

Evaluation Plan for the State of Texas Education
Research Center at Texas A&M University

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RESEARCH
STUDY OF
DUAL-CREDIT
COLLEGE
COURSES IN
TEXAS



State of Texas
Education Research Center
at Texas A&M University



RESEARCH STUDY ON DUAL-CREDIT COLLEGE COURSES IN TEXAS

Purpose of the Research Study

Pursuant to Texas Education Code §1.005, the Texas Education Agency (TEA), in collaboration with the Texas Higher Education Coordinating Board (THECB), directs the Texas A&M University (TAMU) Education Research Center (ERC) to conduct a research study of dual-credit programs, as directed by House Bill 3646 of the 81st Texas Legislature.

Background Information

TEC 28.009 requires districts to offer a program under which students may earn up to 12 semester hours toward college credit while in high school (HS). One method for meeting this requirement is by allowing HS students to take college courses that also satisfy HS requirements (referred to as dual-credit courses). Currently, many of these courses are offered by community colleges. School districts and institutions of higher education (IHEs) create contractual agreements to offer dual-credit courses, with contracts varying in their degrees of specificity. An IHE may have multiple agreements with school districts it serves, and each agreement may be different. There are 50 community college districts (CCDs) in the state with one community college per CCD. Each community college may incorporate more than one community college campus. For the purposes of this study, only public school students attending public IHEs should be considered.

Research Questions

In support of this study regarding dual-credit college course expenditures, our study addresses four general contextual research areas to determine (a) the availability of dual-credit college courses to districts, schools, and students; (b) the types of dual-credit college course available to districts, schools, and students; (c) the enrollment in dual-credit college programs and courses by district and school;

and (d) the instructional delivery mechanisms of dual-credit college courses by institutions of higher education, districts and schools. After the development of a policy context for analysis, this research specifically will investigate expenditures associated with dual-credit college courses for institutions of higher education, districts, schools, and students. In support of this primary research question, four specific policy analyses will be conducted:

1. Researchers will use financial, enrollment, and survey response data from institutions of higher education, districts, and schools to estimate direct and indirect program expenditures associated with the multiple modes of dual credit delivery. Based on these analytical results, total and multi-modal program costs for institutions of higher education, districts, schools, and students will be estimated.

2. After initial contextual analyses are complete, dual-credit college course expenditures will be compared by type of institution of higher education, district size (e.g., stratified by enrollment), and district type, based on important sociodemographic characteristics (e.g., percentage of students who are classified as economically disadvantaged, English language learners, or traditionally underrepresented in higher education), school size, school type, and other policy relevant categories of interest.

3. After initial contextual analyses are complete, rates of participation in dual-credit college programs and courses will be compared by type of institution of higher education, district size (e.g., stratified by enrollment), and district type, based on important sociodemographic characteristics (e.g., percentage of students who are classified as economically disadvantaged, English language learners, or traditionally underrepresented in higher education), school size, school type, and other policy relevant categories of interest.

4. For schools that have small percentages of students (i.e., Less than 25 percent, 20 percent, 10 percent, 5 percent, or at zero) enrolling in dual-

credit college programs and courses, determinations as to what types of college preparatory programs (e.g., Advanced Placement or International Baccalaureate Programs) students are utilizing will be determined.

Ultimately, researchers will evaluate levels of cost effectiveness for the various modes of delivery for dual-credit college programs and courses and make recommendations to the state regarding (a) cost-effective strategies for expanding access to high quality, dual-credit courses and (b) the possibility of a statewide dual-credit system. The summary report will discuss (a) the cost-effectiveness of dual-credit college programs and courses, (b) the quality of dual-credit college programs and courses, and (c) strategies for ensuring the efficient use of state funds for dual-credit college programs and courses and will suggest policy improvements for promoting high quality--and access to high quality--dual-credit college programs and courses.

Research Design

This descriptive, causal-comparative study is being conducted in three phases. As such, univariate and multivariate statistical analyses will be conducted to examine each area of the research project. For example, univariate statistics--means, medians, standard deviations, ranges, percentiles, and t-scores--will be used to provide general descriptions of individual variables. Concomitantly, multivariate statistics--correlations, analyses of variance, factor analyses, and various types of ordinary least squares (OLS) regression analyses--will be used as necessary to describe general relationships among variables, generate scales, explain variability, and make inferences regarding dual-credit college programs and courses.

Phase 1 of the study will consist of a statewide online survey that focuses on high school principals' descriptions of the dual-credit college courses that are being offered in their schools. Phase 2 of the study will be based on results from the principal survey and will consist of three state-wide online surveys that focus on (a) financial data obtained from school district financial officers, (b) high school

counselors' reports of students' explanations of why they enroll or don't enroll in dual-credit courses, and (c) Texas college administrators' descriptions and reports of dual-credit courses. Phase 3 will consist of analyses from the ERC data warehouse and will examine actual costs and descriptive data on students who completed dual-credit college courses. Phase 1 will begin in spring of 2010 and Phase 2 will occur during fall 2010. Phase 3 is ongoing and will be initiated as soon as possible.

Table 1 provides a summary of the primary activities of this research study. The proposed research questions, data, methods, and timeline are included on the table.

Instruments/Measures & Procedures

The data warehouse from the State of Texas Education Research Center (ERC) at Texas A&M University will be used to examine the descriptive college-level, school-level, and student-level data. Under an interagency contract with TEA and THECB, the data warehouse at the ERC at TAMU includes both P-12 and higher education data. Student level data provided to the ERC, for example, includes attendance, achievement, disciplinary, and course completion records.

For Phase 1, we will develop two instruments: (a) an online survey that will be administered to all high school principals in Texas and (b) an online survey that will be administered to financial officers at all school districts in Texas that include secondary schools. These online surveys will address the identified research questions listed in Table 1. For Phase 2, we will develop an instrument to administer to all college and university administrators in Texas. This online survey will also address most of the identified research questions listed in Table 1.

We will use survey responses and financial, assignment, and enrollment data from school districts, community colleges, and universities to calculate the formula funding and other resource costs associated with each mode of dual-credit course delivery. We will then estimate total costs to the state and other parties (school districts, community colleges, and universities), based on the cost per pupil and

the number of pupils served for each mode of delivery.

We will evaluate the cost effectiveness of the various modes of delivery for dual-credit courses and make recommendations to the state regarding cost-effective strategies for expanding access to high quality dual-credit courses. Our final report will discuss the cost-effectiveness of dual-credit programs, strategies for ensuring the efficient use of state funds, and policies for promoting access to high quality dual-credit courses.

Principal Investigators

Lori Taylor, Anthony Rolle, Hersh Waxman, and Jacqueline Stillisano will be responsible for this project. They and other staff from the State of Texas Education Research Center at Texas A&M University will be responsible for (a) developing the research design, (b) designing the instruments, (c) organizing research activities, (e) preparing and writing reports, and (f) providing on-going feedback to TEA and project administrators.

Qualifications of Principal Investigators

Lori L. Taylor is an associate professor in the Bush School of Government and Public Service; a Program Area Leader for School Finance, Facilities, and Organizations in the State of Texas Education Research Center at Texas A&M; and an adjunct associate professor in Texas A&M's Department of Economics. She has written extensively on variations in the cost of education and recently developed a Comparable Wage Index for the National Center for Education Statistics (NCES). Professor Taylor's current projects explore differences in teacher quality among charter and traditional public schools, the impact of facilities on school productivity, and the effects of performance pay on teacher turnover and school productivity. Her work on school finance issues has been published in *The Review of Economics and Statistics*, *The Journal of Urban Economics*, *Education Finance and Policy*, and *The Journal of Education Finance*. She is a member of the NCES Finance Technical Review Panel, a member of the American Education Finance Association's Board of Directors, and a Research Affiliate of the National

Center on Performance Incentives at Vanderbilt University. Prior to joining the faculty at Texas A&M, Professor Taylor was a senior economist and policy advisor for the Federal Reserve Bank of Dallas. She holds a B.A. in economics and a B.S. in Business Administration from the University of Kansas, and an M.A. and Ph.D. in economics from the University of Rochester.

R. Anthony Rolle is associate professor and chair of the K-12 Educational Administration Program at Texas A&M University's College of Education and Human Development. He conducts research that explores and improves relative measures of economic efficiency for public schools. Concomitantly, his research explores and applies measures of vertical equity to analyses of state education finance mechanisms. Utilizing these techniques recognizes that demographic differences among communities affect organizational processes, and does not assume that all public schools have the same expenditure priorities. Dr. Rolle's work is published in books, journals, and monographs such as *To What Ends and By What Means? The Social Justice Implications of Contemporary School Finance Theory and Policy* (2007), *Modern Education Finance and Policy* (2007), *Measuring School Performance and Efficiency* (2005), *Journal of Education Finance*, *Peabody Journal of Education*, *School Business Affairs*, *School Administrator*, and *Developments in School Finance*. Dr. Rolle has conducted K-12 education finance and policy research for such organizations as the University of Washington's Institute for Public Policy & Management, the Washington State Legislature and Democratic House Majority Whip, the Indiana Education Policy Center, the National Education Association, the Texas House of Representatives' Office of the Speaker, the Office of U.S. Representative Jim Cooper (5th District - Nashville, TN) as well as agencies and commissions in Arkansas, Colorado, Missouri, North Carolina, South Carolina, and Tennessee. Formerly a member of the Board of Directors for the American Educational Finance Association (AEFA) and the 2002 AEFA Jean Flanigan Dissertation Award winner, Dr. Rolle received a Bachelor of Science in Political Science from Santa Clara University; a Master's

Degree in Public Administration from the University of Washington's Graduate School of Public Affairs; and, a Ph.D. in Educational Policy Analysis from the School of Education at Indiana University.

Hersh C. Waxman is director of the State of Texas Education Research Center at Texas A&M University and a professor in the College of Education and Human Development at A&M. He received the Distinguished Alumnus Award from the College of Education at UIC and Outstanding Research Awards from the American Educational Research Association, Southwest Educational Research Association, and the Society for Information Technology and Teacher Education. Waxman has published more than 100 research articles in journals such as the *International Journal of Educational Research*, *Learning Environment Research: An International Journal*, *Journal of Educational Research*, *Middle Level Research Journal*, *Bilingual Research Journal*, *Urban Education*, *Journal of Educational Computing Research*, and *Hispanic Journal of Behavioral Sciences*. He also has co-edited several books, including the following: *Preparing Quality Educators for English Language Learners* (Lawrence Erlbaum, 2006), *Observational Research in U. S. Classrooms: New Approaches for Understanding Cultural and Linguistic Diversity* (Cambridge University Press, 2004), and *Research on Educational Resiliency: Student, Teacher, and School Perspectives* (Information Age Publishing, 2004).

Waxman has taught program evaluation, research, and statistics courses for the past 25 years. He also has been involved in many national, statewide, and local evaluation projects. He has collaboratively conducted many program evaluations in school districts, colleges and universities, agencies, and organizations and conducted evaluations for agencies and organizations. Recently, he has been the principal investigator of several statewide evaluations, including the Evaluation of Gates GO Centers in Houston ISD; the Evaluation of the Texas College & Career Readiness Initiative Faculty Collaboratives; and the Evaluation of Mathematics, Science, and Technology Teacher Preparation Academies in Texas.

Jacqueline R. Stillisano is the co-director of the State of Texas Education Research Center at Texas A&M University. She has provided project management and evaluation expertise to a variety of large-scale projects committed to improving preservice preparation and enhancing teacher quality. In her role as co-director of the ERC, Stillisano is responsible for the effective and efficient implementation of the center's work and supporting the research and development efforts of the center's various projects. Her responsibilities include meeting the budget and administrative reporting requirements of TAMU and THECB/TEA, monitoring all center expenditures, working with center researchers in recruiting research and support staff, ensuring that all studies are approved through the university's Committee for the Protection of Human Subjects, and organizing dissemination efforts. Stillisano also serves as the PI or Co-PI on several of the ERC's current evaluation research projects, including the Evaluation of International Baccalaureate Schools in Texas, Evaluation of THECB GO Centers, and Evaluation of School Leadership Academies. She has published and presented many articles in the areas of teacher quality and professional development.

State of Texas Education Research Center at Texas A&M University

In 2006, the 79th Legislature authorized the Texas Higher Education Coordinating Board (THECB) and the Texas Education Agency (TEA) to establish three centers for education research. One such center, the *State of Texas Education Research Center at Texas A&M University* (the ERC at TAMU), was established within the College of Education and Human Development (CEHD). The ERC is responsible for conducting research on P-16 education issues for the benefit of education in Texas, disseminating results and findings, and providing access to student level education data for other researchers.

To facilitate the work of the center, the THECB--under an interagency contract with TEA--provides the ERC at TAMU with both P-12 and higher education data. This practice makes the ERC a primary source of access to student level education data for researchers across Texas. Student level data provided to the ERC, for

example, includes attendance, achievement, disciplinary, and course completion records.

The ERC studies major issues in education reform and school governance in order to improve policy and decision-making in P-16 education. It is a new interdisciplinary research center that builds on the significant educational research faculty expertise and the capacity of research facilities on the Texas A&M campus. A number of faculty and doctoral students from the CEHD participate in this center, in addition to economists and public policy researchers from the Bush School of Government and Public Service and the College of Liberal Arts. The ERC at TAMU was officially designated as a university center by the Board of Regents in January 2008, thereby confirming the ERC's importance and value to Texas A&M University.

Researchers from TAMU's College of Education and Human Development, Bush School of Government and Public Service, and College of Liberal Arts are involved in a number of research and evaluation school-based projects investigating the nature and impact of school resources and educational practices on student learning and on gaps in achievement among diverse groups in Texas. Research on School Finance, Facilities, and Organization is one of the major research program areas in the ERC.

Table 1: Summary of Primary Activities of the Proposed Research Study

I. Questions Focusing on Enrollment in Dual-Credit College Courses	Data	Methods
<p>Q1. How many students in your high school took dual-credit college courses this year?</p> <p>Q2. What differences exist in enrollment in dual-credit college courses by (a) student characteristics (e.g., gender, ethnicity, socio-economic status) and (b) school-level characteristics (e.g., size, location, economically disadvantaged)?</p> <p>Q3. Why do some students choose to take dual-credit college courses?</p> <p>Q4. Why do some students choose not to take dual-credit college courses?</p> <p>Q5. What kinds of courses are students taking instead of dual-credit courses (e.g., AP, IB, non-AP)?</p>	<ul style="list-style-type: none"> • Online surveys from high school principals in Texas (spring 2010) • Online surveys from high school counselors in Texas (fall 2010) • Online surveys from college administrators in Texas (fall 2010) • Data from the ERC data warehouse (summer 2010) 	<ul style="list-style-type: none"> • Descriptive statistics on dual-credit enrollments ERC data and survey responses. Those statistics will be disaggregated by student subgroups and school level characteristics. One dimension for analysis will be the extent to which schools with substantial dual-credit enrollment also offer AP/IB courses. • Researchers will use appropriate statistical techniques to evaluate the survey responses of principals and counselors regarding why some students take dual-credit courses and others do not.
II. Questions Focusing on the Types of Dual-Credit College Courses	Data	Methods
<p>Q1. What was the number of dual-credit college courses that your school (or college) offered this year?</p>	<ul style="list-style-type: none"> • Online surveys from high school principals in Texas (spring 2010) • Online surveys from high school counselors 	<ul style="list-style-type: none"> • Descriptive statistics on dual-credit course offerings will be constructed from ERC data and survey

<p>Q2. What specific dual-credit college courses were available to students in your high school?</p> <p>Q3. What constraints (e.g., space, teacher qualifications) limited the number of dual-credit college courses that your school offered this year?</p>	<p>in Texas (fall 2010)</p> <ul style="list-style-type: none"> • Online surveys from college administrators in Texas (fall 2010) • Data from the ERC data warehouse (summer 2010) 	<p>responses. Those statistics will be disaggregated by student subgroups and school level characteristics.</p> <ul style="list-style-type: none"> • Researchers will use appropriate statistical techniques to evaluate the survey responses of principals and counselors regarding constraints that may limit their ability to offer dual-credit courses.
<p>III. Questions Focusing on Instruction of Dual-Credit College Courses</p>	<p>Data</p>	<p>Methods</p>
<p>Q1. Who were the instructors of the dual-credit college courses that your school (or college) offered this year? How are they different from other teachers or instructors in your school (or college)?</p> <p>Q2. How were the dual-credit college courses delivered for the high school (e.g., face-to-face, online, taught at college)?</p> <p>Q3. To what extent are the quality and rigor of the dual-credit college courses consistent (a) across courses, (b) in comparison to other AP courses in the school, and (c) similar to other</p>	<ul style="list-style-type: none"> • Online surveys from high school principals in Texas (spring 2010) • Online surveys from high school counselors in Texas (fall 2010) • Online surveys from college administrators in Texas (fall 2010) 	<ul style="list-style-type: none"> • Researchers will use appropriate statistical techniques to evaluate the survey responses of principals and counselors regarding local modes of delivery for dual-credit courses. In situations where high school faculty deliver dual-credit courses, respondents will be asked about the specific credentials of those faculty. • Researchers will use appropriate statistical techniques to evaluate the survey responses of principals, counselors, and college

courses at the college?		administrators who will be surveyed about their perceptions regarding the relative quality and rigor of dual-credit courses.
IV. Questions Focusing on the Policies Associated with Dual-Credit College Courses	Data	Methods
<p>Q1. What are the requirements for students to enroll in dual-credit college courses at your school (or college)?</p> <p>Q2. Who is responsible for counseling students about dual-credit college courses at your school (or college)?</p> <p>Q3. How many dual-credit college course hours are students allowed to accumulate each semester and each year?</p> <p>Q4. How many dual-credit college courses hours are students allowed to transfer to college?</p>	<ul style="list-style-type: none"> • Online surveys from high school principals in Texas (spring 2010) • Online surveys from high school counselors in Texas (fall 2010) • Online surveys from college administrators in Texas (fall 2010) 	<ul style="list-style-type: none"> • Researchers will use appropriate statistical techniques to evaluate survey responses of principals and high school counselors regarding enrollment requirements for dual-credit courses and any rules regarding the number of dual-credit courses a student may take. • Researchers will survey college administrators regarding transfer rules and the extent to which dual-credit courses accelerate student progress toward a degree.
V. Questions Focusing on the Costs of Dual-Credit College Courses	Data	Methods
<p>Q1. What is the cost of dual-credit college course programs to the state,</p>	<ul style="list-style-type: none"> • Online surveys from high school principals (spring 2010) 	<ul style="list-style-type: none"> • Researchers will model the cost of delivering dual-credit courses,

<p>school districts, community colleges (and other institutions of higher education), and students?</p> <p>Q2. Who pays tuition, books, and transportation costs related to dual-credit college courses at your school (or college)?</p> <p>Q3. What other school (or college) costs are associated with offering dual-credit college courses (e.g., utilities, personnel costs)?</p> <p>Q4. What is the extent of tuition and student fees generated by the college as a result of dual-credit college courses?</p>	<ul style="list-style-type: none"> • Online surveys from school business officers (summer 2010) • Online surveys from college administrators in Texas (fall 2010) • Data from the ERC data warehouse (summer 2010) • Critical review of finance documents and formula funding relating to dual-credit courses (summer 2010) 	<p>using PEIMS data on school district expenditures, student enrollment, and teacher payroll.</p> <ul style="list-style-type: none"> • Survey responses will be used to calibrate the models and identify major cost drivers and delivery modes. • Principals and business officers will be surveyed regarding the extent to which school districts incur cost for tuition, books, and transportation. Those responses will be incorporated into the cost model. • College administrators will be surveyed regarding tuition and fee revenues from dual-credit students. • Researchers will evaluate the funding formula implications of dual-credit courses at the secondary and post-secondary levels.
<p>VI. Questions Focusing on the Quality of Dual-Credit Courses</p>	<p>Data</p>	<p>Methods</p>
<p>Q1. What are principals' and college administrators' perceptions of the rigor, quality, and consistency</p>	<ul style="list-style-type: none"> • Online surveys from high school principals in Texas (spring 2010) • Online surveys from 	<ul style="list-style-type: none"> • Researchers will use appropriate statistical techniques to evaluate the survey responses of

<p>of dual-credit college courses?</p> <p>Q2. To what extent do principals' and college administrators' perceptions of the rigor, quality, and consistency of dual-credit college courses differ by demographic characteristics of the school/college (e.g., size, location, number of economically disadvantaged students, student ethnicity, number of students taking dual-credit courses)?</p> <p>Q3. To what extent do principals perceive dual-credit college courses to be effective in (a) reducing the dropout rate and (b) helping students go to college?</p> <p>Q4. What are some of the challenges that principals and college administrators perceive regarding the dual-credit college courses?</p> <p>Q5. To what extent do dual-credit courses reduce the amount of time-to-graduation and number of courses for students enrolled in community colleges and other IHEs?</p>	<p>high school counselors in Texas (fall 2010)</p> <ul style="list-style-type: none"> • Online surveys from college administrators in Texas (fall 2010) 	<p>principals, high school counselors, and college administrators regarding the rigor and comparative quality of dual-credit courses. The analysis will be disaggregated by the demographic characteristics of the school and college.</p> <ul style="list-style-type: none"> • Researchers will use appropriate statistical techniques to evaluate the survey responses of principals and high school counselors regarding the efficacy of dual-credit courses in reducing the dropout rate and increasing the college attendance rate. • Researchers will summarize and evaluate principal and counselor responses regarding the challenges associated with dual-credit courses. • Researchers will use appropriate statistical techniques to evaluate the survey responses of college administrators regarding the impact of dual-credit courses on time-to-graduation and the number of excess credits students have at graduation.
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