



Phase II: Dual Credit Education Programs in Texas

AUGUST 3RD WEBINAR: QUESTIONS AND ANSWERS

Q: Can you comment on the generalizability of your findings from the causal impact study, given the parameters of your IV analysis? It was my understanding from the report that not only does the analysis exclude ECHS students, but it focuses on how DC participation affects students who are on the margin of participation. Would appreciate more clarity on the extent to which this portion of the study is applicable to DC students at large.

A. Instrumental variables models identify the causal impact of dual credit participation for students who are most likely to switch their participation status due to the instrument – in this case the extent to which a high school starts to expand offering dual credit education opportunities to its students. Economists refer to this estimator as the “local average treatment effect,” and education researchers often refer to it as the “complier average causal effect.” Thus, in our case, we are estimating the impact of dual credit participation for students who would participate in dual credit education during a year when more students in their school took dual credit, but would not participate in years when dual credit was less prevalent in their school. Our study spans a period when the dual credit participation rate increased from 6 percent to 22 percent, so our results pertain primarily to the students who would take dual credit when the overall participation rate is 22 percent but would not do so when the participation rate is 6 percent.

Our causal impact study also does not include students who take dual credit at early college high schools (ECHS), which we acknowledge and explain on the first page of the report. We decided to focus on dual credit programs offered through traditional high schools because this is how most students experience dual credit education, not through unique programs like ECHS, which provide robust student supports mandated by the Texas Education Agency. According to our analysis of THECB data, during the 2016-17 academic year, 17 percent of all students who took dual credit and 22 percent of all semester credit hours of dual credit delivered statewide were delivered in the context of an ECHS. Also, as we note in the study, experimental studies, including [one by AIR](#), had already documented the positive effects of ECHS for a wide range of students, including those who are historically underrepresented in postsecondary education.

Others have noted the limitation of basing our study on cohorts of 11th graders, since some students take dual credit as early as 9th grade. As we demonstrate in the report, the vast majority of dual credit participants do not take dual credit courses until the 11th grade, particularly when considering general dual credit (as opposed to ECHS). However, most students who take dual credit courses prior to 11th grade would also take dual credit courses during the 11th or 12th grade, and hence would be classified as dual credit participants in our study.

Q: How confident is your team that the IV you chose, % of students participating in DC, is a strong instrument that does not influence higher education outcomes other than through its relationship with individual students' DC participation?

A. Past studies of general dual credit programs have used descriptive methods that compare outcomes of students taking dual credit to those of students who do not, sometimes controlling directly for student-level factors, such as race and ethnicity, and test scores. Such studies paint an inaccurate picture of dual credit education because they are unable to account for unobservable factors that also influence student outcomes, like a student's desire to enroll in college and motivation to persist and succeed in college. For instance, the recent [University of Texas System study](#) documented the primary reasons students cite for taking dual credit, such as to "knock out a few courses before college," or to "improve their GPA and get into a better college." This suggests that many students who take dual credit courses had already decided to go to college prior to taking a dual credit course, a fact that would skew the results of a descriptive study. For this reason, we chose to develop a causal impact study that could account for these kinds of unobservable factors, and give us a more realistic understanding of the benefits of dual credit education.

Our causal impact study uses differences in the timing and extent of implementation of dual credit programs across high schools in Texas to address selection into dual credit programs. We implement this strategy using an instrumental variables model with high school level fixed effects. Specifically, we instrument for a student's dual credit participation status with an indicator for the proportion of other students within the student's high school cohort who took a dual credit course, a measure of the extent of implementation of dual credit within the student's high school. The primary assumption underlying this approach is that changes in unobservable factors that could influence student outcomes are not directly correlated with the expansion of dual credit programs within high schools. As we are careful to highlight in the report, there are a number of ways this assumption may be violated.

While some have argued that our results are underestimating the benefits of dual credit education, the primary factors that may cause bias in our estimates would all cause them to overstate dual credit's true impact. For example, if high schools that expand dual credit faster than others do so because more of their students desire to go to college, then our estimates would overstate the impact of dual credit. This is because our estimates would also reflect an increase in student college-going culture. On the other hand, one of the primary mechanisms through which dual credit is hypothesized to operate is through its direct influence on the college-going culture within high schools. If the expansion of dual credit itself caused the change in underlying college expectations among students, we would want to include this effect within our estimates. We conducted a number of sensitivity analyses to assess the extent to which peer effects of this nature may affect our estimates. In particular, we reran our model using a measure of the extent of implementation of dual credit in the high school during the previous cohort as the instrument, and the results were qualitatively similar to those we emphasize in the report.

More generally, if high schools also changed other college-related policies or practices while expanding dual credit enrollment, then it would be impossible for us to separate these effects from the influence of dual credit. However, most policies or practices that schools would implement while expanding dual credit education are likely to promote higher college enrollment, which, again, would cause our estimates to overstate the true effect of dual credit participation. For example, if high schools expanded

dual credit programs at the same time as they improved advising and support services, or expanded college access campaigns, then our estimates would include the influence of such factors causing us to overstate the impact of dual credit. Note that we are only concerned about changes in school policies and practices that coincide with the expansion of dual credit. Any permanent school-level factors, preferences or policies promoting higher college enrollment rates would be accounted for with the school fixed effects that we include in the model.

In short, there are a number of factors that could cause us to overstate the true effect of dual credit. However, we are challenged to identify factors that would cause our estimates to understate the true impact of dual credit.

It is important to note that a recent [causal impact study of dual credit programs in Texas by Dr. Mike Villarreal](#), now at UT San Antonio, used similar data and a strategy that is similar to ours. While we implement our methodologies in slightly different ways, both studies use differences in the timing and extent of implementation of dual credit programs across Texas high schools to address selection into dual credit course-taking. Thus, it is not surprising that the studies have similar implications for the impact of dual credit on student outcomes. For instance, our study finds that dual credit participation increases college enrollment by 2.4 percentage points, while Dr. Villarreal finds an increase of 1.83 percentage points. These are real and meaningful effects, but are much smaller than those that have been reported from past descriptive studies.

Q: Will this presentation be made available online?

A. Yes, it is already posted on the THECB's dual credit study website (www.thecb.state.tx.us/dualcreditstudy)

Q: Is regional data available?

A. No. The purpose of this study was to give policymakers an evidence-based understanding of the effectiveness and the implementation of dual credit education programs statewide. With that purpose in mind, each component of the study strove to gather data that represented the various ways dual credit education programs are delivered across the state.

Q: Was there any data collected on the potential impact of the number of SCH taken as dual credit on Financial Aid once a student graduates from high school? Example, student possibly only being considered part-time due to lack of courses available if core curriculum was completed through a dual credit program.

A. No, we did not look at these issues for this study, but relevant data exists at THECB, so this could be addressed in a future study.

Q: Do you, then, have any plans for including ECHS with a different methodology in the future?

A. We do not currently have plans to do so through the current study. However, it is worth noting that Dr. Villarreal's study was able to include ECHS. This is because he used changes in the timing and extent of dual credit implementation across school districts, as opposed to high schools. We will cite it in the report and make note of the fact that his study did include dual credit delivered through ECHS.

Q: What contextualization of these data through our stakeholder experiences would you find most helpful to assist in your interpretation of these data?

A. Stakeholder feedback is critical in helping us process results and translate the research into policy and practice recommendations that incorporate various perspectives and voices and are sensitive to stakeholder constraints and realities. Feedback also helps us to identify areas where more research needs to be conducted in order to improve policy and practice around dual credit education.

Q: Is there any consistency across the state in the way community colleges are discounting the tuition for dual credit courses?

A. No, in part because the State grants latitude to community colleges over determining the amount of tuition and fees they charge dual credit students. For Phase II, the THECB collected Memorandums of Understandings from dual credit education partnerships across the state. In the analysis of those data, AIR found wide variation in how they applied tuition discounts for dual credit students. For example, some dual credit partnerships covered tuition and fees for all participating dual credit students, while others only provided tuition and fee support for dual credit students who were eligible for free and reduced price lunch or those enrolled in career and technical education dual credit courses.

Q: What research questions do you think THECB and others should explore next regarding dual credit, based on your findings so far?

A. The research raises important questions, that if answered, could lead to a more complete understanding of dual credit education programs in Texas. Below we list a set of research questions that merit further investigation.

What is the impact of House Bill (HB) 505 on student outcomes?

Our study was unable to examine the impact of House Bill (HB) 505, which loosened restrictions on who can take dual credit courses, and the number of dual credit courses high school students can take. Examining the extent to which HB 505 affected high school completion, college enrollment and graduation could help decisionmakers determine whether broadening access to dual credit education was beneficial or detrimental to students.

Why do low-income students and students of color who participate in dual credit education benefit less than their counterparts?

While our study found that on average dual credit education advantaged students, we also found that the extent to which different students benefit varies considerably. Specifically, our analyses revealed that traditionally advantaged student populations (i.e. more academically prepared, Whites) reaped greater rewards than traditionally disadvantaged students (i.e. students of color, low-income students). While we believe that differences in academic preparation for dual credit courses partially explain differences in outcomes, other factors like quality of advising and access to financial aid could also play roles. Identifying why students of color and low-income students fare worse than their counterparts could help decisionmakers at the state and the local levels design interventions that could have the potential of reducing disparities and reversing these negative outcomes.

To what extent do instructional strategies differ between high school teachers and community college faculty teaching dual credit courses?

Though our study found that dual credit courses taught by high school teachers or college faculty did not systematically differ from college-credit only courses taught by college faculty in terms of content delivered, the rigor of student assignments, and the rigor of assessing student work, our study was unable to investigate whether the quality of instruction, including the quality of the strategies and methods instructors used to deliver content and engage students in the classroom. Classroom observations of dual credit and college credit only instructors could reveal if dual credit students receive different types of instruction compared to college-credit only students.

How much weight do high school guidance counselors and college advisors give to factors that drive decisions around course-taking?

The advising component of the study that drew on interviews with high school guidance counselors and college advisors examined the various factors respondents reported using to determine whether a student is eligible to participate in dual credit education and to counsel students into specific dual credit courses. The counselors and advisors we interviewed described district policies and school philosophies about which students could benefit from and succeed in dual credit courses as the driving factors for considering which students were advised to consider dual-credit education as an option. Students' postsecondary plans and likelihood of credit transfer were most commonly considered in advising students into dual-credit courses; high school counselors also frequently reported considering students' grade level and high school graduation requirements. Our study was not able to estimate or determine the weight counselors and advisors give to these various factors, however. Decisionmakers and researchers still lack information about the weight given to each factor in admission and course-taking decisions, and whether these weights vary by student characteristics. This information is consequential to determine if critical factors are not being given due weight in dual credit admission and course taking decisions.

Q: Was there any indication of whether certain types of dual credit courses were particularly advantageous, especially for low-income students -- e.g., ELA vs math etc.

A. No, we did not examine the impact of specific courses on student outcomes.

Q: Have you looked at the possible excess credits earned by dual credit students? Are you considering the role of the Pathways Project as it impacts dual credit and ECHS students?

A. Yes. In RAND's interim report on dual credit education programs in Texas, researchers found that on average dual credit students took 147 semester credit hours to complete a bachelor's degree relative non-dual credit students, who took 146 semester credit hours to complete the same degree. In the causal impact study of Phase II, AIR found that participating in dual credit education increases the total number of semester credit hours, including those earned through dual credit, students take to complete a bachelor's degree by 4.2.

No. We did not consider the role of the Pathways Project on the impact of dual credit education programs and ECHS.

Q: Regarding advising, was there any data collected on whether students had access to a college prep course (e.g. AVID strategies, college advising, etc.) prior to enrolling or concurrently enrolled with their dual credit courses. If so, what were the findings. One additional note, some institutions/districts may not proceed with offering such a beneficial course due to not being able to receive funding to assist with the cost of offering such a course.

A. No, we did not collect data from high school counselors and college advisors on whether students had access to a college prep course or whether they considered students' access/participation in college prep courses in counseling students into dual credit education or specific dual credit courses. We did ask our interview respondents whether they targeted the same students for AP/IB as they targeted for dual credit education and whether advising for dual credit looked different than advising for AP/IB. We found variance across the sites in this regard, with many respondents indicating that they targeted the same students for dual credit as for AP/IB and that many of their students participated in both. Some high school counselors indicated, however, that they primarily targeted the top 10 percent of their students for AP/IB and the top 11-25% of their students for dual credit education. Some also indicated that if a student was interested in attending a highly selective out-of-state or private institution, they were more likely to recommend AP/IB over dual credit. With respect to whether institutions/districts may not proceed with offering courses due to not being able to receiving funding to assist with cost, we did not collect data on this issue as it falls outside the scope of our study.

Q: Although not discussed during the webinar, can you address your statement in the report regarding the 9th and 10th grade DC coursework as not being in the "core"?

A. The most common courses taken by 9th and 10th grade dual credit students before and after passage of HB 505 do fall within the academic core. However, among these courses, Learning Frameworks is the most popular, which may be or may not be included by a community college in their core curriculum. In the published final version of the report, we will acknowledge that the most common dual credit courses among freshmen and sophomores are within the academic core.

Q: Are there focus areas of academic pathways connected towards a guide for dual credit students while in H.S?

A. We did not focus on specific academic pathways for this study.