Exploring the Growth of Dual Credit Education in Texas

By Emily Brooke Bennett

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About the Author

Emily Brooke Bennett has a B.A. in political science and sociology from the University of Missouri and is an M.P.A. candidate at Texas State University. She has worked as Chief of Staff for a State Representative in the Texas Legislature since 2016, prior to that she served as a Senior Policy Analyst and Director of Constituent Services for another State Representative for four years. She became involved in education policy and state budgeting issues early on in her career, which helped inform this applied research topic.

Abstract

Purpose In Texas, dual credit enrollment has steadily increased since the Legislature first approved it in 1995. Dual credit first began as an effort to provide high school students the opportunity to sample college-level coursework but quickly became a statewide strategy for achieving higher education completion goals. In the early 2000's, Texas policymakers decided to deregulate college tuition and decrease state funding, which has made the cost of attending college increasingly difficult for students and parents. In addition, those who can afford college are not graduating at high enough rates to fulfill the state's projected workforce needs. Increased cost and lagging graduation rates created the environment for dual credit expansion in Texas. The purpose of this applied research project is to explore how university personnel perceives the impact of dual credit students on advising, teaching, and administrative systems.

Methodology: The most commonly stated goals of dual credit are for high school students to take lower-level university classes in order to complete postsecondary degrees at faster rates and with lower costs. Many reviews of dual credit have examined programs from the students' perspective. This applied research project takes a different approach by utilizing expert interviews to explore how university personnel perceives the impact of dual credit students on advising, teaching, and administrative systems. Universities, who are advising and educating this new type of student, can offer valuable insight into whether or not dual credit is achieving its intended purposes. For dual credit to be successful, it needs to be working for everyone involved in the educational pipeline.

Findings: Based on the interviews this project concluded that while university personnel understands the appeal of dual credit, they also believe dual credit students present challenges to the university systems. The advising staff finds it difficult to determine if dual credit students have mastered the curriculum well enough to enroll them in the next course. The faculty believes that many dual credit students are not adequately prepared to transition seamlessly into upper-division coursework. Several professors cited a lack of maturity and weak writing skills of particular concern. The administration reports that it is taking dual credit students longer to graduate than they think, due to differing degree requirements and sequential coursework. And finally, one administrator warns that first generation dual credit students may persist and complete college at lower rates than traditional dual credit students. This project reveals diverse, expert opinion on how dual credit students are faring at Texas universities and can be used to form preliminary policy recommendations and the basis for future research.

Executive Summary

Texas higher education is facing issues relating to affordability and graduation rates. The state's higher education goal is for 60% of Texans ages 25-34 to have a certificate or degree by 2030. Currently, that percentage is 41%. Students have begun taking college classes during high school through dual credit programs to pay less for college and graduate sooner. Once viewed as a silver bullet in education policy, dual credit may be causing more harm than good. Previous research has mostly examined the effectiveness of dual credit programs from the students' perspective. This project utilizes expert interview to explore how university personnel perceives the impact of dual credit students on the systems of advising, teaching, administration. It is in the interest of the state to measure progress towards achieving stated higher education and workforce goals. University staff can provide valuable insight into whether dual credit programs are contributing to these efforts.

This report represents valuable, preliminary insight into how dual credit students are moving through some of our public institutions. A summary of the findings and recommendations is provided below:

Findings:

Advising

- Advisors struggle to advise dual credit students which courses to enroll in. There is no state policy ensuring the rigor of dual credit courses offered to high school students. Therefore these students enter college with varying levels of preparedness.
- Many dual credit students lack maturity and the development of soft skills necessary to succeed in upper-level coursework during their first semester of college.
- There is a difference between core requirements and degree requirements for some majors. Dual credit doesn't cover all degree requirements, therefore many students are unable to shorten their time to degree.
- Students face issues of transferability in general because the offerings in dual credit programs do not always reflect the lower-level university coursework.

Teaching

- Professors believe that some dual credit students who require remediation or help with writing fail to utilize support services on campus.
- Professors report that some dual credit students are intimidated by older students and less likely to participate in upper-level coursework.
- Dual credit does not affect the rigor of upper-level coursework, even though many are inadequately prepared.
- Some dual credit STEM students struggle to balance their schedules because they only have math/science courses left to complete. These students can become too overwhelmed to perform well.

- Some dual credit students resort to plagiarism because they feel overwhelmed in upper-level coursework. Because they are new to college expectations, some dual credit students don't understand what plagiarism is, and one professor has added an explanation to her curriculum.

Administration

- Universities are beginning to move around faculty or higher adjunct faculty because of dual credit, and this could impact department budgets.
- Dual credit students take longer to graduate than they think, due to most degrees requiring sequential coursework.
- One administrator believes first generation dual credit students persist and complete at lower rates than traditional dual credit students due to financial aid requirements and lack of preparedness.

Recommendations

Recommendation #1- University advising departments should implement dual credit training as part of the continuing education.

Recommendation #2- University faculty should promote course expectations and share information about resource centers on campus at the beginning of each semester.

Recommendation #3- University administrators should be required to develop educational partnerships for dual credit programs and monitor university budgeting as it pertains to dual credit.

Conclusions

This research project's limitations are its preliminary nature and small sample size. However, it provides an interesting insight into how university personnel experiences increased dual credit enrollment. Further research is necessary to determine if these respondents experiences are representative of all universities in Texas:

Re-examine the perceived impact of dual credit students on advising, teaching, and administrative systems in five to ten years. These universities have not experienced a full cohort of students under the most comprehensive dual credit expansion legislation.

Survey small universities as to the perceived impact of dual credit students on advising, teaching, and administrative systems. Small universities will notice funding disparities sooner than large universities.

Compare the graduation rates of dual credit students and traditional students. As more students complete dual credit courses, there will be more data to review.

Compare on the dual credit experiences of first-generation students and traditional students. A stated goal of dual credit is to help more first-generation students access higher education

Chapter I – Introduction

Chapter Purpose

The purpose of this chapter is to review dual credit literature to provide context and explanation for how dual credit has expanded in Texas, as well as discuss some policy problems associated with increased enrollment. Texas dual credit policy and its associated challenges inform the purpose of this applied research project and lay the groundwork for pillar questions introduced in the next chapter.

History of Dual Credit

Enrollment in dual credit coursework has increased rapidly over the past two decades. Policymakers and parents alike have looked towards this relatively new education option as the solution to solve higher education issues of access, affordability, and degree completion. However, this rush to adopt dual credit coursework as the silver bullet for higher education degree attainment has presented many issues for students and universities (Miller et al., 2017).

Dual credit is defined as, "the process by which a high school student enrolls in a college course and receives simultaneous academic credit for the course from both the college and the high school." (Overview: Dual Credit, 2016). The term "dual credit" can also be applied to several different initiatives like concurrent enrollment, joint enrollment, as well as advanced placement (AP) courses. Advanced placement (AP) courses and required exams are developed by the College Board. Researchers suggest that the success of AP students is biased, because AP courses are more likely to be offered to students who are already high achieving (Scott, Tolson, & Lee, 2010). This applied research project focuses only on courses taken by high schools students to achieve both high school and college credit (Overview: Dual Credit, 2016).

Although dual credit, as we know it today, is relatively recent innovation; educators and administrators have been trying to strengthen the connection between secondary and postsecondary education since the 1920s. Tobolowsky (2016) reports that the first dual credit program, which offered college-level coursework to high school students was a project at Syracuse University in 1973. This first course differed from current dual credit courses in two ways: First, the high school students took the one-semester college course over an entire school year, which is not the case today. And second, students had to pass an exam administered by college officials to receive credit for the course. This project was successful but did suffer from the same credit transferability issues that continue to plague dual credit programs. In the 1970s, California became the first state to pass dual credit policy.(Mokher & McLendon, 2006).

Since then, dual credit programs have spread throughout the country, and policymakers view it as the answer to a few key issues that persist in higher education: affordability, graduation rates, and college preparation. Tobolowsky (2016) explains that students are paying for a course one time, and it counts twice. Hence dual credit programs not only save student's money, but they also decrease the time to degree. Finally, dual credit courses introduce students to college-level rigor and help to develop advanced study skills.

Universities face numerous challenges. Willett, Andrew, & Rudisill, (2016) argue that decreased state funding for public higher education is forcing institutions to do more with less. Fewer public dollars means that the responsibility of paying for college has moved from the state to students, making attending college more costly for families. Not only is attending college expensive, but many criticize higher education for low and slow graduation rates. The *Chronicle of Higher Education* (2015), reports that only 55% of first-time college students complete college in 6-years. Policymakers and education leaders are looking towards dual credit to solve

these two challenges, among others. Lawmakers have created the policies to expand dual credit participation, and that effort has been successful. Dual credit enrollment has skyrocketed over the past 40 years and has continued to grow in recent years. In 2010-2011, nearly 2 million high school students participated in dual credit courses with 82% of high schools offering them (Thomas, Marken, Gray, & Lewis, 2013).

Dual credit enrollment is up 67% from 2002-2003 (Mangan, 2014). It has rapidly become the most widely-available accelerated learning option and therefore a prominent strategy towards national college completion goals (Tobolowsky, 2016; Adelman, 2004, 2006). There is ample research from the student's perspective, however, not many have taken into account how increased dual credit enrollment has affected our universities.

Completion Models

Students can complete college credit in several different ways. This project refers to traditional students, transfer students, and dual credit students. **Table 1.1** defines each type of student to distinguish between these groups of students.

Table 1.1 - Student Definitions

Traditional	Students who enter a four-year institution with little to no college credit. Some traditional students will have a small number of credit hours through AP exams.
Transfer	Students who enter a four-year institution with some college credit, most commonly taken at a community college.
Dual Credit	Students who enter a four-year institution with some college credit taken while enrolled in high school. These students receive both high school and college credit for the same course.

Texas Policy Framework and Implementation

Dual credit education has grown exponentially over the last 20 years. Considering the policy history of dual credit, the recent higher education environment made it fertile ground for the rapid expansion of dual credit. In 2003, the Texas Legislature deregulated the tuition rates universities could charge and since then, adjusting for inflation, tuition has roughly doubled (Watkins & Daniel, 2017). As tuition increased, Texas has made insufficient progress towards improving graduation rates, but as of 2014, the six-year graduation rate was 60.5% at four-year institutions and 28% at two-year institutions. Texas releases a strategic plan for higher education every fifteen years. The most recent plan, 60x30TX, was released in 2015 with the primary goal of 60% of Texans ages 25-34 completing a certificate or degree by 2030 (Texas Higher Education Coordinating Board, 2015). The affordability and completion challenges coupled with the goal of our next strategic plan are directly responsible for increased dual credit enrollment.

> According to date gathered by the THECB, the number of high school students taking college-level courses through DC programs at public higher education institutions rose from 17,795 to 133,342 between the fall 2000 and the fall 2015 semesters, an increase of roughly 650%. (Miller et al., 2017, 13; Overview: Dual Credit, 2016)

Texas first approved dual credit policy in 1995. Texas passed House Bill 1336, which recognized dual credit education as an intervention tool that schools could implement to help high schools students transition into postsecondary education (Miller et al., 2017). In 2003, Texas passed House Bill 415, which enabled both high schools and higher education institutions to receive funding for dual credit courses. Both of these policies are important to the creation of dual credit, but the following two bills are responsible for the increase in Texas. In 2005, the legislature passed House Bill 1, which required all schools to offer at least 12 hours of college credit through advanced placement, international baccalaureate, or dual credit courses. And finally, the

legislature passed the most transformative policy in 2015, House Bill 505. This bill relaxed the requirements for dual credit education allowing students to start taking courses as early as freshman year (it was previously limited to 11th and 12th-grade students) and prohibited the State from limiting the number of courses a student could take per semester or year (Miller et al., 2017).

Policy Problems

Texas dual credit enrollment has expanded so rapidly that there is concern about the potential impact this may have on the overarching educational goals of the state (Miller et al., 2017; Tobolowsky, 2016; Holley, 2016).There is a concern regarding transferability of credit hours. Holley (2016) and Holloway (2010) argue that not all dual credit coursework transfers towards college credit. Students have even more trouble with counting dual credit courses towards degree completion. Often dual credit coursework taken in high school may transfer and count towards elective credit at a higher education institution, but they still are required to take the course that counts towards their degree plan. This issue calls into question one the stated goals of dual credit: shortening the time to degree. The literature also discusses issues of ensuring quality across all dual credit programs. Texas does not require minimum standards dual credit courses (Miller et al., 2017), and therefore the quality of the dual credit program may vary based on institution type, teacher quality, student eligibility and funding (Tobolowsky, 2016). Lastly, there are funding challenges associated with dual credit. Texas law allows both school districts and colleges to receive funding for dual credit courses. Students may also be charged tuition or receive federal financial aid (Miller et al., 2017). There is a lack of predictability, because of how many organizations are responsible for funding dual credit programs, which can result in an

unexpected cost to students and parents (Griffith, 2009). The final funding issue associated with dual credit is how the growing number of students completing college-level coursework before postsecondary enrollment affects universities' bottom line.

Research Purpose

The purpose of this applied research project is to explore how university personnel perceives the impact of dual credit students on advising, teaching, and administrative systems. It utilizes a qualitative method of expert interviews to achieve additional insight into the effects of dual credit participation on higher education in Texas. The results of this project could prove useful as policymakers attempt to address issued caused by dual credit and create the basis for further research.

Chapter II – Summary of Conceptual Framework

Chapter Purpose

The purpose of this chapter is to review dual credit literature concerning specific issues relating to advising, teaching, and administration and to develop a framework, which is used to guide interviews of university personnel that are central to the overall project.

Introduction to Pillar Questions

The policy background, Texas policy framework and implementation and policy problems lend themselves to further exploration. The rapid growth in dual credit enrollment indicates this accelerated learning strategy will impact our educational pipeline and strategic plan for higher education. Most of the literature focuses on the student perspective and their experience navigating dual credit. This applied research project will utilize pillar questions to explore the university perspective on the perceived impact of dual credit programs on advising, teaching, and administrative systems (Shields and Rangarajan, 2013; Shields and Tajalli, 2006).

The transferability issues demonstrated in the literature, specifically by Holley (2016) and Holloway (2010) raise the question the quality of academic advising. The first section covers current advising strategies and uses pillar questions to explore how dual credit enrollment impacts the types of academic advising and training advisors receive. Problems concerning the lack of quality and rigor of dual credit coursework are present throughout the literature (Tobolowsky, 2016; Miller et al., 2017). The second section will discuss teaching and use pillar questions to explore how dual credit enrollment effects student performance and enrollment in core courses. Finally, the literature touches on funding and administrative issues associated with

dual credit issues (Miller et al., 2017; Griffith, 2009). Current research mainly focuses on how dual credit programs are funded and administered. In an effort to stay consistent with the purpose of this applied research project, this research will focus on the university perspective. The third section will use pillar questions to explore the impact of dual credit enrollment on university budgeting and graduation rates.

Advising – (Pillar Question 1)

Higher Education institutions are constantly working towards increased student retention rates and decreasing the time to degree. A review of the national college academic advising literature reveals that effective advising is central to these goals. The former chancellor of the University of Texas System, Francisco Cigarroa (2014) touted that all of their system institutions take part in national advising initiatives aimed at improving student graduation rates. While the thrust of academic advising focuses on college completion, White (2015) argues that the ultimate goal of an academic advising program is to promote students as scholars and empower them to be confident in their own decision making.

Dual credit expansion in Texas has challenged our current academic advising system. Before dual credit courses, high school, community college, and university advisors were responsible for advising students on their respective campuses. However, since the expansion of dual credit, many dual credit students have received direct college coursework counseling on their high school campuses (Miller et al., 2017). The first pillar question (PQ1) is – *What is the effect of dual credit enrollment on student advising?*

Types of Advising – (Pillar Question 1a)

As academic advising has changed over the years, the literature describes two main advising strategies: Learning-centered advising and developmental advising. Learning-centered advising indicates clear goals for students and then requires active involvement. This approach gives students the ability to weigh options and make decisions rather than rely on the advice or opinion of others (Drake, Jordan, & Miller, 2013). Developmental advising is a shift away from prescriptive, course-centered advising to a more comprehensive approach. According to Drake, et al. (2013) we expect the advisor, "to accept the student on a three-dimensional continuum and facilitate growth in each one through the coordination of a variety of experiences" (45). Crookston (2009) urged this shift by encouraging advisors to become more than schedule planners and realize their significant impact on student outcomes.

When evaluating the impact of advising it is important to know how students view the type of advising they receive. Allen & Smith (2008) administered a survey to faculty and students inquiring about their perspectives on advising. And while there was significant agreement between faculty and students on most questions, students were underwhelmed by the advising they received in all areas. This result led the researchers to question the ability, and effectiveness, of advisors to deliver advising across all functions of the university. One training model Allen & Smith (2008) suggested was Habley's (2004) advising dual model between academic faculty and student affairs staff. This type of advising assigns all curricular matters to the academic faculty and all non-curricular matters like research and support services to student affairs staff. An obvious concern about this model would be confusion and lack of cohesiveness.

Another emerging trend in academic advising that lends itself to confusion is the increased utilization of self-advising though the internet. Institutions should consider what

advising resources they make available on the web concerning their own institution as well as neighboring or partnership institutions (Hood, Hunt, & Haeffele, 2009). Advising is unique in that it reaches all students enrolled in an institution (White, 2015). And now that students are reaching the university level with varying levels of preparation because of dual credit, hence the first advising sub-question (PQ1a) is – *How do dual credit students impact the types of advising needed?*

Training of Advisors – (Pillar Question 1b)

Students require different types of academic advising because of the expansion of dual credit. Miller et al., (2017) surveyed community college staff and found that they often support their neighboring high schools by providing training to high school counselors on how to advise dual credit students. The training was in the form of workshops and focused on dual credit eligibility and advising protocols. The survey also discovered that not all schools had a strong advising partnership with their community college. This unequal advising supports Holley's (2016) argument that not enough dual credit coursework is counting towards college degree completion. She recommends that advising protocol should focus on explaining to students as to how dual credit curriculum transfers to the institution of their choice. Often dual credit coursework can count as elective credit, but will not count towards a student's selected degree plan. Lack of articulation attacks one of the primary goals of dual credit: decrease the time to degree.

Allen, Smith, & Muehleck's (2013) research on advising important to pre-transfer students supports Holley's (2016) recommendation that advisors should be educating students as to how their previous credit will transfer. Dual credit students face more similar challenges to pre-transfer students than traditional high school graduates since they have already taken courses

for college credit. Quality academic advising becomes even more important to student success and degree attainment for students who are moving throughout the educational system (Hood, Hunt, & Haeffele, 2009). The research identifies several issues surrounding training of advisors, hence the second advising sub question (PQ1b) – *How do dual credit students impact the training that advisors receive?*

Teaching – (Pillar Question 2)

When university faculty begins teaching dual credit students, they have already taken college-level courses. However, there are questions about the variations of dual credit programs. " Those variations include teacher eligibility, student eligibility, institutional type, funding, content, and course quality," (Tobowlosky et al., 2016). According to the Miller et al., (2017) report, while regional accrediting bodies set minimum qualification standards for college educators the same standards do not exist for dual credit instructors. In Texas, there is no guarantee that dual credit instructors have similar teaching experience or education level. This report also found that dual credit instructors are more likely to be part-time or adjunct faculty and less qualified than instructors who teach college-credit-only courses. Phelps & Chan (2016) make a case for a multiplicity of dual credit goals, namely greater exposure to college, developing study habits, and increased psychosocial support. However, if students are arriving with varying levels of preparedness, the primary goal of moving students through the educational pipeline is impacted, which results in the second pillar question (PQ2) – *What is the effect of dual credit enrollment on instruction?*

Student Performance – (Pillar Question 2a)

A review of the literature reveals that dual credit students perform better in college than non-dual credit students. Participation in dual credit results in higher grade point averages, college persistence, and degree attainment (Allen & Dadgar, 2012; Karp et al., 2007; Swanson, 2008). However, there are limitations to these findings. Students who take dual credit courses are more likely to be high-performing students already. And while knowing that more privileged students are taking dual credit than students with low socioeconomic status, it has been argued that offering dual credit to all students could alleviate gaps in college readiness and completion (Bailey, Hughes, & Karp, 2002). Now that state policy mandates dual credit courses must be available to all students this argument can be tested. Giani, Alexander, & Reyes (2014) attempted to address gaps in student performance research "by investigating the impact of dual-credit on postsecondary access, first-to-second year persistence, and eventual college attainment using quasi-experimental techniques on a statewide sample of students" (214). The most consistent result from their study was the positive result of taking dual-credit coursework on postsecondary performance.

The most appropriate research finding for this question is from the (Miller et al., 2017) report which found that dual credit students perform better at subsequent college-level courses or "follow-on" courses. If our main goal is to promote students more quickly through the educational pipeline, the postsecondary success of dual credit students is helping to achieve that. Understanding most literature is in agreement; hence the first teaching sub-question (PQ2a) is – *How do dual credit students perform in university courses?*

Core Course Enrollment – (Pillar Question 2b)

Historically, dual credit courses focus on academic core curriculum to ensure that credits transfer to universities. Miller et al., (2017) reports that the most common courses students took from 2012-2015 were freshman English, history, and government, "all of which are either mandated by state statute or nearly universally included as required core academic coursework for an associate or Bachelor of Arts degree in Texas" (48). It makes sense that students are getting the early courses out of the way in high school so that when they enroll in college, they can move into upper-level coursework saving time and money.

However, the literature shows that credit does not always transfer. Holloway (2010) reported that students are surprised to learn that universities do not always accept their core dual credit courses. Often the courses count as elective credit but do not count towards their degree. Occasionally the credit is accepted, but the student is told to retake that course to ensure that they succeed in the next sequenced course. Holley (2016) explains that different higher education institutions may require a different number of credit hours for core curriculum subjects. By examining 2015 data, Holley (2016) found that of the 703 core courses analyzed, 95.87% counted towards student degree credit, and 4.13% did not. While it certainly is frustrating for those students in the minority, the fact that over 95% of dual credit core courses counted for degree credit in 2015 implies that the demand for these courses at universities is less than it was before they began to participate in dual credit. Institutions operate based on degree plans and course sequencing, hence the second teaching sub question (PQ2b) – *How do dual credit students impact enrollment in core courses?*

Administration – (Pillar Question 3)

Higher education administrators are responsible for handling institutional finances, as well as ensuring the academic success of their students. Dual credit students affect both aspects of administrators' work by introducing a new variable that affects budgeting and graduation rates. But even before dual credit enrollment, universities were faced with decreased state investment causing them to increase tuition and shift that cost burden to parents and students (Watkins & Daniel, 2017). Willett, Andrew, & Rudisill, (2016) note that the decrease in state funding means, "that public colleges and universities have had to be creative in order to sustain access and quality by diversifying revenue sources and becoming increasingly cost-efficient." (p.221).

State and federal leaders set out ambitious higher education goals. Texas recently released 60x30TX, which is the state's strategic plan to support 60% of Texans in achieving postsecondary degrees by 2030 (Texas Higher Education Coordinating Board, 2015).The increasing cost of higher education coupled with pressure to improve graduation rates has spurred growth in dual credit programs (Miller et al., 2017). If more students are taking college-level coursework in high school or at a community college, then universities are missing out on that revenue. However, the research is limited as to how growth in these programs affects university administrative functions. Therefore the third pillar question (PQ3) is – *What is the effect of dual credit enrollment on administrative functions?*

University Budgeting – (Pillar Question 3a)

The budget of a higher education institution is like any other organization, a representation of its goals and mission (Goldstein, 2005). As previously mentioned, universities are receiving less

state funding along with demands for more stringent accountability. Lasher and Greene (2001) argue that institutions are entering an era of "budget reform" (p. 512). Institutions must effectively use the scarce public and private resources they receive to implement education goals.

Zierdt (2009) outlines several commonly used budgeting tools in higher education including incremental budgeting and program budgeting. Incremental budgeting is the most common system and uses previous dollar amounts as a basis to increase or decrease based on perceived need. Program budgeting is broken down further and requires the administrator to know how and why funds are spent in a specific area. Zierdt (2009) notes that an advantage of program budgeting is that it works compatibly to support an institution's priorities. A third, increasingly-common budgeting technique employed by universities is responsibility-centered budgeting (RCB). RCB considers academic departments as separate entities that are expected to be self-supporting cost centers. RCB is a technique consistent with the current budget reform era Lasher and Greene (2001) referred. The goal is to increase efficiencies within departments and keep costs low.

Capaldi & Abbey (2011) discuss the importance of cross-subsidies in higher education by both discipline and level of instruction: "When undergraduates pay the same tuition for all programs, money must be taken from programs that are inexpensive to produce (e.g., the humanities) and given to those that are more expensive to produce (e.g., science and engineering)" (p.11). Capaldi & Abbey (2011) analyzed 2009 data from Florida public universities that reports lower-division courses cost $70 less (per credit hour) to administer than upper-division courses. These cross-subsidies are a budgeting strategy dual credit enrollment directly interrupts. The literature reveals that fewer students are taking their lower-level core

subjects at universities, hence the first administration sub-question (PQ3a) – *How do dual credit students impact university budgeting?*

Graduation Rates – (Pillar Question 3b)

Graduation rates are central to the mission of all higher education institutions. Accountability was mentioned several times in this literature review, and increasing graduation rates is one of the primary figures by which we measure universities. Lawmakers and citizens hold university administrators accountable by examining how efficiently universities are graduating their students. Graduation rates are effectively a proxy for effective higher education administration. Luckerson (2013) points out that while we traditionally think of a college education lasting four years that according to the U.S. Department of Education, "fewer than 40% of students who enter college each year graduate within four years, while almost 60% of students graduate in six years." There are several reasons for delaying graduation, but dual credit aims at addressing the increasing cost of education. If high school students can simultaneously earn high school and college credit, they can enter universities ready to take upper-division courses. Dual credit saves students the time and money spent by a traditional college freshman who completes lower-division coursework on-campus. However, as discussed earlier, many students are faced with college credits that do not count towards degree plans, and they must retake the course (Holley, 2016). The issue of transferability has plagued dual credit since the programs began. Tobolowsky (2016) references Greenberg (1989) who discusses Wilbur and Lafay's (1978) study which reported that 10 percent of students' dual credits did not transfer and that "15% received credit but not an exemption from the course" (Greenberg, p.24).

Additionally, Miller et al., (2017) discovered that dual credit programs vary in quality measured specifically by the lack of educator preparation standards. Therefore many students arrive inadequately prepared and unable to place into subsequent courses causing them to re-take courses at the university level. The literature indicates that participation in dual credit is positively associated with several postsecondary achievement measurements Allen & Dadgar, 2012; Karp et al., 2007; Swanson, 2008, Giani, Alexander, & Reyes (2014). However, articulation issues and inadequate preparation could mean that dual credit enrollment does not shorten time to degree. The second administration sub-question (PQ3b) is – *How do dual credit students impact graduation rates?*

Summary of Conceptual Framework

Table **2.1** summarizes the pillar questions and links them to the literature. The three pillar questions which focus on advising, teaching, and administration are used to organize the subsequent interview questions.

Table 2.1 - Conceptual Framework

Title: Exploring the Growth of Dual Credit Education in Texas **Purpose:** The purpose of this applied research project is to explore how university faculty perceives the impact of dual credit programs on advising, teaching and administrative systems.	
Pillar Question	**Supporting Literature**
Pillar Question 1: What is the effect of dual credit enrollment on student advising?	Cigarroa (2014); White (2015); Miller et al. (2017)
PQ1a – *Types of Advising* – How do dual credit students impact the types of advising needed?	Drake, Jordan, & Miller (2013); Crookston (2009); Allen & Smith (2008); Habley (2004); Hood, Hunt, & Haeffele (2009); White (2015)
PQ1b – *Training of Advisors* – How do dual credit students impact the training that advisors receive?	Miller et al. (2017); Holley (2016); Allen (2013); Hood, Hunt, & Haeffele (2009)
Pillar Question 2: What is the effect of dual credit enrollment on teaching?	Tobolowsky (2016); Miller at al. (2017); Phelps & Chan (2016);
PQ2a – *Student Performance* – How do dual credit students perform? (i.e. GPA, retention, remediation)	Allen & Dadgar (2012); Karp et al. (2007); Swanson (2008); Bailey, Hughes, & Karp (2002); Giani, Alexander, & Reyes (2014); Miller et al. (2017)
PQ2b – *Core Course Enrollment* – How do dual credit students impact enrollment in core courses?	Miller, et al. (2017); Holloway (2010); Holley (2016)
Pillar Question 3: What is the effect of dual credit enrollment on administration?	Watkins & Daniel (2017); Willett, Andrew, & Rudisill, (2016); Texas Higher Education Coordinating Board (2015); Miller, et al. (2017)
PQ3a – *University Budgeting* – How do dual credit students impact university budgeting?	Goldstein (2005); Lasher and Greene (2001); Zierdt (2009); Capaldi & Abbey (2011)
PQ3b – *Graduation Rates* – How do dual credit students impact graduation rates?	Luckerson (2013); Holley (2016); Miller, et al. (2017); Allen & Dadgar (2012); Karp et al. (2007); Swanson (2008); Giani, Alexander, & Reyes (2014)

Chapter III – Methodology

Chapter Purpose

The previous chapter introduced a pillar questions conceptual framework as a way to explore the impact of the growth of dual credit in Texas higher education. Each pillar question (advising, teaching, administration), and sub-question was linked to informative literature sources. This chapter explains how conducting interviews with university personnel based on research-backed pillar questions should shed light on the many ways dual credit will influence Texas higher education.

Methodology

Research methods are important to the research question or purpose at hand. The appropriate methodology will further refine the research question by narrowing the focus of data collection. For example, interviewing university personnel who are experts in the fields of advising, teaching, and administration will begin to reveal the perceived impact of dual credit enrollment.

This applied research project utilizes qualitative interviews based on research-backed pillar questions. Interviews with university personnel intend to reveal the perceived impact of dual credit programs on particular university systems: advising, teaching, and administration. The relatively unstructured nature and open-ended nature of interviews lend itself nicely to an exploratory research purpose because exploration occurs early on and is an attempt to uncover initial ideas and information (Shields and Rangarajan, 2013; Shields and Whetsell, 2017). The pillar questions in **Table 3.1** provide the structure for the qualitative inquiry and guidance for interview question development.

Research Design

The structure and form of the interview questions are developed or operationalized in **Table 3.1**. The interview questions are linked to the three pillar questions and sub-questions, which focus on the effect of dual credit programs on advising, teaching, and administration. These questions are derived from a thorough literature review and serve a starting point for the interviews with university personnel. For example, the advising interview questions such as “How do dual credit student advising needs compare to traditional transfer students?” are linked to the types of advising (PQ1a) question in the first row.

Table 3.1 – Operationalization of the Conceptual Framework

Title: Exploring the Growth of Dual Credit Education in Texas **Purpose:** The purpose of this applied research project is to explore how university faculty perceives the impact of dual credit programs on advising, teaching, and administrative systems.	
Pillar Question	**Open ended Research Questions**
Pillar Question 1: What is the effect of dual credit enrollment on student advising?	
PQ1a – *Types of Advising* – How do dual credit students impact the types of advising needed?	1. How do dual credit student advising needs compare to traditional transfer students? 2. How often are students required to meet with advisors? 3. What kind of online advising resources do you offer? 4. What is the student to advisor ratio? 5. Additional questions as merited
PQ1b – *Training of Advisors* – How do dual credit students impact the training that advisors receive?	1. How are advisors trained? 2. What kind of dual credit training do advisers receive? 3. Additional questions as merited
Pillar Question 2: What is the effect of dual credit enrollment on teaching?	
PQ2a – *Student Performance* – How do dual credit students perform? (i.e. GPA, retention, remediation)	1. Do dual credit students require remediation? 2. How do dual credit students affect other students? 3. How is the quality or rigor of upper-level coursework affected by dual credit students? 4. Additional questions as merited
PQ2b – *Core Course Enrollment* – How do dual credit students impact enrollment in core courses?	1. What is the impact of dual credit students on the number of core course offerings? 2. What is the impact of dual credit students placing out of specific core courses? (i.e. humanities, English) 3. Additional questions as merited
Pillar Question 3: What is the effect of dual credit enrollment on administration?	
PQ3a – *University Budgeting* – How do dual credit students impact university budgeting?	1. How do dual credit students affect university budgeting? 2. How are dual credit students affecting the funding cross-subsidies currently embedded in the university business model? 3. Additional questions as merited
PQ3b – *Graduation Rates* – How do dual credit students impact graduation rates?	1. What is the influence of dual credit students on graduation rates? 2. How do dual credit students compare to traditional students regarding their persistence and completion? 3. Additional questions as merited

Data Source

The thrust of this applied research project is qualitative interviews with university personnel who are experts involved in university advising, teaching, and administration. The project utilizes snowball sampling to recruit interview subjects. The names, positions, or universities are not mentioned anywhere in this applied research project. Identification was not necessary to the research purpose, and respondents were relieved and more forthcoming when they knew their name would not be associated with the comments. Interviewing experts who are working in the system is beneficial because they are experienced in the subject matter at hand. This qualitative method allows the research to explore dual credit issues with people who have varying perspectives within the university systems. Interviews are an effective way to begin to explore the impact of dual credit on university systems, because of the in-depth and open-ended nature of interviews. University personnel is be able to speak at length about specific examples or go into detail about an impact that may not be anticipated by the researcher (Yauch and Steudel, 2003: 472)

However, there are some weaknesses to this research technique. Interviews are both labor-intensive and time-consuming; therefore the sample size is often small. A small sample size can mean that the research results or data collected may not be widely applied. In this specific case, the vast differences in Texas's university systems may result in completely different perception surrounding how universities experience dual credit enrollment. In an effort to moderate this limitation, this project recruited personnel from both traditional and non-traditional Texas institutions. There may still be an issue of bias because the interview subjects are experts within the system. Choy (2014) elaborates to say, "As positioned subjects, personal

experience and knowledge influence the observations and conclusions" (102). In general, the strength of interviews is validity, while their weakness is reliability caused by leading questions. Kvale (1994) advises researchers to set aside the concern about whether to lead or not to lead with interview questions and to focus on, "whether they [questions] lead in important directions, yielding new and worthwhile knowledge" (156). Understanding the strengths and limitations of this applied research project, conducting qualitative interviews will still deliver important insight into the perceived impacts of dual credit on Texas university systems.

Sampling

Babbie (2010) describes snowball sampling as a "non-probability sampling method, often employed in field research, whereby each person interviewed may be asked to suggest additional people for interviewing" (193). Snowball sampling is appropriate for this research topic because the goal is to speak to university personnel with extensive knowledge and expertise on each system at question. While possible, it is unlikely to find the most appropriate interview subject during the initial recruitment. The university personnel participating in these interviews are more familiar with their organizations and will be able to suggest additional subject-matter experts.

Interviews

The sample size of this applied research project was fairly small, because of the short time frame and how labor intensive the interview process is. Seven interviews were conducted during March 2018, and all took place by phone, except for one online chat format because the subject had lost their voice. The interview subjects are university personnel from three public four-year universities in Texas. All respondents work at large universities. Two of the institutions

represented attract a more traditional student population, while the third tends to educate commuters and transfer students. Capturing the perceived impact of dual credit on different kinds of institution strengthens this project. The interviews include university personnel from various disciplines, for example, there are advisors of colleges of arts, applied sciences, and undeclared; as well as teachers and administrators of science and humanities. It was important to explore the perceived impact of dual credit on as many disciplines within the university as possible to better understand the applicability of the findings. This research project revealed that many university personnel fills several roles at their institution. For example, a professor might also be a department chair and oversee curriculum and therefore be able to speak to not only teaching but also administration issues. Many of the respondents were able to answer questions in two or three of the broad pillar questions.

These interviews combined to over four hours of recorded audio, which was then transcribed into note format and thoroughly discussed in the following chapter. The open-ended interviews began with the pillar questions the respondents were knowledgeable about, for example; advisers answered questions about advising, professors answered questions about teaching, and administrators answered questions about administrative systems. The open-ended nature of the interviews assumed that these questions were imperfect and allowed the interview subjects considerable breadth to speak to what they felt was most important within the subject area of dual credit. The following table **3.2** outlines the dates, times, and lengths of interviews, as well as which pillar questions were discussed.

Table 3.2 – Interview Log

Interview Number	Date and Time	Length	Pillar Questions Asked
1	3/6/2018 10:00 AM	33:53	PQ1 (advising)
2	3/7/2018 2:15 PM	20:13	PQ2 (teaching)
3	3/8/2018 9:00 AM	49:04	PQ2 (teaching) & PQ3 (administration)
4	3/8/2018 11:30 AM	26:41	PQ1 (advising) & PQ3 (administration)
5	3/19/2018 3:30 PM	42:25	PQ1 (advising), PQ2 (teaching), PQ3 (administration)
6	3/20/2018 10:30 AM	43:10	PQ2 (teaching)
7	3/22/2018 12:00 PM	26:10	PQ1 (advising), PQ2 (teaching), PQ3 (administration)

Human Subjects Protection

Interview subjects were provided with an informed consent document that outlined the purpose and background of these applied research project. Additionally, this form described the collection and confidentiality procedures, as well as explaining that there would be no compensation and that participation was voluntary. There was no anticipated risk to individuals from participating in this project. A copy of the informed consent document is located in Appendix A

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Chapter IV – Results

Chapter Purpose

The previous chapter presents the operationalization framework that links three broad pillar questions and their six sub-pillar questions to an initial set of interview questions. This chapter details the responses of university personnel to the sub-pillar questions framework detailed in **Table 3.1**. Due to the exploratory nature of this applied research project, the interviews revealed information connected to the research purpose that was not covered in the initial interview questions. The additional information provided by respondents is included at the end of the most appropriate broad pillar question section.

Advising – (Pillar Question 1)

Four respondents were able to answer questions about their perceived impact of dual credit on advising at institutions. Discussing dual credit issues with advisors was enlightening. In a way, they feel as though they are the gatekeepers for student success at universities and take that responsibility seriously. Their role is administrative in nature; therefore they are able to look at dual credit students holistically and determine what advising changes need to be made to respond to this new type of student arriving on campus. Often dual credit students lack the maturity and soft skills that other students in upper-level coursework possess. And at least one university is responding by implementing dual credit training for all academic advisors.

Types of Advising – (PQ1a)

How do dual credit student advising needs compare to traditional transfer students?

All respondents noted that this was a broad question and did not feel that they could speak on behalf of all dual credit students on their campuses. During an interview with an advisor, she explained that students who come into college with dual credit have achieved that credit in a variety of ways. The courses may have been taken on a high school or community college campus and with all different types of faculty, who have varying levels of preparation. Therefore there can be high variances between dual credit students. Dual credit students are enrolling in universities with anywhere from six to sixty hours of college credit. However, respondents reported that the average dual credit student enrolls with around twelve hours. She also found it challenging to advise dual credit students which courses to enroll in, because regardless of how many hours they may have it's difficult to know if a student has mastered the curriculum enough to succeed in upper-division coursework.

Unlike transfer students, most incoming freshmen attend a summer orientation where they sit down with an advisor and choose their fall schedule. A point of frustration from one of the advisors was that dual credit students often forget to bring all of their transcripts to the initial advising appointment. For example, they may have taken a class at a community college and received high school credit, but advisors also need access to their community college transcript in order to place them in the appropriate next course.

In general, advisors felt that dual credit advising needs are similar to those of traditional transfer students, with the important exception of maturity. All three respondents in this section spoke about how dual credit students may be further along in their academic career, but are still

lacking in the development of soft skills. One respondent identified time management, coursework rigor, and how to thrive in an unstructured environment as challenges particular to dual credit students.

How often are students required to meet with advisors?

All universities ask that incoming freshman meet with an advisor during orientation. One respondent said that his university puts a hold on a student's registration until they meet with an advisor. After freshman enrollment, advisors said that the frequency of meetings depended on the students' major. Different academic colleges have their own guidelines and can enforce their own registration policies. Students who are on academic probation are required to meet with an advisor more often for guidance. This intervention gives advisors a chance to diagnose why a student may be struggling and refer them to other resource offices on campus that can address their needs.

All advising departments encourage students to meet with an advisor at least once a year, but students rarely do so. While this answer varied, a common concern expressed by advisors was that they wished students would meet with advisors more frequently throughout their academic career. "The students who tend to get off track are those who don't check in with us [advisors]," (Interview 1). This sentiment was especially felt about dual credit students because their advising tends to be more complicated.

What kind of online advising resources do you offer?

Every advisor described comprehensive online advising services for students. At any point in their academic career, students can use an online degree audit system or download a degree

checklist tailored to their major. Advising officers also offer video conferencing for students who are unable to make it to campus for a meeting. One respondent was testing a new approach that allowed students to contact their advisor through and an online portal where the advisor can then choose their classes for the next semester based on what a student still needs to graduate. He was surprised by the positive response and participation from students and subsequently admitted he might have gotten in a little over his head.

What is the student to advisor ratio?

This answer depended on the academic college since they all have their own advising departments. One respondent who worked with undeclared students said their ratio was around 300:1. Another advisor who works in a science department said the ratio could be as high as 600:1. But the general feeling was most colleges are between 300 and 400:1.

Training of Advisors – (Pillar Question 1b)

How are advisors trained?

All of the advisors said that their advising staff come from a variety of background and may have a degree in something, not at all related to the major of their students. One department head said that his advisors are considered generalists and can advise students in every major but receive specialized training for their college. All advisors go through training on general, university procedures.

At this point, the method of training depends on the university. One university only requires advisors to learn all of the software platforms and degree auditing system. Another university pairs an incoming advisor with a more senior advisor and only as they become more

proficient in university procedures and degree planning do they begin to see students on their own.

Something that all universities require is continuing education or enrichment opportunities for advisors. Personnel is required to take a certain number of hours of continuing advising education based on their college. This enrichment can be an in-person seminar, online class, or book report. All advisors agreed that the continuing education was beneficial as the landscape of higher education has changed and they want to be sure their staff is properly prepared to advise a 21st-century workforce.

What kind of dual credit training do advisers receive?

Two respondents did not believe that university advisors received any supplemental training on dual credit issues. In their opinion, dual credit students look like transfer students, and they receive transferability training. Advisors learn course numbering and do their best to apply their students' previous coursework towards a degree plan.

However, one university does require that their advisors are trained specifically on dual credit issues. Again this respondent reiterated that lack of maturity is a common issue that advisors must address with dual credit students. He also shared that advisors from each academic college have regular meetings to discuss issues with one another. Dual credit is a major topic of concern and conversations during these meetings. "Some colleges deal with it [dual credit] more than others because more students are taking their courses through dual credit," (Interview 7). For example, dual credit students are taking mainly math and humanities credit, therefore, those departments are more affected than the English department.

Other Advising Issue - Transferability

University advisors expressed frustration over transferability of credits. Students are not always seamlessly progressing through sequential courses because the offerings on secondary and community college campuses do not reflect the lower-level coursework of the universities. Advisors emphasized the difference between core requirements and degree requirements. A degree in veterinarian sciences, for example, requires specific lower-level classes other than core courses and students fail to understand the distinction. This confusion can lead to frustration for both students and university advisors. Unless a student is inquiring with their university directly before enrolling in high school dual credit courses, there is a strong possibility they are receiving inadequate advising and will face problems with transferability.

Table 4.1 - Pillar Question 1 Results Summary

PQ1a: Types of Advising	• Dual credit students lack soft skills and are less mature than traditional students. • Advisors find it difficult to determine whether dual credit students have mastered the curriculum enough to enroll in upper-level courses. • Students receive in person advising at freshman orientation and schools recommend meeting with advisors once a year until graduation. • Advisors want students to meet with them more frequently. • Schools provide online course planners and degree audit systems. • Advisor to student ratio varies by academic college, but most are 300-400:1.
PQ1b:Training of Advisors	• All universities require supervised training and continuing education. • Advisors from different academic colleges meet regularly to discuss advising issues. Dual credit is often a subject of discussion. • Only one university interviewed receives dual credit training.
Additional Issue: Transferability	• Advisors distinguished between core requirements and degree requirements. Not all degree requirements are offered through dual credit. • Students faces issues of transferability, because the offerings in dual credit programs do not always reflect the lower-level coursework of universities.

Teaching – (Pillar Question 2)

Five of the seven respondents were able to answer teaching-related questions about student performance and core course enrollment. And of all three broad pillar sections, dual credit appears to impact teaching and its pillar sub-questions the most. The respondents in this section represent both traditional and non-traditional institutions, as well as various academic disciplines. This cross-section offers varying levels of perspectives on teaching and student comprehension. In general, faculty felt that dual credit students were not always adequately prepared for upper-level coursework and discussed specific examples of seeing students struggle. All indicated that dual credit is causing issues in our classrooms and felt it was important for universities to improve how dual credit students perform academically.

Student Performance – (Pillar Question 2a)

Do dual credit students require remediation?

Dual credit students achieve college credit in many different ways, so personnel felt they were unable to speak on behalf of all dual credit students. However, respondents said that some dual credit students do require remediation. Faculty explained that dual credit students specifically struggle with critical reading skills and writing skills.

One professor elaborated that it is especially difficult to watch a student struggle with writing. She said that she would sit down with students and they can articulate original thoughts and ideas, but face difficulty when putting those thoughts down on paper. The same professor noted that many dual credit students are motivated and hard-working, but most have not received

adequate preparation in high school or community college to immediately succeed in upper-level coursework.

Finally, a professor responded that he felt even when dual credit – and transfer – students require remediation they rarely attend tutoring or seek out other resources on campus. He felt as though younger, dual credit students are not aware of what support services universities have for students and that this was something that summer orientation should cover.

How do dual credit students affect other students?

Dual credit students are entering upper-level courses with no college experience, which respondents felt presents problems for these students. University personnel did not feel that dual credit students had any effect on older classmates but quite the opposite. Often professors will have an 18-year-old dual credit student in upper-level coursework with a 22-year-old college student and this can cause dual credit students to feel intimidated. One humanities professor explained that these practices the Socratic method of teaching and recognizes that dual credit students feel less comfortable speaking up when called upon to answer a question.

Dual credit students may find it difficult to identify with an older peer group, especially when they are asked to share their own experiences in class. One professor thinks we may be overlooking what is means for students to be "successful" and should be paying attention not only to how dual credit students are faring academically but also how they are progressing socially. All respondents were sympathetic to dual credit students who feel out of place in upper-level courses. These classes tend to be smaller, which allows for group discussion. And professors worry that dual credit students are not reaping the full benefit of the coursework because they feel uncomfortable or out of place.

A respondent did mention one specific dual credit student behavior that affects other students. She feels as though younger students are more likely to use their cell phones during class, due to lack of maturity. This professor said that dual credit students are still adjusting to the lack of structure in college classes and can take that too far and distract the professor and other students.

How is the quality or rigor of upper-level coursework affected by dual credit students?

Faculty responded strongly to this question. They all insisted that upper-coursework has remained rigorous, even if younger, less-prepared students are taking the classes. However, one respondent recognized that there has always been an issue of reaching down to teach unprepared students, because of the big gap between high school and college education for some students. She said that this can be even more pronounced now that dual credit students are jumping from high school to junior-level college work, whereas they used just to be entering freshman-level work. She feels as though universities need to work on developing curriculum in the "middle range" that will allow all students to build their academic skills.

One respondent, who had spoken earlier about dual credit students' tendency to struggle with writing brought that issue up again while answering this question. She said she finds it difficult to balance ensuring dual credit students are grasping the content when they need such intensive writing support. She also notices that dual credit students lack the coursework that teaches them to write comparatively. Upper-level humanities courses at this university require interpretive essays that ask students to draw from previous coursework. Dual credit students have not taken these classes and are unable to make those critical comparisons.

This same professor also expressed that dual credit students require more guidance from the instructor. They are constantly seeking feedback and want the kind of support they received in high school. She explained that part of the education for students is identifying on their own what is significant in the text. And she feels as though she is unable to get to that level of instruction with dual credit students because they need so much guidance.

A professor brought up an interesting point when defending the rigor of upper-level coursework at her university. She explained that different faculty teach lower and upper-division coursework and rarely if ever do they discuss the quality of students progressing through the pipeline. She suggested that more collaboration between lower and upper-level faculty could potentially adjust the rigor of their curriculum. And while all respondents did not worry about the quality if upper-level coursework currently, they all acknowledged that the growing number of dual credit students could have an impact and it was something universities should closely monitor.

Core Course Enrollment – (Pillar Question 2b)

What is the impact of dual credit students on the number of core course offerings?

Core courses are a pre-determined set of classes that students must complete in order to graduate. Faculty and administrators did not believe that dual credit had significant impact on the number of dual credit course offerings too much yet, however they all provided valuable insight about core offerings.

One faculty member explained that because her university is so large, those core courses are still widely available and necessary. She did note, however, that she has noticed a trend among universities of assigning adjunct faculty to teach lower-level coursework. This

adjustment is concerning to her because they typically have less teaching experience and fewer resources. She hopes that tenured faculty will begin teaching lower-level classes, but acknowledges that using adjunct faculty save the university money.

One academic advisor explained that the difference in core coursework and degree requirements affects which classes are necessary for students. Many degrees require specific lower-level coursework that is not offered to students through dual credit programs. For example, a professor of dance explained her students move through the academic pipeline as traditional students because introductory dance courses are not offered through dual credit. All dance majors will need to enroll in the lower-level requirements at her university.

A professor who also oversees academic affairs at her university hopes that her university will examine the number of available core courses moving forward. "I don't think core courses are less necessary because of dual credit yet, but they might be in four to five years," (Interview 5). Other faculty members agreed that universities may begin to see a shift in the futures. All respondents shared that dual credit could be having a more measurable impact on the number of core courses at smaller universities.

What is the impact of dual credit students placing out of specific core courses?

Dual credit students placing out of specific core courses appeared to be the most problematic enrollment issue for universities. Several respondents who teach upper-level courses shared that students are placing into their classes completely unprepared for the coursework. There was a general concern about the need to better coordinate which lower-level courses are substituting for the traditional pre-requisite. Faculty and staff shared that dual credit can affect students'

schedules so that they are enrolled in an introductory course and upper-level course at the same time, making it impossible to build upon prior knowledge.

The two math and science professors interviewed did not see unpreparedness as an issue caused by dual credit because of their specific degrees. Science, technology, engineering, and math (STEM) degree plans are sequential, meaning most of their degrees will take students four years regardless of what credit they earn in high school. STEM majors, instead, are challenged with unbalanced course loads their freshman year because of dual credit. Ideally, first-year students will have a good mix of english, humanities, math, and science. However, because many students are completing humanities through dual credit, their freshman course load can potentially be all math and science courses. These professors believe the lack of balance for STEM dual credit students can be too challenging and overwhelming, especially for their first college semester.

Lack of course load balance may only affect STEM students, however, running out of courses to take affects students in every college on campus. All faculty mentioned that because many plans are sequential and take four years, dual credit students are running out of courses to fill a fulltime schedule their junior or senior year. Advisors often recommend students to pick up a minor, additional major, or begin taking graduate-level classes and start working towards a master's degree. Many students need to remain enrolled full-time in order to receive federal financial aid, and universities are advising students to pick up additional, unnecessary coursework to remain in compliance with these rules.

One faculty member said that his university is already beginning to examine moving faculty around in order to respond as dual credit begins to change which courses are in high demand. In his experience, students are placing out of math and humanities courses through dual

credit which is putting more stress on the upper-division courses in those subject areas. He is looking at adding additional advanced courses for these dual credit students.

Again, respondents reiterated that many dual credit students lack maturity and soft skills to be successful in more advanced courses. One professor shared that her dual credit students miss substantial formation and intellectual maturation and that she cannot teach these skills in one semester. She compared placing out of dual credit courses to starting a new job under or unprepared. "It's like coming to do a job that no one prepared you for and when you get to that job the boss thinks you've already been prepared based on your credentials," (Interview 6). University personnel believed that, in general, placing out of core coursework through dual credit caused many problems for both the students and their institutions of choice.

Other Teaching Issue – Plagiarism

University personnel raised the issue of plagiarism among dual credit students. One professor believes that students who take dual credit may be more inclined to cheat in her advanced courses. Dual credit students can potentially be overwhelmed by the difficulty of classwork and turn to cheating as a way succeed. "I have started to say [to students] when you're feeling overwhelmed don't cheat just come see me," (Interview 4). She thinks dual credit students may also be plagiarizing more than other college students because they do not fully understand what it is. Out of necessity, this professor has begun heavily emphasizing plagiarism at the beginning of the semester.

Table 4.2 - Pillar Question 2 Results Summary

PQ2a: Student Performance	• Dual credit students struggle with writing skills. • Dual credit students who require remediation fail to utilize tutoring resources on campus. • Dual credit students can be intimidated by older students and less likely to speak up in class. • Dual credit students are immature and use cell phones in class more then traditional students. • Dual credit students to not affect the rigor of upper-level coursework, even though many are inadequately prepared.
PQ2b: Core Course Enrollment	• Dual credit students are not affecting the number or type of core course offerings, but they might in 4-5 years. • Certain majors don't offer any core coursework through dual credit, so these core courses are still necessary. • Dual credit STEM students struggle to balance their schedules, because they only have math/science courses left. • Dual credit students run out of enough courses to take by junior/senior year to remain full time. Therefore, many students pick up a minor or start a masters program. • One university is already examining future core course offerings. • Smaller universities might be seeing more of an impact than the large universities interviewed.
Additional Issue: Plagiarism	• Some dual credit students resort to plagiarism, because they feel overwhelmed in upper-level coursework. • Some dual credit students don't understand what plagiarism is and one professor has added an explanation to her curriculum.

Administration – (Pillar Question 3)

Four respondents chose to answer the questions about how dual credit affects administrative functions at their university. It was interesting to listen as university advisors and faculty put on their administrator hat and tried to answer these questions from that perspective. It is worth noting that only one respondent worked solely in administration. Therefore some of the responses in this section may be influenced by serving in multiple capacities at their university.

University Budgeting – (Pillar Question 3a)

How do dual credit students affect university funding and budgeting?

University administrators did not feel that dual credit students have much of an impact on funding and budgeting at their universities. Although institutions draw funding from the state based on semester credit hours[1], the university receives that money as a lump sum. After universities receive their funding from the government and tuition that money is spent in however that university may choose. Universities can be flexible with funding and decide internally how much money to spend in each department.

Similarly covered in the previous section, university administrators are beginning to make adjustments about which academic colleges are in greater need of faculty. For example, if more students are placing into upper-division classes, then a university may need to invest in faculty which can teach those courses. These faculty can be more expensive than less

[1] General Academic Institutions receive state formula funding based on semester credit hours and a program/level weight. Each student in each course is calculated. For example, lower division liberal arts courses receive a 1.00 weight and upper division engineering courses receive 3.52 weight. (Legislative Budget Board, 2016)

experienced, or adjunct faculty teaching introductory coursework. However, respondents felt their universities were too early in this adjustment phase to notice a high-level financial impact.

Personnel predicted that as more students take dual credit, funding may become an issue for them. Smaller universities may notice a funding disparity, because of dual credit enrollment before the large university personal represented. Several respondents felt this question would have more effect on two-year, community colleges, which are offering the same course offerings as high schools. As previously discussed, many bachelor's degrees require low-level courses that are not offered through dual credit. For example, a specific math or science course. Therefore, universities are still receiving funding from enrollment in those courses.

How are dual credit students affecting the funding cross-subsidies currently embedded in the university business model?

Universities contain many cross-pressures and cross-subsidies because they are large organizations and operate with a certain business model. For example, many large freshman classes subsidize the more expensive, upper-level STEM classes. If dual credit students are placing out of these less expensive courses, it could provide less funding for more specialized disciplines. Respondents recognized this internal balance and had interesting opinions to offer.

One administrator said she believed that STEM courses would feel impacts of less semester credit hour funding sooner than other disciplines because they are more expensive to maintain. However, she was not aware of any large concern within her university. She reiterated that because funding decisions are made for the entire university and not by the department, universities will be able to make adjustments to support various departments who may be "in the red."

Another important point of clarification was that not all entry-level courses are cheap to administer. And administrator who also teaches explained how introductory english and math courses tend to have a low teacher to student ratio, with no more than 30 students. She recommended considering this ratio rather than the subject area when determining which departments, or courses, are more costly.

Again university personnel spoke about how the size of their universities affects funding issues. All institutions have certain overhead costs, not based on the size of student population. Large universities have more flexibility to shift money and cover costs because of the amount of money they receive based on enrollment. Small universities, however, may feel the impact of less funding in one department sooner than the large universities.

According to these respondents, dual credit does not seem to be affecting the university business model. However, the size of the institutions interviewed and the fact that Texas is only a few years into the new statewide education plan that emphasizes dual credit could be why it is not more of an issue yet. Two respondents predicted that several years from now, once the state completes the current education plan – 60X30TX – in 2030, dual credit will be affecting university funding.

Graduation Rates – (Pillar Question 3b)

Graduation rates are commonly cited as a benchmark for evaluating universities. Various stakeholders including lawmakers and parents believe that dual credit students will complete college in less than four years because they have completed college-level coursework before they have even stepped on a university campus. However, issues of transferability and differing degree requirements between colleges appear to be making this stated goal of dual credit –

shortening the time to degree – more challenging. University administrators are beginning to be concerned about being scored on graduation rates when they are receiving students with varying levels of college preparation. All universities believe in strong metrics and self-evaluation, but dual credit is a new variable that could be weighing down some universities more than others.

What is the influence of dual credit students on graduation rates?

University faculty had varying impressions regarding the rate at which dual credit students are completing college compared to traditionally prepared students. One administrator believes that dual credit students are completing at higher rates than non-dual credit students, but made a clear distinction. Students who come in with previous credit through careful planning and a roadmap for success are completing college quickly; "wandering" students who have achieved college credit without any foresight are not completing college at faster rates.

One professor shared that in his experience, it is taking dual credit students much longer than they anticipated to complete college. He works in a college with mostly STEM students, and these degree plans require sequential coursework that takes four years, regardless of what credit students take in high school. Instead. he believes students should focus on other noted benefits of dual credit, like experiencing rigorous coursework in a supportive environment.

Another administrator does not believe dual credit is having a major impact on shortening the time to degree because of degree requirements. As discussed in previous sections, some degrees require students to take other lower-level courses that are not offered in dual credit programs. She also explained that if a student is coming into college with six hours of transferable credit, for example, that is shortening that student's time to degree by two classes. Students would have to be placed out of 12-15 hours to graduate even a semester early. She

shared that the only students who are completing more quickly are the students who come to college "core complete," which is very rare. Typically these are students who attended an early college high school that partnered with that university, so the coursework rigor is previously approved.

And finally, one administrator from a university with more transfer and first generational students believes dual credit is having a negative impact on graduation rates for those students. She echoed the sentiment of early respondents who witnessed dual credit students feeling overwhelmed by upper-level coursework. She also mentioned the issue of first-generation students needing to retain their financial aid to stay enrolled. Dual credit students from wealthier families are able to balance their schedules with courses that are not degree requirements, whereas students dependent on financial aid do not have the option or risk losing federal assistance. She predicts that rigidity and lack of emotional preparedness for college will cause first-generation college students who take dual credit to get overwhelmed and drop out in higher numbers. All respondents mentioned checking back five years from now to examine the data because Texas is still early on in our aggressive dual credit initiative.

How do dual credit students compare to traditional students regarding persistence and completion?

This interview question was similar to the previous question and received similar responses. One professor believes that dual credit students persist at the same rate as all first-time college students and cited social and challenges with acclamation as the biggest hurdles for all students. Another respondent believes it is taking dual credit students longer than they think that it will to graduate, but regarding completion, they are similar to traditionally-prepared students.

An administrator said he believes students are persisting at rates similar to other students. This university is the which has specifically targeted dual credit training for their advisors, and he credits that training for keeping dual credit students on track. Advisors are able to recognize course stacking that may lead to failure and intervene when students chose problematic course loads. He said his university recognized the different needs of dual credit students and made internal policy changes in order to accommodate their degree paths.

Finally, one administrator felt pessimistic about how dual credit students persist at her university. She claimed that data would reveal traditional students persist and complete at higher rates than students who take their core curriculum in high school through dual credit. She again restated the gap in experiences between first generation dual credit students and more affluent students. Dual credit students whose parents are paying for their college have the flexibility to try out different coursework and find the major that is right for them. First generation students who have completed most of their core coursework must stay on that degree path or lose financial aid. This respondent truly believes that experiencing different disciplines is a benefit to taking most of your core coursework on campus. And first-generation students who skip this opportunity face external pressures to remain on a strict degree plan. She worries this pressure is too much for some students and may cause them to quit attending college entirely.

Table 4.3 - Pillar Question 3 Results Summary

PQ3a: University Budgeting	• Dual credit students are not impacting university budgeting yet. • Universities are moving around faculty because of dual credit and this could impact department budgets. • Smaller universities may notice funding issues. • Embedded cross-subsidies are not being affected because universities receive funding as a lump sum. • STEM courses would feel funding disparities sooner than other departments because they are more expensive.

PQ3b: Graduation Rates	• Dual credit students take longer to graduate than they think, due to most degrees requiring sequential coursework.
	• Dual credit students who come into college with careful planning may graduate before traditional students.
	• Dual credit students who arrive at college "core complete" are graduating more quickly than traditional students. "Core complete" students are very rare.
	• One administrator believes first generation dual credit students persist and complete at lower rates than traditional dual credit students.
	  ○ First generation students are more likely to be using financial aid, which has stricter course requirements than traditional tuition.
	  ○ First generation students may be less prepared and more overwhelmed by upper-level coursework than traditional students.
	  ○ Lack of emotional preparedness
	  ○ (i.e. soft skills)

Chapter V– Conclusion

Chapter Purpose

The previous chapter reported the interview findings according to the questions linked to the three broad pillar questions and six sub-pillar questions. The pillar questions were established by the conceptual framework in chapter II. Chapter V completes this project by providing conclusions and recommendations based on the experiences of the interview participants. This exploratory research is preliminary in nature and is intended only to provide significant insight and not definitive conclusions. The conclusions and recommendations section is followed by **Table 5.1,** which lists future possible research topics derived from this applied research project.

Conclusions and Recommendations

University personnel all acknowledged that appeal and benefits of taking dual credit. They also understood that the growing cost of higher education is partly to blame for its rapid expansion and noted that they never want to get to a point where college is unaffordable for Texas families. The interview respondents featured in this applied research project were appreciative that someone was examining how the growing number of dual credit students is impacting them. They agreed with this project that most dual credit research thus far has been focused on the student and not the educational pipeline as a whole. Dual credit does serve a purpose, but according to university personnel, it is having a significant impact on the university systems of advising, teaching, and administration.

Advising

All advisors stated that their colleges require enrichment opportunities for their advisors. This project recommends that university advising departments should implement dual credit training as part of the continuing education. Advisors shared that they feel as if they are the gatekeepers for the higher education experience. By making an effort to ensure dual credit students are on the right path, advisors have the potential to improve outcomes for students. Additionally, if students begin to make better course decisions, advisors have the potential to decrease frustration among professors who struggle with unprepared dual credit students. And finally, ensuring that students are on a path to success could help alleviate issues of persistence and graduation among dual credit students. The administrator who cited the least amount of concern about dual credit students is the only university that provides dual credit training for their advisors.
Recommendation #1- university advising departments should implement dual credit training as part of the continuing education.

Teaching

Professors are faced with the difficulty of teaching unprepared students. Until that issue is solved lower down on the educational pipeline through increasing rigor of dual credit courses or stronger academic advising, professors are forced to focus on soft skills development. Most professors are unable to work one-on-one with students. But universities have writing labs and tutoring services that are able to work one-on-one with students who are struggling. Professors who used to only encounter students in their early twenties are now teaching students as young as eighteen. All respondents shared that dual credit students lack maturity and can struggle because of it. Whether it is using a cell phone in class or being scared to speak up, dual credit

students are not reaping the full benefit of upper-level coursework. Faculty who teach dual credit students should emphasize course expectations, understanding that this could be their first advanced level class. A university professor mentioned having to adjust her first lecture to include a lengthy portion regarding plagiarism, because of the dual credit students in her class. This adjustment has helped students understand when they are cheating. Faculty should focus on course expectations and resource centers as ways to help these younger students perform better.

Recommendation #2- This project recommends that university faculty promote course expectations and share information about resource centers on campus at the beginning of each semester.

Administration

Administrators are challenged by overseeing the entire workings of the university. Some respondents represented by this project already noted making adjustments, because of the increase in dual credit students. Higher education institutions have the opportunity to partner with high school and community colleges and influence the rigor of coursework offered by dual credit programs. This collaboration will ensure that dual credit students are more prepared for upper-level coursework. Several administrators mentioned examining dual credit student enrollment trends and determining where more faculty hires might be more necessary. These adjustments will make it possible for universities to absorb the growing number of dual credit students in Texas.

Recommendation #3- This project recommends legislation to require university administrators to develop educational partnerships for dual credit programs and monitor university budgeting as it pertains to dual credit.

Table 5.1 - Future Research Topics

1	Re-examine the perceived impact of dual credit students on advising, teaching, and administrative systems in five to ten years.
2	Survey small universities as to the perceived impact of dual credit students on advising, teaching, and administrative systems.
3	Compare the graduation rates of dual credit students and traditional students.
4	Compare the dual credit experiences of first-generation students and traditional students.

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Appendix A

TEXAS STATE ®

INFORMED CONSENT

Study Title: EXPLORING THE GROWTH OF DUAL CREDIT EDUCATION IN TEXAS

Principal Investigator: Emily Brooke Bennett
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Co-Investigator/Faculty Advisor: Dr. Patricia Shields
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This consent form will give you the information you will need to understand why this research study is being done and why you are being invited to participate. It will also describe what you will need to do to participate as well as any known risks, inconveniences or discomforts that you may have while participating. We encourage you to ask questions at any time. If you decide to participate, you will be asked to sign this form and it will be a record of your agreement to participate. You will be given a copy of this form to keep.

PURPOSE AND BACKGROUND

You are invited to participate in a research study to learn more about the perceived impact of dual credit enrollment on university advising, teaching, and administration. The information gathered will be used research-based pillar questions to interview university staff. You are being asked to participate because of your position with the university.

PROCEDURES

If you agree to be in this study, you will participate in the following:

- 30 minute interview in person or by phone

I will set up a time for you to meet one of the investigators at your office. You will first complete the interview for a total of 30 minutes of participation.

If you agree to be in the study, you will be asked to participate in one brief interview in February 2018. Each interview will last approximately 30 minutes. During the interviews, you will be asked about how you perceive the impact of dual credit enrollment on advising, teaching, or administrative systems at your university. The interview will be audio-recorded and the researcher may take notes as well.

RISKS/DISCOMFORTS

There is no anticipated risk to you from participating in this project.
In the event that some of the survey or interview questions make you uncomfortable or upset, you are always free to decline to answer or to stop your participation at any time. Should you feel discomfort after participating and you are a Texas State University student, you may contact the University Health Services for counseling services at list (512) 245-2208. They are located 601 University Dr, San Marcos, TX 78666.

BENEFITS/ALTERNATIVES

There is no anticipated direct benefit to you from participating in this project other than the extent to which you value providing information about dual credit impacts to policymakers.

EXTENT OF CONFIDENTIALITY

Reasonable efforts will be made to keep the personal information in your research record private and confidential. Any identifiable information obtained in connection with this study will remain confidential and will be disclosed only with your permission or as required by law. The members of the research team and the Texas State University Office of Research Compliance (ORC) may access the data. The ORC monitors research studies to protect the rights and welfare of research participants.

Your name will not be used in any written reports or publications which result from this research. Data will be kept for three years (per federal regulations) after the study is completed and then destroyed.

PAYMENT/COMPENSATION

You will not be paid for your participation in this study.

PARTICIPATION IS VOLUNTARY

You do not have to be in this study if you do not want to. You may also refuse to answer any questions you do not want to answer. If you volunteer to be in this study, you may withdraw from it at any time without consequences of any kind or loss of benefits to which you are otherwise entitled.

QUESTIONS

If you have any questions or concerns about your participation in this study, you may contact the Principal Investigator, Emily Brooke Bennett, 512-587-7831, ebb30@txstate.edu.

This project was approved by the Texas State IRB on 2/10/2018. Pertinent questions or concerns about the research, research participants' rights, and/or research-related injuries to participants should be directed to the IRB Chair, Dr. Denise Gobert 512-245-8351 – (dgobert@txstate.edu) or to Monica Gonzales, IRB Regulatory Manager 512-245-2334 - (meg201@txstate.edu).

DOCUMENTATION OF CONSENT

I have read this form and decided that I will participate in the project described above. Its general purposes, the particulars of involvement and possible risks have been explained to my satisfaction. I understand I can withdraw at any time.

Your verbal consent and participation in the interview will imply your consent to participate in this research project.