a journal of actions and thoughts, participating in peer debriefing, and maintaining an audit trail, so that credibility and trustworthiness can be guaranteed.

Setting

The study focused on the dual credit programs operated by a local community and technical college in Kentucky and two area secondary schools that have exhibited sustained enrollment and high levels of achievement over the last 3 to 4 years. By focusing on these programs, the researcher identified those features of the local dual credit programs that resulted in improved student participation and success. These features coupled with the recommendations of the interview subject could be used to develop a model for future dual credit programs in the area.

In order to gain entry at the local community and technical college, the researcher contacted the chief student affairs officer. Utilizing this individual in the capacity of a gatekeeper as defined by Creswell (1998), the researcher found out that permission to initiate the study had to be granted by the legal counsel for the KCTCS. The researcher then contacted the legal counsel via phone to explain the purpose of the study. After speaking with this person, the researcher e-mailed the legal counsel a letter that addressed why the school and program were chosen, what would be done during the course of the study, how it would affect the school or program, what would be done with the results, how confidentiality would be maintained, and potential benefits the school and program

could receive from participation in the study. Bogdan and Biklen (2007) suggest that being able to answer these types of questions should allay many of the fears that potential institutions and interview subjects may have regarding participation in qualitative studies. In order to gain official consent to begin the study, the researcher asked that the legal counsel respond to the e-mail as confirmation that the study could be initiated. In this way, the researcher verified that entry had been officially granted.

Once the appropriate secondary sites had been identified through the interviews with the subjects at the community and technical college, the researcher utilized the principals at the respective secondary schools as gatekeepers for both dual credit programs. The researcher used the same method of gaining entry at each secondary site as was utilized for gaining entry into the community and technical college.

Once official entry was granted at the secondary and postsecondary institutions and prior to actually initiating the study, the researcher contacted subordinates within the organizational hierarchy and provided them with the informational letter about the study in an effort to build rapport with potential interview subjects and to ensure support at all levels for the study. This method of gaining access is in line with what is suggested by Bogdan and Biklen (2007) who emphasize the importance garnering support at all levels for a study.

Data Sources

Given that the purpose of this study was to identify the characteristics of local dual credit programs that support student participation and achievement, this qualitative study utilized purposive sampling in order to determine who to interview at the postsecondary level and what documents to collect. Erlandson, Harris, Skipper, and

Allen (1993) state that purposive sampling is ideally suited when attempting to identify themes under specific contexts and cultural norms. In addition, Hendricks (2009) and Bogdan and Biklen (2007) suggest that purposive sampling is warranted when feedback is sought from participants regarding effectiveness. That being said, the study initiated with an interview of the chief student affairs officer (CSAO) at the community and technical college and the collection of articulation agreements between the college and the local secondary schools.

Using the snowballing technique, the CSAO provided three other potential interview subjects at the college as well as identified two secondary schools that had dual credit programs that exhibited sustained enrollment and high achievement. In addition, he identified a dual credit instructor at each school whose students exhibit high participation rates and levels of achievement. These subjects were also interviewed so that the characteristics of these programs could be described in rich detail. The snowballing technique is a method of sampling where one interview subject identifies other interview subjects that are “information rich” regarding the research topic (Creswell, 1998).

Interview

As previously stated, after gaining official entry, the researcher provided an informational letter about the study to subordinates in each organization’s hierarchy in an effort to build rapport with potential interview subjects and to ensure support at all levels for the study. Again, this method of gaining access is in line with what is suggested by Bogdan and Biklen (2007) who emphasize the importance garnering support at all levels for a study.

After distribution of the letter, the researcher called each interview candidate and briefly discussed the purpose of the study and the importance of the interviews in the process. During this conversation, the researcher explained that the interviews should be conducted in a quiet place and would last no more than an hour. In addition, the researcher asked for permission to contact each interview candidate via e-mail, so that an interview time and place could be established. In an effort to accommodate the schedules of the subjects, the researcher e-mailed all interview candidates requesting that each respond to the e-mail with a possible time and place for the interview. This method of setting up an interview is consistent with Erlandson et al. (1993) who suggest that providing the interviewee with relevant information about the study and working with the interview subject to verify the time and place of the interview can make the respondent feel more comfortable during the interview process.

Prior to the initiation of each interview, the researcher provided the interview subject with a copy of a letter of informed consent. In addition, the researcher retained an original copy of the letter signed by the interviewee as verification of the subject's agreement to participate in the study. The letter informed the participant of the purpose of the study, participant confidentiality, voluntary participation, and lack of penalties for withdrawal from the study. In this regard, the consent form contained all the pertinent information that Hendricks (2009) suggests should be covered in an informed consent. Most importantly, the letter satisfied the requirements of informed consent required by the human subjects review board at Western Kentucky University.

In addition to the letter of consent, the researcher also informed each respondent that the interview would be audio taped and that a transcription of the recording would be

made available to the respondent for purposes of verification prior to use in the study. By verifying the accuracy of the interview, the confirmability and credibility of the interview were established. Lincoln and Guba (1985) suggest that establishing credibility is absolutely vital in creating the trustworthiness of qualitative research findings.

As previously stated, the researcher initially interviewed the CSAO at the community and technical college. In the course of conducting this interview, the CSAO identified three additional subjects at the college that needed to be interviewed in order to provide the most relevant information needed to address the research question adequately. The CSAO also identified two secondary programs that exhibited sustained enrollment and high levels of achievement and provided the names of dual credit instructors at each of those schools. In this regard, the researcher utilized the snowballing technique of sampling as defined by Creswell (1998) and Bogdan and Biklen (2007).

With regard to conducting the interview, the researcher utilized a semi-structured format for questioning. Hendricks (2009) suggests that this method of questioning is effective in getting the respondents to answer the important research questions while adding other potentially useful information. In addition, the researcher used a number of probing questions to elicit in-depth responses and provide rich, thick descriptions. Bogdan and Biklen (2007) suggest that this is an effective way of gathering rich descriptive information. Specific questions developed for the postsecondary and secondary program administrators as well as the dual credit instructors are included within the appendices of the project.

During the course of the interview process, the researcher followed the recommendations of Creswell (1998) and Erlandson et al. (1993). Creswell suggests that

a researcher should conduct him or herself in a courteous and respectful manner while sticking to the interview questions. Most importantly, Erlandson et al. (1993) state that the best strategy for conducting an interview is simply to be oneself.

At the conclusion of the interview process, the researcher thanked each subject for the interview opportunity and reminded the respondent that a transcription of the interview would be provided to the interview subject for purposes of verification. This act helped to ensure that the lines of communication remained open between the researcher and the respondent. Erlandson et al. (1993) state that this is a vital principle of closure. By keeping the lines of communication open, they suggest that a researcher will be able to return to the respondent for clarification or additional information if needed, and the interview subject will be more likely to provide the researcher with further insights regarding the research topic. Lastly, the researcher sent a thank you note to each subject along with the transcription of the interview for verification.

Documents

Documents collected include articulation agreements developed between the community and technical college and the local secondary schools, informational brochures on dual credit provided by the community college, the early admission policy for the community college, and numerous informational letters distributed by one of the secondary schools to students and parents. Interview transcriptions were checked against each other as well as the collected documents in order to substantiate information and improve the credibility of the study. Hendricks (2009) and Erlandson et al. (1993) suggest that utilizing multiple forms of data gathering through triangulation lend credibility to qualitative research and thereby improve trustworthiness.

Data Analysis

The analysis of the qualitative data was accomplished through the constant comparative method of data analysis. Creswell (1998), Hendricks (2009), and Bogdan and Biklen (2007) describe this method as a continuous process of taking information from the collected data and comparing it to other pieces of information from the collected data in order to identify themes or codes within the data. In the course of conducting these comparisons of information, the themes are further developed to the point where the research question will be answered by the refined themes. This study utilized the standard approach of data analysis formulated for grounded theory research as described by Creswell (1998). A three-step coding process of open coding, axial coding, and selective coding characterizes this method of constant comparative analysis.

Prior to beginning the analysis of the collected data, Berg (2001) states that all information must first be converted to text. With regard to this project, the text from the transcripts was broken into small segments that were printed on note cards after the transcripts were verified. In order to ensure that the text could be reassembled from the note cards and that the text could be cited accurately, the researcher developed a method of labeling the cards that identified which interview subject provided the information as well as where it fit with the other information provided by the interview subject. Thus, a card labeled with a PS3 identified the interview subject as the third postsecondary interview respondent. An "S" identified the interview subject as a secondary program administrator, and an "I" identified the interview subject as an instructor. Cards from each interview subject were then chronologically numbered to ensure that the interview could be accurately reconstructed and cited. For example, in citing the sources, PS1/31

means the information was retrieved from the 31st card of the first postsecondary interview. Documents that were cited in the findings were numbered in the upper right-hand corner. Thus, a citation of Document #2 means that the information was retrieved from the document labeled #2. This method of labeling provided a way to identify sources of data in the findings.

Once the data were converted to a text format and accurately labeled for reconstruction and citation purposes, the process of open coding began. In this phase of the coding process, phrases taken from the collected data text were placed with similar text phrases into initial categories or codes that relate to the research topic (Creswell, 1998).

After completion of the open coding, the researcher began the process of axial coding. During this phase of the data analysis, the researcher arranged the data in new ways in order to identify the central phenomenon, causal conditions, strategies, conditions and contexts, and consequences (Creswell, 1998). In essence, the researcher continued coding the information in order to identify major topics and subtopics associated with area dual credit programs. These subtopics relate to issues that have bearing upon or result from the major topic.

Once the axial coding was completed, the researcher began the selective coding process. In this phase of coding, the researcher linked all of the categories of the axial coding phase into a coherent structure (Creswell, 1998). In doing so, the researcher answered the research question regarding the characteristics of dual credit programs that promote sustained student participation and achievement.

Trustworthiness

Trustworthiness is an overarching term used to describe the extent to which the findings of qualitative study can be believed and trusted. Lincoln and Guba (1985) define trustworthiness in terms of credibility, transferability, dependability, and confirmability. Under this definition, a qualitative study must provide evidence that the data utilized for the study accurately reflect the information provided by the participants in order to demonstrate credibility. Likewise, transferability is judged based upon the extent to which the findings can be applied to other contexts and respondents. In addition, a qualitative study must provide evidence that the study could be replicated under similar conditions, and thereby, show dependability. Finally, confirmability is achieved when the researcher can demonstrate that the findings are not the result of researcher bias (Lincoln & Guba, 1985).

Despite the work by Lincoln and Guba (1985), other qualitative researchers have chosen to describe trustworthiness in various ways. Hendricks (2009) equates trustworthiness to the concept of validity and identifies at least nine differing forms of validity while Creswell (1998) favors using the term *verification* instead of *validity*. Eisner's (1991) sixth feature of qualitative studies describes trustworthiness or believability in terms of structural corroboration, consensual validation, and referential adequacy. Under Eisner's constructs, structural corroboration is achieved when multiple data sources are utilized to support the findings.

However the term may be defined, researchers agree on many of the strategies used to establish trustworthiness. For example, Hendricks (2009), Lincoln and Guba (1985), and Erlandson et al. (1993) all cite triangulation, peer debriefing, member

checking, reflective journaling, thick description, and maintaining an audit trail as some of methods for creating trustworthiness. The researcher utilized each of these strategies in order to establish trustworthiness for this study.

Triangulation

Hendricks (2009) describes triangulation as a process where multiple forms of data are collected through various means and analyzed in order to establish credibility and confirmability. This increases the process validity while decreasing the potential for researcher bias. Likewise, Eisner (1991) suggests that triangulation gives a study structural corroboration and coherence by providing multiple means of support to the interpretations made in the study. For purposes of this study, triangulation was achieved through the analysis interviews of secondary and postsecondary dual credit program managers and dual credit instructors as well as documents.

Peer Debriefing

According to Hendricks (2009), peer debriefing is a process where the researcher discusses the research with peers who are not associated with the study. Peers help the researcher by ensuring that the interpretations and conclusions are accurate, identifying alternate interpretations to the study, and spotting biases. To that end, peer debriefing addresses issues that increase the validity and confirmability of the research. Along the same lines, peer debriefing provides the consensual validation, referential adequacy, and consensus that Eisner (1991) identifies as elements required to develop believability. In this study, peer debriefing was conducted with the other individuals who are currently working on their specialist projects as well as Dr. Sharon Spall who served as the chairperson for the specialist project committee.

Member Checking

Lincoln and Guba (1985) identify member checking as the most important method of establishing credibility. Member checking is the process whereby individuals in the setting being studied have the opportunity to confirm the accuracy of interviews as well as interpretations and conclusions being made by the researcher. In addition to improving credibility or validity, Hendricks (2009) also suggests that member checking also increases confirmability by reducing researcher bias. For purposes of this study, member checks were conducted by providing transcriptions of each interview to the respective respondent. Each interview subject was then asked to confirm in writing the accuracy of their responses in order to establish credibility and confirmability for the study.

Reflexive Journal

Lincoln and Guba (1985) describe a reflexive journal as a diary where the researcher records information about the development of the study. The journal is not only a verification of the actions taken by the researcher, but also a memorandum of record where the researcher documents thoughts and reflections about the progress of the study. In this regard, the journal provides a written record of the rationale and insights the researcher had that impacted the development of the study. Hendricks (2009) suggests the journaling increases understanding thereby enabling the researcher to resolve problems and alter practices based upon the insights gained through reflection. With regard to this particular study, the researcher maintained a reflexive journal of actions, thoughts, insights, and reflections from September 2009 through completion of the study.

Rich, Thick Description

In order to improve transferability, Hendricks (2009) and Lincoln and Guba (1985) state that a researcher must describe the setting, subjects, and research methods of a study in as much detail as possible. By providing an accurate account of the site and study, readers will be able to determine if the characteristics described in the study are similar to their own situation. If the characteristics are comparable, then Hendricks (2009) suggests that transferability is increased. Along the same lines, Eisner (1991) identifies the use of interpretative character, expressive language, and attention to particulars as the third, fourth, and fifth vital features of qualitative studies. Each of these aspects, aides readers of the study by providing them with the necessary information needed to determine whether or not there exist a high degree of transferability with their own situations. In an effort to improve transferability, the researcher provided as much information as possible about the setting, subjects, and research methods of the study while still maintaining confidentiality.

Audit Trail

According to Hendricks (2009), an audit trail is a record of all data and materials collected and analyzed throughout the course of a study. Audit trails include the researcher's journal, artifacts, interviews, field notes, recorded information, and a record of how data were analyzed and interpreted. An audit trail enables others to look at the data and findings of a researcher and determine if the information and results are accurate. In this regard, audit trails improve the validity and confirmability of the study by verifying the accuracy of data and findings and thus ensuring the information reflects the setting and participants of the study. For purposes of this study, all the information

obtained by the researcher for this study was retained for inclusion in the audit trail. This information included all printed materials utilized in the literature review, the reflexive journal, documents, recorded interviews, verified transcripts of interviews, as well as data analysis and synthesis materials.

Findings

Introduction

Dual credit courses enable high school students to acquire college credit while still enrolled in secondary school. These programs are credited with providing a smooth transition between secondary and postsecondary education and rendering a rigorous curriculum to high school juniors and seniors that Adelman (1999) suggests is the best predictor of future degree attainment. In an effort to improve the standard of living and quality of life of residents in Kentucky, policymakers and educational leaders have increasingly turned to dual credit education as a means of improving the transition from high school to college and increasing postsecondary retention and graduation rates.

Research Problem

In 2000, the KCPE abolished the restrictive participation criteria it had established for dual enrollment programs in the state and granted the local school districts and postsecondary institutions the opportunity to develop their own articulation agreements regarding dual enrollment in the hopes that this would increase the number of students pursuing postsecondary education and consequently improve the quality of life for Kentuckians. While this policy change has resulted in a marked increase in the number of students participating in dual credit courses, a multi-year study conducted by the KCPE indicates dual credit programs did not substantially increase matriculation or retention rates (KCPE, 2006a).

Locally, wide variations in costs, admissions processes, and measures of academic progress exist in the dual credit programs that postsecondary institutions have developed with local school systems (ECTC, 2009). While these variations may suit the

individual needs of the local districts, the lack of consistency between dual credit programs raises concerns about the quality, access, and funding of these programs and calls into question whether or not locally designed dual enrollment programs can adequately prepare students to successfully transition to postsecondary education.

Research Purpose

In an effort to improve future local dual credit programs, research was conducted to identify the aspects of current area dual credit programs that promote student participation and improve student achievement. The purpose of this study was to identify the characteristics of dual credit programs operated by a local community college that support student participation and achievement. This study sought to gain specific detailed answers to the research question by examining documents and interviewing those people who have a thorough knowledge of these programs at the secondary and postsecondary level.

Research Question

In examining area dual credit programs, this research project addressed the following research questions from the perspective of secondary and postsecondary program managers and dual credit instructors who have participated in the local dual credit programs.

1. What are the features of the dual credit programs operated by the local community and technical college in conjunction with area school districts that support sustained enrollment and high achievement for students?
 - a. What are the strengths of the local dual credit programs?

- b. What are the barriers that have been encountered in the dual credit programs?
- c. What are the recommendations for the development and implementation of future dual credit programs in the area?

Program Descriptions

Postsecondary

Approximately 15-16 high schools operate within the community and technical college's 12-county service area (PS3/90). The service area is primarily rural; however, several small cities exist within the college's area of coverage. As of the 2008-2009 school year, the college had articulation agreements for dual credit with six different high schools (PS4/12). One of these schools is outside of the college's 12-county service area (PS3/23). Currently, 170 students are participating in dual credit courses offered by the college (PS4/46).

The development of the dual credit programs offered by the college has grown slowly over the last 10 years or so (PS1/1) "as service to local high school students" (PS1/7). The college has not actively solicited agreements, and deals primarily with requests from local secondary schools. This is due in part to the fact that dual credit education has not been a strong initiative of the college (PS1/5-12).

In order to enroll in dual credit courses, high school students must apply for admissions to the college and meet all conditions for acceptance, as would any other students wishing to enroll in the college (PS3/43). As a state-supported college, the KCTCS and CPE determine what minimum test scores are required for a college student to enroll in a particular course (PS4/75). These same requirements also apply to students

who intend to dually enroll. For example, a student must have an 18 on the English section of their ACT in order to enroll in English 101 (PS1/55). If they do not meet the minimum requirement on the ACT, then a student can take the COMPASS exam in order to demonstrate the minimum competency required for entry into the course (PS3/50). If the student does not demonstrate the required minimum score on the COMPASS exam, then the college will not allow the student to enroll in the course (PS3/52). Additional admissions criteria may be imposed on students by their respective secondary schools (S1/10).

All dual credit courses offered by the college are general education courses such as English 101, English 102, and college algebra that are completely transferable to any state supported college in the state (PS4/45). In addition, these courses are offered to dual credit students at 50% of the regular cost of tuition (PS1/16; PS4/88). Once enrolled, dual credit students “have all the rights and responsibilities and access to anything that we offer any other student” (PS1/71) such as access to tutoring, library services, and computer labs (PS1/72). Some dual credit courses that have been offered include English composition, oral communication, art history, studio art, music, music appreciation, and philosophy (PS2/2-3) as well as European history, psychology, sociology, speech, and college algebra (PS1/40).

Dual credit courses may be taught at the college or the secondary school by either college instructors or high school teachers who meet the minimum SACS requirements for teaching college level courses and undergo an interview process conducted by the college. SACS requires that college level instructors have a Master’s degree and a minimum of 18 graduate hours in their teaching discipline. In addition, prospective dual

credit instructors are interviewed just like adjunct professors. In the interview process, course competencies and student learning outcomes are addressed (PS2/11-27). In addition, potential instructors are provided “a course outline and a sample syllabus that they have to use” (PS2/28).

Secondary #1

The first program is located in a medium-sized high school of approximately 1,000 students in a small town that is near a large metropolitan area. The school actually offers three different dual credit programs to its students (S1/1). The one offered by the postsecondary institution under study is the only one that is offered on the school’s campus and is the longest running of the three programs (S1/3) having been operating for a period of 12 years (I1/1). This program is also out of the community college’s 12-county service area (PS3/23). The instructor who is provided by the college teaches four or five courses a semester for the college (I1/25) as well as English 101 and 102 at the school. He is currently teaching two sections of English 102 at the school with a total enrollment of 44 students. These courses are only open to seniors. In addition to the admission requirements imposed by the college, the school implements a 3.0 GPA as a condition for enrollment in the dual credit courses (S1/3-10).

Because the course is taught by an employee of the college, “The class only meets twice a week” (S1/30). As a result, dual credit students do not get a high school English credit for the course, but instead receive an elective credit at the school in addition to the college credit (S1/11). In addition, the school weights grades for the dual credit courses “so that they [the students] get five points for an A and four points for a B” (S1/127).

With regard to instruction, the instructor teaches the course just like his college courses on campus (I1/30). He states, “I use the same curriculum that I use in 101 and 102.... We have the same ... exit competencies, and we use the same textbooks.... They write the exact same type of papers” (I1/28). The instructor feels that “getting them as close as I can to the college experience” is an important aspect of the course (I1/22). This sentiment is confirmed by the counselor who states, “He does treat it like a college course” (S1/54).

Secondary #2

The second program is located in a relatively large high school with an enrollment of approximately 1,600 students in a town with a population of roughly 25,000. Unlike the first program, the school, not the college, provides the instructor for the dual credit courses. The instructor teaches dual credit Western Civilization as well as AP U. S. History at the school. In addition, she also teaches history courses for the college. She currently has 33 students enrolled in the dual credit Western Civilization course, and finds that most of her AP students go on to take the dual credit Western Civilization course (I2/2-33).

With regard to instruction, this program differs from the first program in that “we meet every day” (I2/21). Consequently, “We meet far more times than ... my college class” (I2/22). Also, unlike the first program, grades are not weighted for the dual credit course (I2/24). Like the first program, the instructor tries to “teach it pretty much like I teach my college class” (I2/10). She does this “so that they [the students] really understand what to expect when they go to college” (I2/11).

Also, like the first program, the school has had a self-imposed GPA requirement of 3.25 for admittance into the dual credit program (I2/3). Unlike the first program, “There is no GPA requirement as of this year” (I2/8). As a result of the elimination of the GPA requirement, the instructor states, “Academically my students are not as strong as I have had” (I2/9). Consequently, “I have mostly A’s and B’s in the dual credit class, until this year.... I’m going to have several C’s this time” (I2/7).

High Achievement

During the coding process, three specific areas emerged as features of dual credit programs that promote student achievement. These areas are criteria for admission into the dual credit program, the safeguards utilized to ensure academic rigor, and instructor traits.

Admissions Criteria

Although the KCTCS has lowered the requirements for enrollment in dual credit courses (PS1/53), all interview subjects identified the admissions criteria either directly or indirectly as a strength of the program. As previously stated, students interested in taking dual credit courses must apply to the college and be accepted as would any regular college student before they can enroll in classes (PS2/48). This means that “they have to apply for admissions; they have to be accepted for admission...they need to have a letter of recommendation from their counselor; [and] they need to have the appropriate test scores from their counselor” (PS3/43). Thus, students who wish to enroll in English 101 must have a minimum score of 18 on the ACT in order to enroll in the class (PS1/55; PS2/35). If the students do not meet the minimum requirement on the ACT, then they can take the COMPASS exam in order to demonstrate the minimum competency required for

entry into the course (PS3/50; I2/8). If they do not demonstrate the required minimum score on the COMPASS exam, then the college will not allow them to enroll in the course “because they do not have the necessary academic skills to be successful” (PS3/52). Two interview subjects at the college expressed concerns about the possibility of letting students who do not meet the minimum requirements for enrollment in dual credit courses. One stated that if low-performing students are “having difficulty in high school, they don’t need to take a dual credit class because that’s just going to set them up for even more failure” (PS4/82). Another subject stated “It is a disadvantage to a student if we say you are dual credit ready, and we give you your college credit, and you start off your college GPA with a D” (PS1/38).

In addition to the admissions criteria imposed by the KCTCS, the secondary schools may have additional requirements for admission into the program. For example, one of the schools in the study currently requires students to have at least a 3.0 GPA in order to enroll in dual credit courses (S1/10). The other school had required to students to have at least a 3.25 GPA until this year in order to enroll in dual credit courses (I2/3). This past year that policy was dropped at the school, and there was no minimum GPA requirement (I2/8). Consequently, the instructor stated, “I have students other than what I have had and I do find they make a little lower grade” (I2/7).

As an added safeguard, the college encourages “the high school counselors to pick students [for dual credit] that ... will be successful” (PS1/54). According to another employee of the college who is involved with dual credit, “The counselor at the high school does a lot of work by screening or sifting through those students who are maybe on the fence” (PS3/44).

As a result of the work by high school counselors and the admissions criteria set forth by the college and the high schools, the instructors of the dual credit courses at both secondary schools expressed satisfaction with the level of academic aptitude exhibited by the students in their respective classes. According to one of the instructors, “The students I’ve had are very well-prepared to do well...in the college English course” (I1/24). The other instructor states that most of the students who take her dual credit history course have already taken AP U. S. History course from her (I2/2). Consequently, “They’re very competitive with their grades, and ... they knew what they were getting into when they came. So, it’s kind of kind of a follow up ... the reason I think I have a lot of success” (I2/4).

Academic Rigor

In examining the aspects related to academic rigor, three themes emerged as being central to the topic: SACS requirements, the interview process initiated by the college, and the review of course competencies and student learning outcomes.

SACS requirements. According to SACS, a potential dual credit instructor must “have the exact same credentials as the faculty member that would teach on the college campus, which is a master’s degree with 18 hours in the discipline in which they are teaching” (PS2/11). Two of the other interview subjects at the college reiterated this requirement (PS1/43; PS4/18). Both dual credit instructors in the study are faculty at the college (I1/27; I2/20), and therefore, meet the SACS requirements for teaching dual credit courses.

Interview. Once potential dual credit instructors are selected, they are “put ... through an interview just like we would if we were interviewing an adjunct professor to

teach for us” (PS2/17). “Before an instructor starts a class they meet with the division chairperson on this campus and also a faculty member who teaches this class to go over what their syllabus looks like and what their expectations are” (PS1/44). In addition, dual credit instructors are provided a course outline (PS2/28). This interview is done to ensure that standards are maintained in the dual credit class (PS2/19), and “to make sure the class is the same class as if they were taking it here on campus” (PS4/27).

Course competencies and student learning outcomes. In addition to SACS requirements and the interview process, the KCTCS has established course competencies for all courses taught at the community college (PS2/22). Department heads meet with the dual credit instructor to go over the course competencies (PS2/21). “Those competencies are then measured by student learning outcomes to see if we are indeed teaching the competencies that we should be teaching” (PS2/24). The students in dual credit courses are required “to meet the same student learning outcomes as other college students” (PS1/47). The importance of competencies in dual credit classes is confirmed by the English instructor who states, “I use the same curriculum that I use in 101 and 102 and usually the English faculty ... discuss this exactly. We have the same ... exit competencies and we use the same textbooks” (I1/28). The division chair at the college felt that “course competencies and the student learning outcomes” were vital in ensuring “the same kind of rigor that we would require at the college campus” (PS2/33).

Instructor Traits

With regard to the instructors of dual credit courses, tenure, faculty expectations, and course structure and content were identified as instructor attributes that positively impact student achievement. “Most of the instructors we have here ... [have] usually

taught for us for quite a while” (PS4/114). Of the two secondary programs studied, both instructors have taught the dual credit courses for 10 or more years (PS1/1; I1/1). In addition, both instructors also teach regular postsecondary courses for the college (PS2/63, I2/20).

While instructor tenure does not appear to impact achievement directly, it was cited as impacting the consistency of expectations for the course. One instructor stated, “I’ve been there long enough they know pretty much what to expect from me. They’ve heard from the counselors and the ... English teachers and the other students ... what’s going to be expected of them” (I1/12). The other instructor stated, “I think it is definitely an asset because I know them ... when they walk in, they know me, they know what I expect, and I know what they’re capable of” (I2/17). “They know I expect the best from them and high ideas ... they achieve” (I2/6).

With regard to structure and content, both instructors teach their respective dual credit courses exactly as they would the regular courses they teach for the college. The instructor at the first program stated, “I use the same curriculum ... exit competencies, and we use the same textbooks.... They write the exact same type of papers” (I1/28). The high school counselor corroborated his assertions by stating, “He does treat it like a college course” (S1/54). “The research and writing that they do in there is above and beyond what we teach” (S1/59). The instructor at the second program also conducts her dual credit class in the same manner. “I teach it pretty much like I teach my college class” (I2/10). Continuing she stated, “I try to give them a feel for what college is like test wise ... syllabus, everything ... so that they really understand what to expect when they go to college” (I2/11).

Sustained Enrollment

According to one postsecondary official who is associated with dual credit education, the college does not “have a specific directed program in dual credit” [education] (PS1/4), but offers dual credit “as a service to the local high school students” (PS1/7) when requests are submitted by local high schools (PS1/9). Although the college has not actively promoted dual credit education with area secondary school (PS1/50), the programs operated by the college in conjunction with local schools have experienced growth over the last several years. According to one interview subject at the college, dual enrollment has increased 20% from 2002-2009 (PS4/12). Current enrollment in dual credit programs operated by the college stands at 170 students (PS4/46). The interview subjects identified several features as important characteristics of the dual credit programs that promote sustained enrollment. Primary features that promote participation include admissions criteria, savings of time and money, instructor traits, and program promotion.

Admissions Criteria

As previously mentioned, the admissions criteria for dual credit was determined to be a key feature that promotes student achievement; it was, however, also identified by several of interview subjects as a critical component of sustaining enrollment. Although the KCTCS has lowered its admission criteria for dual credit as a means of boosting enrollment (PS1/53), many interview subjects expressed the quality of students and the continued success students experience in the dual credit courses as a reason for sustained enrollment. One of the interview subjects at the college stated, “That’s pretty much the predominate thing that drives this program. The students are pretty self-driven, they’re

self-reliable, so it's not some of these students who are procrastinators" (PS3/32). One of the instructors referred to her students as "eager to participate" (I2/3). She continued by stating, "They're very competitive with their grades" (I2/4). The other instructor stated, "These kids come in that are well prepared to take a college course.... They're strong in their basics, and they seem, generally, to be very interested in things going on in the world" (I1/8). This sentiment was confirmed by the secondary program administrator who stated, "Most kids get A's and B's always. And they're smart kids. They should" (S1/56). To illustrate why this was important to sustained enrollment, she stated, "If they were making C's or D's, that would kill it [the dual credit program]" (S1/118).

Instructor Traits

As with the admission criteria, instructor traits were also identified as features of the dual credit programs that not only promote student achievement but also ensure sustained student participation. One of the instructors referred to "the duality of being both the gatekeeper and the friend of the students" and how it is important to maintain that balance (I1/33). The secondary program administrator reiterated this idea by stating the "course instructor is just so key in being able to relate to the kids and still challenge them" (S1/119). She stated, "I think if you had a ... really stern ... somebody that didn't relate well to the kids.... If one of them were here, it would kill it" (S1/115). The other instructor corroborated this belief by stating, "You just can't be hard-nosed" (I2/32).

The secondary program administrator attributed the sustained enrollment of the dual credit program at her school directly to the way the instructor deals with the students. "When I was an English teacher, he used my classroom, and I used to sit in sometimes on it [the dual credit class], and he is so fabulous with them" (S1/53). She

continued by saying, “[He has] got a great balance of stimulating their mind but not killing them on their marks” (S1/118). According to her, the students look forward to being able to take his course during their senior year (S1/114), and enrollment in the course has increased to two sections with a total of 44 students (S1/6).

Time and Money Savings

With regard to time and money savings, all of the postsecondary interview subjects as well as the secondary program administrator identified these savings as one of the important features of the programs that promote student participation in dual credit programs. One college interview subject stated, “They want to get ... a head start on their peers” (PS3/29). He continued, “They want to accomplish two things at one time. They want to get high school graduation credit and they also want to get college credit” (PS3/30). In this regard the student eliminates academic redundancy and thereby saves time.

In addition, tuition for dual credit courses is 50% of regular college tuition (PS1/74; PS4/88), and currently stands at \$186 for a 3-hour course (S1/68). The counselor went on to state, “I think obviously the money is a huge, huge attractor” (S1/116). Summing up, one college interview subject stated, “The biggest strength is that student ... is actually getting high school credit and college credit, which in turn saves that student and that student’s parents potential funding” (PS3/8). The savings of time and money are reiterated by another interview subject at the college who stated “The advantage to that [dual credit] is these students ... would save time and money” (PS2/53).

Program Promotion

As previously stated the college does not actively solicit agreements with local secondary schools for dual credit. The college has developed dual credit programs at the request of area schools as a service to their students. As a result, promotion of dual credit opportunities is left to the local secondary schools and high school counselors (PS1/4-51). “Information comes from the high school counselors to promote and advertise” (PS1/58).

With regard to promotion of the program, the program manager at the secondary school stated the following:

The three of us counselors ... do scheduling talks, classroom visits ... in March before we do scheduling for the next year, and we promote it heavily.... We also have parent night, junior parent night, where we promote it heavily, as well. (S1/66-69)

Additional promotional information including handouts and letters are provided to students and parents that explain the dual credit program (S1/69).

Word of mouth was identified as another aspect of program promotion (PS1/58). Two of the interview subjects specifically mentioned student communication as a means of program promotion (PS3/39; S1/117). The secondary program administrator stated, “I just really think it’s the word of mouth from the kids ... from year to year ... they talk about [it]” (S1/117).

Program Strengths

In discussing local dual credit programs, interview subjects identified admissions criteria, academic rigor, and instructor traits as characteristics that promote student

achievement in the programs under study. Likewise, the same subjects identified admission criteria, instructor traits, savings of time and money, and program promotion as characteristics that promote sustained enrollment. These characteristics were also identified by the interview subjects as strengths of the programs in the study. In an effort to reduce redundancy, the researcher will only present additional strengths of the programs as identified by the interview subject that have not already been addressed as characteristics that promote high achievement and sustained enrollment.

Collaboration

Although communication is identified as a weakness of the area dual credit programs, several interview subjects referred to the collaboration that exists between the personnel at the college and the area schools as a strength of the programs. One administrator at the college stated, “Once it’s set up and once the registration part [is completed], I think we do communicate real well” (PS1/27). Another subject at the college reiterated this assertion by saying, “Once we get it established, the dialogue and the collaboration.... They pretty much just run with it” (PS3/24). The same respondent stated, “The initial upstart and the initial interaction with everybody is a little bit time consuming and a little task driven, but once its up and running and we have everything in place, it’s a very successful program” (PS3/94-95).

Specifically, interview subjects cited two-way interaction between the high school counselors and the college counselors once the programs are implemented. One stated, “The counseling office [at the college] ... does a really good job of working with counselors at the high school to talk about what kind of dual credit we offer” (PS2/39). She continued, “If we have an idea that there is something we would like to offer ... we

can pick up the phone and call the counselors at the high school and say, ‘Do you have a need for this?’” (PS2/41). On the other hand, she stated, “I think more often than not you see the high schools calling us and saying, ‘We are interested in offering dual credit. What can we reasonably provide to our students?’” (PS2/42). This sentiment is corroborated by another interview subject at the college stated, “We have such a good rapport with the [high school] counselors ... that they’re they ones usually that will institute or instigate the meeting [to develop a dual credit course]” (PS3/21).

Student Development

In addition to the savings of time and money, interview subjects at the college cited dual credit as a means of academically challenging students during their senior year while those interview subjects at the secondary level felt that dual credit courses helped with the development of maturity in participating students. With regard to academics, one college interview subject stated, “I think that the strength of the dual credit program is that it challenges those students who are not being challenged academically” (PS2/9). Another expounded upon this by saying, “It also academically challenges that student at that particular high school during their senior year” (PS3/10). The third college interview subject stated, “Dual credit really helps with those high school students who are ready for the challenge” (PS4/36). She continued by saying, “It’s good experience ... especially for students that need the challenge” (PS4/117).

At the secondary level interview subjects focused on the development of maturity as a major strength of the program. In admitting to initially having a bias against dual credit in favor of AP courses, the secondary program administrator stated, “I’ve changed over the last couple of years because I have found that the kids who take the dual credit

classes are more prepared for college” (S1/132). She continued by saying, “By the time they graduate ... they just have a better idea of what to expect” (S1/135). The instructor reaffirmed the assertion that the dual credit courses help develop maturity by stating, “I think this helps these students mature a great deal” (I1/45). He continued by saying, “I think if they can get this under their belt when they ... get on the regular campus, then they’re less likely to freak out and just drop” (I1/41).

Accessibility

Interview subjects also identified accessibility to services such as tutoring and media services as a strength of the program. One respondent at the college stated as follows:

Well, once they’re a student, they have all the rights and responsibilities and access to anything that we offer any other student. So, if they want tutoring, we have free tutoring. If they want the media and library services, they can have the library services. If they want to use our computer labs, they can use our computer labs. (PS1/71-72)

Access to these services was confirmed by a second respondent who stated, “They do have access to any services we have here” (PS3/57).

Another subject at the college stated, “We have ... a learning lab that provides remedial assistance with writing, math, and with reading” (PS4/86). She continued, “They also have access to our library” (PS4/87). Access to the labs was confirmed by another college respondent who stated, “We also have on our campus mathematics and English tutorial help that’s for all students” (PS3/54). Although students have access to

these services, he continued, “Some students being ... thirty to fifty miles away from us would choose not to exercise that option because of the distance” (PS3/55).

In addition to the services provided to all students on the campus, the college has attempted to reach out and offer dual credit services to secondary institutions that are not in close proximity to the college. One college interview subject stated, “We tried a distance-learning model ... which was pretty effective where we had a facilitator in the classroom, but the instructor delivered the course via the distance learning web” (PS2/37). Another respondent stated, “We’ve tried some unique things like interactive television” (PS3/22). The college has also attempted to provide online assistance to students who are too far from the college to take advantage of the services provided on the campus. One interview subject pointed to the use of mymathlab.com by college algebra students and blackboard for English students as examples of these online services (PS3/80-81).

Miscellaneous

In addition to the aforementioned strengths, the interview subjects also identified other features of the dual credit programs as strengths such as transferability of courses and transportation. Although these aspects were not emphasized as much by the interview subjects as some of the other features, the researcher felt that it was prudent to mention them. When asked about strengths of the programs, two college interview subjects referred to the transferability of credit. One stated, “We only offer transferrable gen. ed. [general education] courses” (PS4/45). The issue of transferability as a strength reiterated by a second respondent at the college who stated, “That credit because they’re gen. ed. [general education] courses and above the 100 level are going to transfer

(PS3/31). In identifying additional strengths of the program, one of the instructors pointed to transportation and stated, “There is none because they’re already at school” (I2/12). The secondary program administrator at the other school confirmed this as a strength by stating, “[It’s] right here in our building. We love it” (S1/90).

Program Barriers

Although participants expressed general satisfaction with the dual credit programs, respondents identified a number of barriers that were encountered in the development, implementation, and maintenance of these programs. In particular, interview subjects expressed concerns regarding the organizational structure of the programs, inefficient communication, logistical problems, and difficulties in securing qualified instructors as major barriers. In addition, respondents also pointed to tuition costs, a lack of remedial dual credit courses, and competition as other impediments to implementing and developing these programs.

Organizational Hierarchy

In examining area dual credit programs, three college interview subjects identified the organizational structure at the college as barrier to these programs. With regard to organization at the college, one respondent stated, “The weakness of the program is that we’re a little bit disorganized because we don’t have a direct one person in charge” (PS1/11). In addition, he stated, “It’s not a college driven...or administratively driven program. It’s not a strong initiative of the college” (PS1/12). He continued by saying, “There are three or four people involved in the program here” (PS1/18). To illustrate the point, he stated the following:

So by the time [your school] would call me and say I want a dual credit class, and by the time I get to the academic dean and say is it okay, and the academic dean gets to the division chair and says do you want to offer this and the division chair finds an instructor at the high school or some place to do the class, by the time all that happens ... the high school gets frustrated with us—with our process a little bit—and says they're not really interested in helping us. Which is really not the case, but I can see where it appears that way. (PS1/24-26)

Along the same line, another interview subject from the college stated the following:

I've often thought sometimes it might be good if one person handles it all, but I think that would be difficult because colleges are not set up in that way.... It would be hard for one person to do it all because it's hard for one person to know everything that's ... required in dual credit when so many aspects of it change. (PS4/98-99)

Communication

The college interview subjects unanimously identified communication between the college and the secondary schools as a barrier to the implementation and maintenance of dual credit programs. One of the college interview subjects flatly stated, "The main barrier would be communication" (PS3/11). This assertion was corroborated by another respondent who stated, "I think one of the biggest problems might be ... the communication ... between the school and the ... college" (PS2/25). Another subject reiterated the point by stating, "We haven't communicated very well who to contact. So they may contact [this] person and they say well I don't do that part of it you need to

contact so and so” (PS1/19-20). The final respondent illustrated the point by stating, “Sometimes that [communication] gets to be a challenge because at that point I’m out of the [communication] loop ... but they’ll ask me some student affairs questions ... that I don’t know because I work on the academic side” (PS4/26).

In addition to the previously mentioned organizational problems identified at the college, two interview subjects felt that a lack of organization existed at the secondary level as well that inhibited communication. One stated, “Communication is kind of difficult at times because so many people at the high school are involved.... They don’t have one person to designate in charge either” (PS4/104). She continued by stating, “Sometimes that’s a problem. Sometimes they don’t get the information out in a timely way ... to the students to make it go as smoothly as it could” (PS4/106). Another stated, “When you get 14 people involved in the process, a lot of times, the information gets convoluted or just turned completely around” (PS2/71).

Lastly, one instructor also pointed to communication between the college and instructors as a major barrier. She stated, “I think [the college] needs to work ... and communicate more ... with their teachers so that they’re on board ... they know what PeopleSoft is and ... how to install grades in it ... and this kind of thing” (I2/28).

Logistics

In the course of conducting the interviews, respondents identified several logistical problems that inhibit the implementation and development of dual credit programs. At the college level, respondents identified paperwork and the need to be cost effective as barriers to the programs while the secondary administrator felt that issues

related to the schedule, staffing, and space were logistical problems that had to be addressed.

With regard to paperwork, one college interview subject stated that a barrier in implementation is “making sure the college receives all the information in a timely fashion” (PS3/15). The opinion was corroborated by another college official who stated, “I think that has been a real challenge—is getting paperwork in on time” (PS2/74). To illustrate the problem, a third interview subject at the college referred to issues regarding the paperwork by making the following statements:

When are grades due ... when’s the syllabi due, when’s the ACT scores due, when is the students’ applications due, when should they have tuition, and where does it go because ... all of those items are going to different offices. Tuition comes here, applications, ACT test scores go to student affairs, it’s not just a complete packet that comes at one time. (PS4/111)

With regard to costs, an official at the college declared, “Another barrier ... is how to find a middle ground for it to be cost effective for us to offer dual credit and cost effective for the students and the high schools to offer dual credit” (PS2/13). Issues related to costs were confirmed by another interview subject at the college who stated, “From our end the financial thing is the obstacle. Recovering the tuition costs, recovering faculty members to go out and teach the class” (PS1/107-108). To explain the problem, he stated the following:

For an on-campus class, we say we need 12-15 students. So, when we take one of our full-time faculty and send them to [a high school] to teach

eight dual credit students. If we do that, then we have a class on campus not covered. (PS1/109)

At the secondary level, the program administrator described “a logistical nightmare” caused by the fact that the dual credit course at their school only meets on Tuesday and Thursday (S1/36). As a result, “We’ve got these high school seniors on Mondays, Wednesdays, and Fridays with nothing to do” during the time when their dual credit course is offered (S1/31). To address this problem, “We assign them to what we call a second home...but keeping up with where they are ... is a headache” (S1/36). Another issue raised by the counselor was the lack of space in most secondary schools. She stated that adding a dual credit course “kicks a teacher out” of their room during his or her planning period (S1/111). The last barrier identified by the secondary program manager related to problems of equality with regard to class sizes and planning time that might arise if the school provided the dual credit instructor (S1/105-106).

Qualified Instructors

In addition to organization, communication, and logistics, the interview subjects identified securing qualified personnel to serve as instructors in dual credit courses as another area of concern. Three respondents indicated that this was a major impediment in the implementation and maintenance of the programs. One college interview subject stated, “I think generally one of the things that is a barrier to any dual credit program is faculty credentialing” (PS2/10). A second college respondent confirmed this by stating, “Probably the greatest challenge that we have in doing dual credit is ... finding qualified teachers” (PS4/17). She continued, “Because our enrollment on campus is increasing ... we’re having trouble even making our classes on campus, our regular classes, much less

expanding this too” (PS4/20). She also pointed to another challenge by stating, “We have problems where an instructor would ... retire completely and we wouldn’t have anyone who was qualified and we weren’t able to offer it” (PS4/73). The problem with securing qualified instructors was reiterated by the secondary program manager who stated, “Staffing ... you would have to ... [have somebody] in the building who’s qualified to teach” (S1/102). She continued by saying, “There might be qualified staff in the high school and that would be perfect ... or they’re going to have to call out and call the college and find a staff member” (S1/107).

Tuition Costs

Although dual credit courses are offered at 50% of the regular tuition (PS1/74; PS4/88), the costs associated with tuition and books were identified as barriers to these programs. When asked to identify barriers to the development and implementation of dual credit programs, one participant at the college stated, “From the student’s perspective ... probably funding” (PS3/71). Another postsecondary respondent corroborated this opinion by stating, “One barrier is money, in general, the cost” (PS2/77). She continued, “Many of these students, even those that are honors students, at our underserved high schools don’t have the money to pay for tuition. They don’t have the money to pay for the books” (PS2/78-79). Books for one of the dual credit classes offered ran approximately \$140 new or \$105 used (Document #7).

According to the personnel interviewed at the college, this is a problem because students enrolled in dual credit courses are not eligible for any type of financial aid. One respondent at the college stated, “Well, right now, [dual credit] students are not eligible for federal financial aid if they’re still enrolled in high school” (PS1/78). He continued,

“They’re not able to use their KEES money [Kentucky Educational Excellence Scholarship] for dual credit” (PS1/80). The lack of financial aid options available to dual credit students was confirmed by another interview subject at the college who stated, “Dual credit students since they are technically still enrolled in high school are not afforded any financial aid opportunities whether it’s PELL [grant] or the Cap Grant or their KEES money because they’re technically not graduated from their high school” (PS3/61).

Remediation

Although most interview subjects did not identify remediation as a barrier to the development and implementation of dual credit programs, one respondent was emphatic in her belief that this was a shortcoming. She stated, “I think another barrier is ... this underachieving population” (PS2/82). She continued by stating the following:

I feel very strongly that we’re doing a disservice to these folks and I think the barrier to that is admitting we have failed these people somewhere along the line and for whatever reason they’re not prepared to go to college. (PS2/83)

Competition/Other Options

Competition was identified as a final barrier to the implementation and development of dual credit programs. One college respondent stated, “I think another ... barrier ... is that you have so many people hocking their wares that you might end up with a high school that’s having dual credit delivered from three or four institutions” (PS2/85). As a result, “You don’t really seem to have ... this tight relationship that is necessary to make dual credit work” (PS2/85). One of the schools in the study currently

offers dual credit from three different postsecondary institutions (S1/1). Of the three programs, one has had no one sign up for it next year (S1/27).

Another official at the college explained that “Some [schools] are choosing not to explore dual credit ... for various reasons, they may have something else in place that takes the place of dual credit” (PS3/91). He continued by saying that the college “may be close enough to certain high schools that another option is more conducive to their students than dual credit” (PS3/92). A final interview subject at the college said, “Some of the schools just aren’t very interested in it at all” (PS4/115).

Recommendations

In the process of examining the recommendations for the improvement of local dual credit programs, two major themes emerged: streamline the organizational hierarchy and improve communication. In addition, respondents also expressed a desire to expand dual credit by offering more courses, providing remedial dual credit courses, and increasing enrollment in SEEK.

One Person in Charge

As previously stated, the organizational hierarchies in place at the college and to some extent at the secondary schools were considered to be barriers to the development and implementation of the local dual credit programs. In making recommendations to eliminate these barriers, interview subjects pointed to the need to have one person serve as the head of the programs. One college respondent stated, “We’re a little bit disorganized because we don’t have a direct one person in charge. It’s not a college driven program if you want to call it that or administratively driven program” (PS1/11-12). He continued, “The college has not identified one main person to direct this

program” (PS1/21). He continued, “We need one person to be the liaison between us and the high schools. We need one person to coordinate it and make sure everything is functioning the way both people want it to function” (PS1/91-92). Another official at the college shared this belief by stating, “It would be nice ... if we have one person who had the time to devote only to dual credit” (PS4/22). A third college respondent not only felt the college should designate one person to head program but also felt the high schools should do the same by saying, “What I would suggest for the high schools that would be most beneficial to them is to designate one person as the dual credit coordinator” (PS2/70). She continued, “They can do a better job working with the colleges ... and they can focus in on making sure the details are worked out and all of the massive amounts of paperwork are done in time” (PS2/73). She added, “From the college perspective, I would tell you it is the exact same thing” (PS2/74). She concluded by saying, “If we had one contact person here ... and they have one contact person—those two people would begin talking” (PS2/86).

Improve Communication and Program Promotion

By placing one person in charge of the dual credit programs at the college and secondary schools, most interview subjects felt communications would be improved, and the college could more effectively promote its dual credit program. One college respondent stated, “We need to work on this process together. We need to get students ready for the workforce and whatever they want to do” (PS1/68). He continued as follows:

If we have one person in charge, then to me, that’s saying we want this program to grow and be successful. Therefore, this person would have the

time and energy to go to the different high schools and say this is what we can do, let's talk. They could do a better job of that. (PS1/96-97)

Another interview subject at the college expressed a similar opinion by exclaiming the following:

I think if we have one person that was designated as being in charge of dual credit and was promoting dual credit and out visiting the high schools and working with their liaison [at the high school level], I think she would find that connection and just go...zoom! And I think it would explode at that point in time. (PS2/75-76)

The idea of a liaison as a means to improve communication was also expressed by one of the instructors. She stated, "I think there needs to be some type of liaison ... or something between the two" (I2/26). She continued, "I think ... [the college] needs to work ... and communicate more ... with their teachers so that they're on board" (I2/28).

With regard to program promotion, one of the college participants stated, "My recommendation...would be to have more and more communication to get more and more high schools in our area involved in it as an opportunity" (PS3/68). He continued, "Getting the communication out there, getting involved and out there with schools that currently don't participate in our area would be the best way to ensure more participation" (PS3/69-70). Another college subject shared a similar opinion by stating, "I think that better promotion ... would help the participation more" (PS2/91). One final college respondent stated the following:

I think it would be real beneficial if this college, whoever this person is [that is in charge of dual credit] would meet with either a group of local

counselors or a group of local principles or superintendents and just have the initial conversation...about what do you want and what can we do to help you provide it, and where do you want your programs to go at the high schools. (PS1/112-113)

Expand Dual Credit Opportunities

In terms of recommendations, interview subjects were unanimous in their desire to see an increase in dual credit opportunities. At the college level, the first interview subject stated, “I think ... it’s a good opportunity for the right students” (PS1/31). He continued, “I think the high schools ... are very interested in dual credit.... I think the superintendents are very supportive of dual credit at least in the county schools anyway” (PS1/99-100). The second college participant stated, “I think they’re wonderful. I think we need to do more of them” (PS2/99). The third postsecondary subject stated, “It’s a win-win situation for everybody if we just get more and more high schools involved in looking at it as an opportunity for their students” (PS3/96). The final interview subject at the college felt that “it’s a wonderful opportunity for students ... to start their college career, start thinking about what they’re going to do, and get started” (PS4/115).

Likewise, at the secondary level, all participants expressed positive comments about dual credit and the need to expand offerings. The secondary program administrator stated, “It works so beautifully” (S1/87). She continued, “[The college is] right here in our building. We love it” (S1/90). One of the instructors said, “I think I would offer them ... if they [the schools] wanted more and ... [the college] wanted more” (I1/37). He continued as follows:

I wouldn't mind seeing them have ... a literature course and ... maybe a history course because these kids ... they're ready for ... college work and I think so many seniors get in there and they know they're going to graduate and they just take a year off and I think this would get them, they're prepared for college, but this would even make them more prepared for college. And math courses.... A literature course would be valuable, [and] an introduction to humanities course I think would be valuable. (I1/38-39)

The second instructor stated, "I wish they'd had it when I went to school or even my children.... I just think it's a really ... good program for kids to be introduced to college ... and ... get their college credit" (I2/36-37).

Underserved Populations and Remediation

Despite the interest in promoting and increasing dual credit opportunities, two of the interview subjects at the college expressed reservations about potentially offering dual credit to students who do not meet the required enrollments guidelines such as underachieving and low-performing students. One respondent stated, "I think it's a ... good opportunity for the right students" (PS1/31). He continued, "I think ... the integrity ... is a big issue as far as how far this dual credit thing needs to go. And of course that's from the college point of view—protect the integrity of the courses" (PS1/36). That being the case, he expressed concern over allowing access to low-performing and underachieving students who did not meet the minimum admissions criteria for dual credit classes. He stated, "I think it is a disadvantage to a student if we say you are dual

credit ready, and we give you your college credit, and you start off your college GPA with a D” (PS1/38).

A second interview subject at the college expressed similar concerns. She said, “I hesitate to say that I would really want to market to at-risk students ... for dual credit because we have some average students who enroll in dual credit and some of those fall into trouble” (PS4/81). She continued, “If a ... [low performing] student is having difficulty in high school, they don’t need to take a dual credit class because that’s just going to set them up for even more failure” (PS4/82). She concluded by saying, “They need the foundation before they enroll in dual credit” (PS4/118).

Despite these concerns, the college is looking at the possibility of offering remedial dual credit courses to underperforming students. One college respondent stated, “I think we ought to reach out to these students that are going to be transitional students” (PS2/100). In an effort to reach out to those students, another college respondent stated the following:

We’re in the process of thinking about and maybe offering...remedial reading and writing at the high school level. So that when a student graduates from the high school they don’t have to come here and take basic/remedial courses before they’re ready for English 101. So our English people and our reading people are thinking about offering dual credit reading course and dual credit English courses at the high school.
(PS1/62-64)

Another postsecondary interview participant reaffirmed the move by the college by stating as follows:

We've had some dialog ... in offering dual credit transitional education so that we could find a way to remediate ... those students before they ever got to us, so that they would be able to then be fast tracked right on into the college level courses the same as ... the honors student who has the appropriate ACT scores. (PS2/52)

The interview subject pointed to an inherent problem in developing a dual credit remediation program by stating, "Colleges and the high school are uncomfortable with the fact that they are turning out high school seniors that do not meet basic college level competencies" (PS2/54). She continued, "It's a touchy kind of thing, but we do have a plan in place as soon as a school is ready to do it" (PS2/56).

Grow SEEK

Securing Educational Excellence in Kentucky (SEEK) is a program for students who live in a county that does not have access to an Area Technology Center. These students can enroll in 1 of 11 different technical programs at the college during their senior year at no cost (Document #3). One college interview subject stated, "We don't call that dual credit ... but it's basically dual credit ... [because] they're getting high school credit and college credit" (PS1/126). He continued, "They come here ... and take a vocational program and do their English IV here and next year we're going to offer math since they have to have four years of math" (PS1/125). Another college respondent corroborated this information by stating, "We do teach high school English on campus.... But, other than that, they pretty much stay with us all day and take tech courses" (PS4/5-6). She continued, "They'll take some other additional gen. ed. courses, usually math because they need the math skills to be successful in the technical programs" (PS4/7).

Currently, 39 students are participating in the program (PS4/2). Students enrolled in the program generally attend the college full-time during their senior year (PS4/4).

In discussing SEEK, one respondent stated as follows:

We think that program is going to grow.... It's a really good opportunity too for high school kids. They can get a year of college at no cost to them ... then they come here for one year—two years they have their associate degree in welding, plumbing, or automotive technology, or information technology, or electricity, or whatever. (PS1/137-139)

He continued,

You can make good money, make a good living, be very happy and successful in that track.... I know when I hire a plumber and I have to pay him 70 dollars an hour to say 'you've got a leak ... and for another 150 I'll fix it for you.' (PS1/141-143)

Another interview at the college extolled the benefits of SEEK by stating, "They can go to college ... get an associate's of applied science degree in a technical field and that ... is going to increase their living wage tenfold ... and there are lots of wonderful jobs out there" (PS2/93). A third interview subject at the college points to SEEK as "a different route on the career ladder. It's, it's just another opportunity for people, and I think the more opportunities they have, the better" (PS4/34). She continued as follows:

A 4-year degree is not always the right path for every student.... I believe ... if they can work with their hands and they can learn how to apply math and learn it ... doing it, they can get a job and a lot of those students come back and get 4-year degrees later. (PS4/30-31)

Discussion and Implications

The intent of this project was to identify the features that promote high achievement and sustained enrollment of two local dual credit programs that are offered at secondary schools in conjunction with the local community and technical college. Ancillary outcomes of the project were to identify additional strengths of these programs as well as weaknesses and gather recommendations from the interview subjects that would aid in the development, implementation, and maintenance of future dual credit programs in the area.

Although the findings appear to indicate that the local dual credit programs do promote high achievement and sustained enrollment through a variety of means, results suggest that designating individual dual credit program coordinators at the secondary and postsecondary levels would improve communication, decrease logistical problems, and increase the potential for program promotion.

Discussion

In examining features that promote high achievement, participants identified the admissions criteria for dual credit enrollment, the safeguards utilized to ensure academic rigor, and instructor traits. Although the KCPE abolished the restrictive participation criteria for dual credit programs in the state and now allows local school districts and postsecondary institutions the opportunity to develop their own articulation agreements (KCPE, 2006a), participants in the study pointed to the obligation for dual credit students to meet college entrance requirements (PS2/48), self-imposed GPA requirements at the secondary level (S1/10), and screening by counselors at the secondary level (PS1/54; PS3/44) as part of the admissions process that ensures high levels of academic

achievement. The data suggest that the self-imposed GPA requirement and counselor screening process are vital in maintaining a high level of academic achievement.

With regard to academic rigor, respondents identified SACS requirements for dual credit instructors, the interview process, and course competencies and student learning outcomes as key features in promoting high levels of student achievement. As previously stated, a dual credit instructor must “have the exact same credentials as the faculty member that would teach on the college campus” (PS2/11). This ensures that the instructor has the same background knowledge as a regular college instructor. The interview is done “before an instructor starts a class...to go over what their syllabus look like and what the expectations are” (PS1/44), and “to make sure the class is the same class as if they were taking it here on campus” (PS4/27). Lastly, dual credit courses are expected to cover the same course competencies and produce the same student learning outcomes as regular college courses (PS2/24).

In examining the dual credit courses, both instructors identified high expectations and course structure as aspects that promote high levels of achievement. Both instructors also expressed that they expected high levels of academic performance by their students (I1/12; I2/6). In addition, both stated that they taught their dual credit courses exactly like they did their regular college classes (I1/28; I2/10). Again, the data suggest that the instructor is instrumental in ensuring high levels of achievement.

With regard to sustained enrollment, interview subjects identified the admission criteria, instructor traits, savings of time and money, and program promotion as key features of the dual credit programs. Although the KCTCS has lowered its admission criteria for dual credit as a means of boosting enrollment (PS1/53), the interview subjects

identified the quality of students being selected for dual credit and the academic success these students experience as a major reason for the sustained enrollments of the programs in the study. As the secondary program administrator stated, “If they were making C’s or D’s, that would kill it” (S1/118).

As with admissions criteria, the instructor’s demeanor was also identified as being a vital aspect of ensuring sustained enrollment. Respondents stated that the ability of the instructor “to relate with the kids and still challenge them” (S1/119) was instrumental in improving enrollment in dual credit courses. Interview subjects also stated that an instructor with a stern demeanor would negatively impact enrollment (S1/115; I2/32).

Interview subjects cited the savings of time and money that result from participation in dual credit courses as one of the major factors that promote sustained enrollment in the local dual credit courses. Tuition for dual credit courses through the college is 50% of the regular tuition (PS1/74; PS4/88). In addition, students who take dual credit courses earn both high school and college credit at the same time (PS3/30) and thereby eliminate academic redundancy when they actually go on to college.

Although the college does not promote the dual credit programs, the counselors at one of the secondary schools push the dual credit programs (S1/66, 69). In addition, respondents also cited student-to-student communication as a means of program promotion that ensured sustained enrollment (PS3/39; S1/117).

In pointing out the strengths of the local dual credit programs that were not already identified as features that promote student achievement and sustained enrollment, respondents pointed to collaboration, student development, and accessibility as strong

points of the programs. In addition, some participants also pointed to the transferability of credit and the fact that transportation was not required as additional strengths.

Although communication was also identified as a weakness of the dual credit programs, several participants felt that after the initial upstart the collaboration between the secondary and postsecondary institution was a strength of the program. In particular, respondents pointed to the interaction between the counselors at the high school and the college (PS2/39; PS3/21).

Besides saving time and money, several interview subjects also mentioned additional benefits that students garner as strengths of the programs. Specifically, respondents mentioned that students are academically challenged during their senior year (PS2/9; PS3/10; PS4/36,117). In addition, subject also felt that dual credit students were more mature and better prepared for college (S1/132; I1/45).

Participants also cited student accessibility to services as another strength of the local dual credit programs. Dual credit students are afforded access to all of the services that are available to any regularly enrolled student at the college (PS1/71; PS3/57). Such services include access to counseling, tutoring, media services, and computer usage. In addition to the on campus services, the college has also attempted to reach out to those students who do have access to on campus services through such means as interactive television (PS2/37; PS3/22) and online services (PS3/80-81).

In addition to the above-mentioned strengths, interview subjects also pointed to the transferability of credit and transportation as other strong points of the programs. Two respondents stated that all dual credit courses were transferable to any other state supported postsecondary institution (PS4/45; PS3/31) while two other participants

pointed to the fact that transportation is not an issue because the courses are delivered at the high schools so additional transportation is not necessary (I2/12; S1/90).

In identifying barriers to the dual credit programs, respondents cited the organizational hierarchies at the college and high schools, communication, difficulties finding qualified instructors, logistics, costs associated with tuition and books, issues related to remediation, and competition. Without question, barriers related to the organizational structures at the college and secondary schools and communication were the greatest concerns of the respondents. Currently, three to four people at the college deal with dual credit (PS1/18), and the college has not identified anyone to head the program (PS1/11-12). According to two of the respondents, the high schools also have multiple people dealing with dual credit (PS2/70; PS4/104). As a result of these fractured organizational structure, communication suffers. As one respondent stated, “When you get 14 people involved in the process, a lot of times the information gets convoluted or just turned completely around” (PS2/71).

Other major concerns relate to logistics and securing qualified instructors. With regard to logistics, postsecondary respondents expressed concerns over getting paperwork in on time (PS3/15; PS2/74) and the need to provide dual credit in a cost effective manner (PS2/13; PS1/107-108). At the secondary level, the program administrator referred to issues such as coverage, staffing, space as barriers to the program (S1/31,105-106). Like logistics, staffing was a problem that was identified by respondents at the secondary and postsecondary level (PS2/10; PS4/17; S1/102).

In addition to the barriers addressed above, respondents also referred to tuition costs, issues related to remediation, and competition as other barriers to developing and

implementing dual credit. With regard to costs, one participant specifically mentioned the challenge that students of low-income households might face even though the courses are offered at a reduced rate (PS2/78-79). Continuing along similar lines, the same respondent felt that the lack of access to dual credit by underachieving students was a barrier to the programs (PS2/82-83). Lastly, a couple of interview subjects identified competition from other dual credit programs (PS/85), alternatives to dual credit (PS3/91), and a lack of interest in providing dual credit (PS4, 115) as other obstacles to the programs.

In making recommendations to improve area dual credit programs, respondents identified the need to streamline the organizational hierarchies of the dual credit programs, improve communication, and develop more dual credit opportunities for area students. In addition, respondents also expressed a need to improve access to underserved populations and promote SEEK.

Subjects at the college expressed the need to designate one person at the college as the dual credit coordinator (PS1/91-92; PS2/74; PS4/22). In addition, subjects at the college also felt that the high schools would benefit by identifying one individual to head the program (PS2/70; PS4/104). By placing one person in charge of the dual credit programs at the secondary and postsecondary levels, most interview subjects felt that communication would be improved substantially and the programs could function more efficiently (PS1/96-96; PS75-76). In addition, respondents felt that a single coordinator could do a better job promoting the program and could, thereby, increase the number of students who participated in dual credit (PS2/91; PS3/69-70).

Despite the reservations expressed by some of the postsecondary respondents about offering dual credit to underachieving students (PS1/38; PS4/82), the college is looking into developing remedial programs for low performing students (PS1/62-64; PS2/52). In addition to developing the remedial programs, three of the college interview subjects extolled the benefits of SEEK and suggested it as a viable alternative to the current dual credit offerings at the college (PS1/137-143; PS2/93; PS4/30-31).

Implications

After reviewing the collected data, three central themes emerge that have bearing upon both current and future dual credit programs in the area. These themes are to establish a dual credit coordinator to improve communication, logistics, and program development; to expand offerings in schools that already offer dual credit as well as initiate programs with new schools to offer dual credit; and to ensure that the quality of the programs is maintained.

First, and foremost, if the college and local secondary schools are seriously committed to offering quality dual credit programs to area students, institutions at both levels must designate a dual credit coordinator who handles all aspects of the program. At the college level, this should be a full-time position. At the secondary level this position could be an additional role assumed by a counselor. The elimination of a large bureaucracy at both institutions would improve communication and the flow of paperwork between and within the institutions. In addition, logistics would be improved because decisions affecting dual credit could be made more efficiently.

Secondly, in addition to improving communication, the dual credit coordinator at the college could more effectively promote the program in the surrounding communities

and high schools in the college's service area in order to develop programs with secondary institutions that do not currently offer dual credit. In addition to promoting the dual credit classes offered at the secondary schools, the college coordinator could also promote the SEEK program that is offered at the college. Likewise, secondary program coordinators could more efficiently promote their programs within their respective schools, and thereby improve participation.

Finally, in increasing participation and expanding offerings, the college must work to ensure that the academic rigor and the quality of the dual credit courses are maintained. As one respondent stated, "I think it's important for colleges to maintain standards and expectations of those students and the integrity of the course and the integrity of what the college is trying to do" (PS1/32). He continued, "The bottom line...is when a student completes dual credit, they know the information so they can be successful at the next program, next class, next college" (PS1/120). In particular, the postsecondary program coordinator will need to work with the division chairs at the college as well as the secondary program administrators to identify and secure potential instructors who have the necessary qualifications to teach dual credit courses. The need to locate and secure quality dual credit instructors and maintain course integrity is vital if the local community and technical college continues to develop its remedial offerings to local underachieving students.

Relation of Findings to Relevant Literature

In examining the findings, participants addressed issues that relate to the barriers to postsecondary enrollment as well as several of the major barriers and benefits of dual credit education that have been identified in previous research. The following sections

will examine how the findings of this study relate to the previous research identified in the literature review.

Barriers to Postsecondary Enrollment

In examining relevant literature, three main barriers to improving postsecondary enrollment were identified in the literature review: senior slump, underserved populations, and cost deterrents. Adelman (1999) found that the academic rigor of a student's secondary education was the greatest predictor of that student's academic persistence and degree completion in college. Previous researchers also point to academic rigor as a benefit of dual credit education that combats the senior slump (AASCU, 2002; Andrews, 2004; Boswell, 2001; ECS, 2001; Greenburg, 1989). In addressing issues related to the senior slump, several of the participants in this study emphasized the importance of maintaining the academic rigor of the courses (PS1/32; PS2/11-33, PS3/36-38; PS4/68-69) and pointed to the fact that the dual credit courses challenge students during their senior year (PS2/9; PS3/10; PS4/117).

Second, with regard to underrepresented and underprepared students, respondents at the college stated that they were in the process of developing remedial programs for underprepared students so that they could enter college and be on track with their peers who did not require remediation (PS1/62-64; PS2/49-56, 82-84, 92-93, 100-103). Previous research suggests that students who do not require remediation in college have significantly higher degree attainment rates than those students who need remediation upon entering college (Adelman, 1999). In addition, a study by the KCPE (2006b) also suggests that remediation at the secondary level would improve persistence rates for minorities.

In addition to developing a remedial dual credit program, the college in this study has attempted to deliver dual credit to underserved rural populations that do not live within close proximity of the college via interactive television (PS2/37; PS3/22). This method of delivery is similar to that described by Gertge (2008). In addition, Boswell (2001) and the ECS (2001) point to dual credit as a means of providing greater academic opportunities to rural students.

Third, according to the APA (2007), tuition increases have hindered the ability of Kentuckians to afford postsecondary education. In 2008, average tuition costs at 2-year institutions in Kentucky were higher than any other SREB state and 45% higher than the national average (SREB, 2009). In addition, the ECS (2001) identified tuition costs as a barrier to low-income students. By reducing tuition costs for local dual credit courses by 50% (PS1/16; PS4/44, 88), the issue of affordability has been addressed by the college, at least in part. Also, those students who choose to participate in the SEEK program pay nothing for the dual credit courses taken through the college (PS1/138, Document #3).

By providing dual credit opportunities to local high school students at a reduced rate and by attempting to reach underserved rural students, the college is addressing all three of the major barriers to postsecondary enrollment that are identified in the review of relevant literature.

Dual Credit Barriers

In examining the findings, participants addressed several of the major barriers of dual credit education that were identified in the literature review. In particular, respondents spoke to the barriers related to faculty qualifications and course quality, enrollment restrictions, transferability, and dissemination of information.

Although Boswell (2001) and the AASCU (2002) identify the quality of programs being offered and qualifications of secondary educators to teach postsecondary courses as major concerns, the interview subjects considered the safeguards in place to ensure the academic rigor of the dual credit courses to be a particular strength of the program. Teachers must meet the SACS requirements for teaching at the college level. In addition, teachers must go through an interview process where expectations are reviewed. Lastly, teachers are expected to cover course competencies that are demonstrated through student learning outcomes (PS1/43-47; PS2/11-33). This appears to address the concerns that Chapman (2001) expresses over faculty qualifications that he feels must be tackled in order to develop a quality dual credit program. With regard to instructors, the only concerns that were expressed were actually finding enough qualified instructors to teach the dual credit courses (PS2/10; PS4/17).

In addition to concerns about course and faculty quality, Boswell (2001) and the AASCU (2002) point to issues related to enrollment restrictions and course transferability as other potential problems with dual credit. While the interview subjects stated that the KCTCS and CPE had lowered the enrollment criteria for dual credit, a couple of respondents stated that the college encouraged high school counselors to pick only those students who might be successful as candidates for dual enrollment (PS1/53-54; PS3/44-47; S1/8-9). In addition, one subject stated that the secondary school implemented and self-imposed GPA requirement for admissions into dual credit courses (S1/10). While the counselor selection process and self-imposed GPA requirements appear to ensure high levels of achievement, these enrollment criteria do appear to be exclusionary. With regard to transferability, two interview subjects stated that all dual credit courses are

transferable to any state supported postsecondary institution (PS3/31; PS4/14-15, 45). Welsh et al. (2005) confirm these assertions.

Based upon previous research, a major obstacle to the implementation of dual credit programs is the availability of information (ECS, 2001). Although interview subjects identified the delivery of information as a problem with the local dual credit programs, the respondents felt that designating dual credit coordinators at the secondary and postsecondary level would alleviate this problem. Respondents asserted that information regarding dual credit could be distributed more effectively and efficiently if one person was in charge of each program (PS1/90-97; PS2/70-76; PS3/11-14; PS4/98-99, 104).

Dual Credit Benefits

In examining local dual credit programs, the respondents addressed topics related to savings of time and money as well as communication and collaboration that were identified in previous research as being benefits of dual credit education. While research indicates that tuition costs are a barrier to postsecondary enrollment (APA, 2007; ECS, 2001), interview subjects universally pointed to the savings of time and money that are afforded those students who choose to participate in dual credit (PS1/33; PS2/7; PS3/8,30; PS4/14). As previously stated, tuition for dual credit courses is 50% of the regular cost of tuition (PS1/16; PS4/44, 88). Thus, local dual credit students are able to earn high school and college credit at the same time at a reduced rate. The assertions by the respondents are corroborated by several previous studies that suggest that dual credit saves time and money by reducing academic redundancy and lowering the number of

courses that students have to take in college (AASCU, 2002; Boswell, 2001; ECS, 2001; Greenburg, 1989).

Another benefit of dual credit education identified by researchers is improved communication and collaboration between the secondary and postsecondary institutions. Researchers indicate that this improves the academic rigor that is needed to combat the effects of the senior slump (AASCU, 2002; Boswell, 2001; ECS, 2001; Greenburg, 1989). Although interview subjects felt that academic rigor of the courses was sufficient, many of the respondents expressed the need to have one individual at the secondary and postsecondary levels designated as a dual credit coordinator. Participants felt that in doing this, communication and program promotion would be improved immensely (PS1/112-117; PS2/70-76; PS3/11-12, 15-16, I2/25-28).

Personal Reflections upon Contributions to Professional Practice

In reflecting upon my experiences in completing this project and the knowledge I have gained through researching local dual credit programs, I feel that I have grown substantially both professionally and academically. In the process of carrying out this research, I have been able to reconcile my need to feel professionally productive with my desire to learn. I feel that I have produced a useful study that will be beneficial both to those who wish to improve current local dual credit programs as well as those who might be interested in developing new programs in the future.

To Professional Growth

With regard to my professional growth, I feel that I have developed a much deeper understanding of the background and growth of dual credit education in Kentucky and the roles of the Kentucky Council on Postsecondary Education and the Dual Credit

Task Force in developing these programs. I now feel more than ever that dual credit education is of the utmost importance in ensuring a high quality of life for the vast majority of Kentuckians in the future. With that in mind, I would like to not only continue research in the field of dual credit education, but also become an active participant in the promotion, implementation, and development of these programs in the local area and Kentucky as a whole.

To Research Understanding

As a result of completing this project, I feel that I have a much deeper understanding and appreciation of this type of research. I found the readings I did on qualitative research to be informative and insightful. Through the literature I gained a much better understanding of the methods utilized to instill trustworthiness through such means as member checking, journaling, peer debriefing, and maintaining an audit trail. The readings in conjunction with actually constructing this research project enabled me to gain a more thorough comprehension of how to construct worthwhile qualitative research that will only be heightened as I continue to do this type of inquiry.

In particular, I found the processes of gathering the information for the literature review and from interview subjects, writing the literature review, and coding extremely worthwhile in not only developing my understanding of the topic but also developing my understanding of how to assimilate such a vast multitude of information into a meaningful and coherent structure. As a result of completing this project, I now feel much more confident in my abilities as I look to pursue the next step in my educational development, a Doctorate in Higher Education Administration.

Topics for Further Investigation

In the course of completing this project, several potential issues warrant further investigation. Looking to the future, the potential for research exists regarding the following topics:

1. An investigation into the effectiveness of secondary dual credit instructors versus postsecondary dual credit instructors. In the course of this study, the postsecondary instructor felt it was to his advantage to come into the schools versus a high school instructor who taught dual credit at the school (I1/46-50) while one of the college respondents felt that “dual credit faculty are stronger when they are high school faculty because they are used to dealing with that population of students” (PS2/96).
2. An investigation of participation rates at secondary schools that weight grades in dual credit courses versus schools that do not weight grades.
3. An investigation into the financial aid options available to dual credit students at other institutions both in the state and nationally.
4. A longitudinal study of the effectiveness of SEEK as a means of enabling students to successfully transition from school to the workplace.

Summary

Dual credit has been identified by the KCPE as a means of increasing the number of students pursuing postsecondary education and thereby improving the quality of life for Kentuckians. By abolishing the restrictive participation criteria the KCPE had established for dual enrollment programs and allowing local districts and postsecondary institutions the opportunity to develop their own articulation agreements regarding dual

enrollment (Kentucky Council on Postsecondary Education, 2006a), community colleges such as the one in this study now serve many Kentuckians as a point of access for higher education (Welsh et al., 2005).

The intent of this study was to identify those characteristics that promote achievement and participation in local dual credit programs. In addition, interview subjects were asked to identify additional strengths and barriers in the local dual credit programs as well as provide recommendations for the development and implementation of future programs. After conducting the research, the overriding themes that emerged were the need to designate a single dual credit coordinator at both the college and the high schools to improve communication, the desire to increase participation in the existing programs while expanding the program to area schools that do not already participate in dual credit, and the need to maintain the quality and academic rigor of the courses.

References

- Adelman, C. (1999). *Answers in the tool box: Academic intensity, attendance patterns, and bachelor's degree attainment*. Jessup, MD: U.S. Department of Education. (ERIC Document Reproduction Service No. ED 461363)
- Adelman, C. (2006). *The toolbox revisited: Paths to degree completion from high school through college*. Washington DC: U. S. Department of Education. (ERIC Document Reproduction Service No. ED 490195)
- American Association of State Colleges and Universities. (2002). *The open door: Assessing the promise and problems of dual enrollment*. State Policy Briefing 1(1). Washington DC: American Association of State Colleges and Universities. (ERIC Document Reproductions Service No. ED 481781)
- Andrews, H. (2003). *Progress in advanced placement and international baccalaureate in SREB states. College readiness series*. Atlanta, GA: Southern Regional Education Board. (ERIC Document Reproduction Service No. ED 482273)
- Andrews, H. A. (2000a). Lesson learned from current state and national dual-credit programs. *New Directions for Community Colleges*, 2000(111), 31-39. (Academic Search Premier No. AN 9175129)
- Andrews, H. A. (2000b). *The dual-credit explosion in Illinois community colleges. Research brief*. Illinois Community College Board. (ERIC Document Reproduction Service No. ED 447851)
- Andrews, H. A. (2004). Dual credit research outcomes for students. *Community College Journal of Research and Practice*, 28(5), 415-422. doi: 10.1080/1066892049044445.

- Andrews, H. A., & Barnett, E. (2002). *Dual credit/enrollment in Illinois: A status report. In brief*. Champaign, IL: Office of Community College Research and Leadership, University of Illinois at Urbana-Champaign. (ERIC Document Reproduction Service No. ED 469782)
- Andrews, H. A., & Marshall, R. P. (1991). Challenging high school honor students with community college courses. *Community College Review*, 19(1), 47-51.
- Barnett, E., Gardner, D., & Bragg, D. (2004). *Dual credit in Illinois: Making it work*. Champaign, IL: Office of Community College Research and Leadership, University of Illinois at Urbana-Champaign. (ERIC Document Reproduction Service No. ED 495241)
- Berg, B. L. (2001). *Qualitative research methods for the social sciences* (4th ed.). Boston, MA: Allyn and Bacon
- Bogdan, R. C., & Biklen, S. K. (2007). *Qualitative research for education: An introduction to theories and methods* (5th ed.). Boston, MA: Allyn and Bacon.
- Boswell, K. (2001). State policy and postsecondary enrollment options: Creating seamless systems. *New Directions for Community Colleges, 2001* (113), 7-14.
- Bragg, D. D., Kirby, C., & Zhu, R. (2006). *Selected outcomes related to tech prep implementation by Illinois consortia, 2001-2005*. Champaign, IL: Office of Community College Research and Leadership, University of Illinois at Urbana-Champaign. (ERIC Document Reproduction Service No. ED 495247)
- Calhoun, C. C., & Finch, A. V. (1976). *Vocational education: Concepts and operations*. Belmont, CA: Wadsworth.

- Chapman, B. G. (2001). A model for implementing a concurrent enrollment program. *New Directions for Community Colleges, 2001*(113), 15-22. (Academic Search Premier No. AN 9175576)
- Clark, T. (2001). *Virtual schools: Trends and issues. A study of virtual schools in the United States.* (ERIC Document Reproduction Service No. ED 462923)
- College Board. (2002). *Opening classroom doors: Strategies for expanding access to AP.* Retrieved October 9, 2009 from http://www.collegeboard.com/prod_downloads/ipeAPCap04_openingdoors_35609.pdf
- College Board. (2008). *The 4th AP annual report to the nation.* Retrieved October 18, 2009 from <http://professionals.collegeboard.com/profdownload/ap-report-to-the-nation-2008.pdf>
- College Board. (2009). *The history of the AP program.* Retrieved October 9, 2009 from <http://apcentral.collegeboard.com/apa/public/courses/21502.html>
- Commonwealth of Kentucky Auditor of Public Accounts. (2007). *Recent tuition increases may prevent the achievement of the commonwealth's 2020 postsecondary education goals.* Retrieved October 9, 2009 from <http://www.auditor.ky.gov>
- Conklin, K., & Williams, J. M. (1990). The high school-college connection: Dual-credit programs. In E. H. Carter (Ed.), *Community College Journal for Research and Planning* (pp. 8-13). Washington, DC: American Association of Community and Junior Colleges, National Council for Research and Planning. (ERIC Document Reproduction Service No. ED 332733)

- Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, California: Sage Publications, Inc.
- Cunningham, C. L., & Wagonlander, C. S. (2000). Establishing and sustaining a Middle College high school. *New Directions for Community Colleges, 2000*(111), 41-51 (Academic Search Premier No. AN 9175158)
- Education Commission of the States. (2001). *Postsecondary options: Dual/concurrent enrollment*. Denver, CO: Education Commission of the States Center for Community College Policy. Retrieved October 23, 2009 from <http://www.ecs.org/clearinghouse/28/11/2811.pdf>
- Eisner, E. W. (1991). *The enlightened eye: Qualitative inquiry and the enhancement of educational practice*. New York: Macmillan Publishing Company.
- Erlandson, D. A., Harris, E. L., Skipper, B. L., & Allen, S. D. (1993). *Doing naturalistic inquiry: A guide to methods*. Newbury Park, CA: Sage.
- Elizabethtown Community & Technical College. (2009). *ECTC's electronic presentation of the SACS accreditation review documentation*. Retrieved October 23, 2009 from <http://www.elizabethtown.kctcs.edu/SACA/DocDirect/ATGPolicies.htm>
- Gertge, P. A. (2008). Analyses of dual credit in rural eastern Colorado. *Community College Journal of Research and Practice, 32*(8), 549-558. doi: 10.1080/10668920500442158
- Greenburg, A. R. (1989). *Concurrent enrollment programs: College credit for high school students, Fastback 284*. Bloomington, IN: Phi Delta Kappa Educational Foundation. (ERIC Document Reproduction Service No. ED 313936)

- Hendricks, C. (2009). *Improving school through action research: A comprehensive guide for educators* (2nd ed.). Upper Saddle River, New Jersey: Pearson Education, Inc.
- Hertberg-Davis, H., Callahan, C. M., & Kyburg, R. M. (2006). *Advanced placement and international baccalaureate programs: A "fit" for gifted learners?* Charlottesville, VI: The National Research Center on the Gifted and Talented, University of Virginia. (ERIC Document Reproduction Service No. ED 505379)
- Ingles, S. J., & Dalton, B. W. (2008). *Trends among high school seniors, 1972-2004* (NCES 2008-320). Washington, DC: National Center for Education Statistics, Institute for Education Sciences, U.S. Department of Education. Retrieved October 23, 2009 from <http://www.wku.edu/dualcredit/pdf/TrendsAmongHSSeniors7204.pdf>
- JBL Associates, Inc., & Educational Policy Institute. (2005, December). *College affordability in Kentucky*. Report prepared for the State P-16 Council of the Kentucky Council on Postsecondary Education, Frankfort, KY. Retrieved October, 9, 2009 from <http://cpe.ky.gov/NR/rdonlyres/1C71A0D8-68E6-4CAF-89A4-F774485D878B/0/IXAAffordabilityAttachReport.pdf>
- Kaye, R. D. (2006). *Progress in advanced placement and international baccalaureate in SREB states*. Atlanta, GA: Southern Regional Education Board. (ERIC Document Reproduction Service No. ED 492557)
- Kemple, J. J., & Rock, J. L. (1996). *Career academies: Early implementation lessons from a 10-site evaluation*. New York, NY: Manpower Demonstration Research Corp. (ERIC Document Reproduction Service No. ED 398401)

- Kemple, J. J., & Snipes, J. C. (2000). *Career academies: Impacts on students' engagement and performance in high schools*. New York, NY: Manpower Demonstration Research Corp. (ERIC Document Reproduction Service No. ED 441075)
- Kentucky Chamber of Commerce, Task Force on Postsecondary Education. (2007). *Task Force on Postsecondary Education*. Retrieved October 9, 2009 from <http://www.kychamber.com/docs/governmentaffairs/postsecondaryreport.pdf>
- Kentucky Community & Technical College System. (2009a). *Career pathways history*. Retrieved October 9, 2009 from http://www.kctcs.edu/System_Initiatives/Career_Pathways.aspx
- Kentucky Community & Technical College System. (2009b). *Career pathway initiatives*. Retrieved October 9, 2009 from http://www.kctcs.edu/System_Initiatives/Career_Pathways.aspx
- Kentucky Community & Technical College System. (2009c). *Elizabethtown community & technical college*. Retrieved October 23, 2009 from http://www.kctcs.edu/colleges_and_campuses/elizabethtown.aspx
- Kentucky Council on Postsecondary Education. (2006a). *The dual enrollment of high school students in postsecondary education in Kentucky, 2001-02 to 2004-05*. Retrieved October 9, 2009 from <http://cpe.ky.gov/NR/rdonlyres/702585EF-B63B-4D77-9E44-C4CE5C5FF21B/0/DualEnrollmentinKentucky306.pdf>

- Kentucky Council on Postsecondary Education. (2006b). *Underprepared students in Kentucky: A first look at the 2001 mandatory placement policy*. Retrieved October 9, 2009 from <http://cpe.ky.gov/NR/rdonlyres/5BA72241-5997-423D-85EC-FF7F3A847798/0/MandatoryPlacementRev806.pdf>
- Kentucky Council on Postsecondary Education. (2009). *The council on postsecondary education: Purpose and goals, powers and duties*. Retrieved October 18, 2009 from http://cpe.ky.gov/NR/rdonlyres/884DD40F-13ED-417B-AB0A-9B79641FC5FE/0/powersandduties_2009.pdf
- Kentucky Department of Education. (2007). *Articulation agreements*. Retrieved October 23, 2009 from <http://www.education.ky.gov/KDE/Instructional+Resources/Career+and+Technical+Education/Articulation+Agreement/>
- Kentucky Department of Education. (2009a). *Data, tools and resources credit-based transitions, AP, IB, and dual credit*. Retrieved October 23, 2009 from <http://www.education.ky.gov/KDE/Instructional+Resources/Secondary+and+Virtual+Learning/Credit+Based+Transitions/Resources.htm>
- Kentucky Department of Education. (2009b). *Kentucky virtual schools*. Retrieved October 23, 2009 from <http://www.education.ky.gov/KDE/Instructional+Resources/Secondary+and+Virtual+Learning/Kentucky+Virtual+Schools/>
- Kentucky P-16 Council. (2005, December). *2020 Educational attainment projections methodology*. State P-16 Council, Kentucky Council on Postsecondary Education, Frankfort, KY. Retrieved October 9, 2009 from

http://cpe.ky.gov/NR/rdonlyres/0FA61132-7142-478C-9BB9-B95C4791E3CC/0/2020_Projections.pdf

Kentucky P-16 Council. (2006, December). *Supporting Kentucky's eLearning ecosystem: Strategic plan of the Kentucky virtual university 2006-2009*. State P-16 Council, Kentucky Council on Postsecondary Education, Frankfort, KY. Retrieved October 18, 2009 from http://www.education.ky.gov/p16/Meeting_122006/VII-D%20%20P-16%20121206%20-%20Strategic%20Plan%20Executive%20Summary%20-%20Report.doc

Kentucky P-16 Council. (2009). *Frequently asked questions*. Retrieved October 23, 2009 from http://cpe.ky.gov/committees/p16/p16_faq.htm

Kentucky P-16 Council Dual Enrollment Task Force. (2006, March). *Dual enrollment task force, study, and preliminary survey results*. State P-16 Council, Kentucky Council on Postsecondary Education, Frankfort, KY. Retrieved October 9, 2009 from http://cpe.ky.gov/NR/rdonlyres/500F93E4-3F6B-4AEF-8081-ED5289758827/0/VIADualEnrollment__3_BAZELLEditsfollowingKDE.pdf

Kentucky P-16 Council, Interagency Task force on Dual Credit. (2008, June). *Action plan to pursue task force recommendations*. State P-16 Council, Kentucky Council on Postsecondary Education, Frankfort, KY. Retrieved October 9, 2009 from http://cpe.ky.gov/NR/rdonlyres/F10349DB-DC0E-4262-8F14-5E4FFA5D8AA6/0/5VAttachmentActionPlan_DualCreditV20.pdf

Kentucky Postsecondary Education Act of 1997, Additions to KRS 164 (1997).

Retrieved October 23, 2009 from

<http://www.lrc.ky.gov/recarch/97ss/HB1/bill.doc>

Kentucky Tech Prep. (2009). *Key services for students*. Retrieved October 23, 2009

from <http://kytech.ky.gov/KY%20TECH%20Fact%20Sheet2.pdf>

Kerka, S. (2000). *Career academies. In brief: Fast facts for policy and practice, no. 1.*

Columbus, OH: National Dissemination Center for Career and Technical

Education, The Ohio State University. (ERIC Document Reproduction Service

No. ED 477256)

Kim, E. (2006). *Academic pathways that promote student access and success. In*

brief. Champaign, IL: Office of Community College Research and Leadership,

University of Illinois at Urbana-Champaign. (ERIC Document Reproduction

Service No. ED 495221)

Kim, J., Kirby, C., & Bragg, D. D. (2004). *Dual credit: Then and now. In brief.*

Champaign, IL: Office of Community College Research and Leadership,

University of Illinois at Urbana-Champaign. (ERIC Document Reproduction

Service No. ED 495242)

King, J. E. (1996). *The decision to go to college: Attitudes and experiences associated*

with college attendance among low-income students. Washington, D.C.: College

Board. (ERIC Document Reproduction Service No. ED 398775)

Kirst, M. W. (2001). *Overcoming the high school senior slump: New education*

policies. Washington, DC: The Institute for Educational Leadership. (ERIC

Document Reproduction Service No. ED 455720)

- Kleiner, B., & Lewis, L. (2005). *Dual enrollment of high school students at postsecondary institutions: 2002-2003*. (NCES 2005-008) U.S. Department of Education. Washington DC: National Center for Education Statistics. (ERIC Document Reproduction Service No. ED 484632)
- KRS 158.622 (2002). Retrieved October 23, 2009 from <http://education.ky.gov/KYVSAAssets/KRS158622.pdf>
- KRS 160.348 (2002). Retrieved October 23, 2009 from <http://education.ky.gov/KYVSAAssets/KRS160348.pdf>
- Lekes, N., Bragg, D. D., Loeb, J. W., Oleksiw, C. A., Marszalik, J., Brooks-LaRaviere, ... Hood, L. K. (2007). *Career and technical education pathway programs, academic performance, and the transition to college and career*. St. Paul, MN: National Research Center for Career and Technical Education, University of Minnesota. (ERIC Document Reproduction Service No. ED 497342)
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage.
- Lord, E. (2000). New efforts at community colleges focus on underachieving teens. *Chronicle of Higher Education*, 46(43), 45-46.
- Lyon, P. R., Longnion, B., & Cougot, L. (1997). *North Harris Montgomery community college district articulation manual. Revised*. Houston, Texas: North Harris Montgomery Community College District. (ERIC Document Reproduction Service No. ED 409925)
- Maxwell, N. L., & Rubin, V. (2002). High school career academies and post-secondary outcomes. *Economics of Education Review*, 21(2), 137-152. doi: 10.1016/S0272-7757(00)000046-7

- National Alliance of Concurrent Enrollment Partnerships. (2009a). *Frequently asked question about NACEP*. Retrieved October 23, 2009 from <http://www.nacep.org/faq.html>
- National Alliance of Concurrent Enrollment Partnerships. (2009b). *NACEP Members by state and category*. Retrieved October 23, 2009 from http://www.nacep.org/members_state.html
- National Association of State Directors of Career Technical Education Consortium. (2002). *Career technical education: A national perspective. Results from a NASDCTEC survey of the state directors*. Washington, DC: National Association of State Directors of Career Technical Education Consortium. (ERIC Document Reproduction Service No. ED 473306)
- National Center for Public Policy and Higher Education. (2008). *Measuring up 2008: The national report card on higher education*. San Jose, CA: National Center for Public Policy and Higher Education. (ERIC Document Reproduction Service No. ED 503494)
- National Commission on the High School Senior Year. (2001a). *Preliminary report. The lost opportunity of senior year: Finding a better way*. (ERIC Document Reproduction Service No. ED 453604)
- National Commission on the High School Senior Year. (2001b). *Raising our sights: No high school senior left behind. Final report*. (ERIC Document Reproduction Service No. ED 459516)

- Peterson, M. K., Anjewierden, J., & Corser, C. (2001). Designing an effective concurrent enrollment program: A focus on quality of instruction and student outcomes. *New Directions for Community Colleges, 2001*(113), 23-31. (Academic Search Premier No. AN 9175567)
- Reese, S. (2002). Articulation agreements ease the way. *Techniques: Connecting Education and Careers, 77*(3), 37-38.
- Scott, J. L., & Sarkees-Wircenski, M. (2004). *Overview of career and technical education* (3rd ed.). Homewood, IL: American Technical.
- Shaughnessy, T. T. (2009). *An investigation of high school dual enrollment participation, year-to-year college retention levels, and bachelor's degree attainment within four years in the commonwealth of Kentucky* (Doctoral dissertation, Spaulding University). Available from ProQuest Dissertations and Theses database. (UMI No. 3356387)
- Smith, D. (2007). Why expand dual-credit programs. *Community College Journal of Research and Practice, 31*(5), 371-387. doi:10.1080/10668920600932884
- Southern Association of Colleges and Schools, Commission on Colleges. (2009, June). *Distance and correspondence education: Policy statement*. Decatur, Georgia: Author. Retrieved October 9, 2009 from <http://www.sacscoc.org/pdf/081705/distance%20education.pdf>
- Southern Regional Education Board. (2005). *Building transitions from high school to college and careers for Kentucky's youth*. Atlanta, GA: Southern Regional Education Board. Retrieved October 9, 2009 from

http://www.sreb.org/programs/hstw/publications/2005Pubs/05V24_CCTI_Kentucky.pdf

Southern Regional Education Board. (2009). *Kentucky featured facts for the SREB fact book on higher education*. Atlanta, GA: Southern Regional Education Board. Retrieved October 9, 2009 from

<http://www.sreb.org/main/EdData/FactBook/2009StateReports/Kentucky09.pdf>

Spurling, S., & Gabriner, R. (2002). *The effect of concurrent enrollment programs upon student success at city college of San Francisco: Findings*. San Francisco, CA: Office of Institutional Development, Research, and Planning. City College of San Francisco. (ERIC Document Reproduction Service No. ED 470634)

State of Washington, State Board for Community and Technical Colleges. (2006).

Running start: 2005-06 annual progress report. Olympia, WA: State Board for Community and Technical Colleges, State of Washington. (ERIC Document Reproduction Service No. ED 496209)

Stern, D., Dayton, C., & Raby, M. (2000). *Career academies: Building blocks for restructuring American high schools*. Berkeley, CA: Career Academy Support Network, Graduate School of Education, University of California at Berkeley.

(ERIC Document Reproduction Service No. ED 455445)

Stern, D., Dayton, C., Raby, M., Lenz, R., & Tidyman, S. (2000). *Issues in schoolwide application of career academies*. Washington, DC: Prepared by the Career Academy Support Network, University of California at Berkeley for Johns Hopkins University and the Office of Educational Research and Improvement,

U.S. Department of Education. (ERIC Document Reproduction Service No. ED 455447)

Stoel, C. F. (1988). History of the high school connection. *New Directions for Community Colleges, 1998* (63), 13-23.

Syracuse University. (2009). *Syracuse University project advance*. Retrieved October 23, 2009 from <http://supa.syr.edu/about.index.html>

Watts, A. L. (2001). *Education and the common good: Social benefits of higher education in Kentucky*. Frankfort, KY: Kentucky Long-Term Policy Research Center. Retrieved October 9, 2009 from http://www.kltprc.net/books/educationcommongood/education_and_the_common_good.pdf

Welsh, J. F., Brake, N., & Choi, N. (2005). Student participation and performance in dual-credit courses in a reform environment. *Community College Journal of Research and Practice, 29*(3), 199-213. doi: 10.1080/10668920590901158.

West Kentucky Community & Technical College (2009). *Celebration kicks off first of its kind Middle College in western Kentucky*. Retrieved October 23, 2009 from <http://legacy.westkentucky.kctcs.edu/gallery/middlecollege08/index.shtml>

Western Interstate Commission for Higher Education. (2006). *Accelerated learning options: Moving the needle on access and success*. Boulder, CO: Western Interstate Commission for Higher Education. (Eric Document Reproduction Service No. ED 494500)

Western Kentucky University. (2009). *WKU dual credit program: Cost for students*. Retrieved October 23, 2009 from <http://www.wku.edu/dualcredit/students.php#>

What Works Clearinghouse (Ed.). (2009). *Middle college high school. What works clearinghouse intervention report*. Institute of Education Sciences, What Works Clearinghouse. (ERIC Document Reproduction Service No. ED 504464)

