House Bill 5:

The New Shape of Texas High School Education

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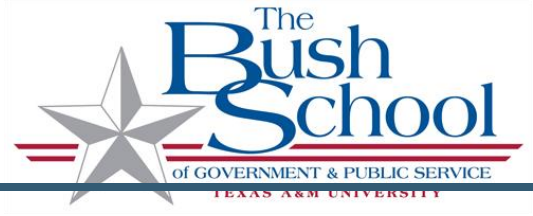

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EXECUTIVE SUMMARY

Context: In 2013, Texas HB 5 (83R) introduced a new system of graduation requirements into the state secondary education environment. The goal of the legislation was to promote college and career readiness, providing a system of tracks that allow high school students to choose a pathway to pursue during their high school career, based on future college or career aspirations. These tracks are known as "endorsements" and include: Business and Industry; STEM (Science, Technology, Education and Math); Arts and Humanities; Public Services; and Multidisciplinary.

The bill was designed to allow for a decentralized implementation strategy by individual districts, so did not include specific state-level guidance on independent school district implementation, nor did it provide resources for implementation. As a result, school districts have adopted a range of approaches to implementing the requirements of HB 5, which need to be documented and analyzed, to understand the decentralization process as a state-wide process, in support of future modifications to the system.

Study Purpose: Due to Texas' long held belief in local school autonomy and a decentralized approach to public education, significant variations in how districts have implemented endorsements and pathways have emerged. As the first graduating cohort under this new policy will not graduate until 2018, there is a lack of outcome data and evidence of implementation "best practices" that support the legislative goals of college and career readiness. This study addresses this lack of information through an in-depth, qualitative study of districts' implementation of HB 5 and seeks to answer the following questions:

- How are school districts in Texas implementing HB 5?
- How were implementation strategies selected within the districts?
- What implementation practices show promise for success, and how can they be replicated by other districts?

Study Design: This exploratory study focuses on understanding the perceptions of district administrators across Texas. The qualitative research design entails six stages that are further defined in this report: Exploration, Stakeholder Outreach, Sampling Frame, Data Collection, Data Analysis, and Dissemination. A total of 46 of the 1200 plus Texas school districts were originally contacted for participation in this study. These districts were selected based on region (North, East, Central, Gulf, South, and West/Panhandle), classification (rural, suburban, and urban), population (district size based on UIL classification), socioeconomic status (based on Title 1 funding eligibility), and minority composition. A total of 31 in-depth interviews were conducted across 21 districts to collect data from district and school administrators, including personnel that were instrumental in interpreting and implementing HB 5.

Findings: Throughout the interview process, many challenges were documented as district administrators described their implementation experiences, as they guide the first cohort of students, who will graduate in 2018, through high school. Overarching findings demonstrate that while the majority of districts agree with the intent of the legislation to promote college and career readiness through expanded opportunities for students, most districts have faced challenges in the implementation process. These challenges arise in the areas of administration (at both the state and district level), curriculum, counseling and teaching personnel, industry partnerships, and vertical integration with higher education. However, districts have also demonstrated promising practices in some of these areas that could be replicated by other districts. These practices lead to recommendations for a wide range of stakeholders, including the Texas Education Agency, legislative policymakers, the higher education community, industry, school districts, and parents and

students. However, this exploratory research also leaves several unanswered questions and begs the need for additional research, particularly in the documentation of student college and career readiness outcomes under the new policy. The following provides a summary of key insights documented in the course of the study.

Stakeholders	Relevant Research Findings	Recommendations
Legislative Policymakers	Districts are frustrated by short policy implementation timeline.	Allow additional time for implementation in future education legislation and align timeline with school calendar.
	Districts feel they do not have enough counselors to serve all students.	Make additional funds available for districts to expand counseling program.
	Districts struggle to recruit Career and Technical Education teachers.	Improve CTE funding weight to make more attractive salaries possible.
	Districts are concerned that increased busing to meet student course needs may prove unsustainable.	Improve transportation funding allotment to cover cost of increased busing.
	Districts perceive a lack of state guidance.	Be aware of concerns for future education legislation.
Texas Education Agency	Districts wish for a centralized resource at the state level.	Designate staff member or team as HB 5 resource and make point of contact clear to districts.
	Districts are frustrated by the need to coordinate TEKS and endorsements.	Provide crosswalk between TEKS and endorsement course requirements to assist districts in course planning.
	Districts face barriers to certifying Career and Technical Education teachers.	Make CTE teacher certification process easier to help districts attract qualified teachers.
District Administrators	Districts face administrative challenges around the middle-to-high school transition.	Develop district-wide student information management systems that tracks student endorsement and graduation plan progress through middle and high school.
	Large districts struggle to unify approach across all schools.	Form cross-functional teams of personnel from all relevant departments to unify implementation strategies and communicate with across school campuses.
	Districts worry about future staffing shortages for popular endorsements.	Closely monitor course enrollments and prioritize popular choices.
	Districts are concerned about repercussions on students of early specialization.	Closely monitor student outcome data as first cohorts graduate under HB 5.
Curriculum Specialists	Districts worry about student challenges arising from strict	Work with counselors for early identification of students at risk of failing a course or thinking of changing

	sequencing of courses in endorsements.	endorsements to minimize challenges.
Counseling & Guidance Specialists	Counselors face multiple responsibilities and limited time.	Supplement counseling personnel by hiring more counselors or recruiting volunteer mentors.
	Counselors are not specifically trained in career counseling.	Offer additional counselor training.
	Middle and high school counselors operate in silos.	Revise counseling structure to allow counselors to rotate with student cohorts, starting in middle school.
	Counselors face barriers to communicating with all parents.	Collect data about how parents prefer to receive information and adjust strategies.
Industry & Chambers of Commerce	Rural districts lack available industry partners.	Reach out to districts in surrounding rural areas to offer opportunities to pool resources and join industry partnerships.
	Districts face difficulties recruiting and certifying CTE teachers.	Provide grants or incentives to help districts recruit CTE teachers.
	Districts without dedicated staff face challenges establishing partnerships.	Provide grants to hire staff or loan employee time to help schools develop partnerships.
	Districts lack specialized facilities and equipment.	Loan space or equipment or provide grants to make new partnerships feasible.
Higher Education	Districts worry about alignment of endorsements with higher education expectations.	Work with districts to improve alignment of K-12 and higher education standards.
	Small, rural districts struggle to establish partnerships with geographically distant institutions of higher education.	Work to establish partnerships with online institutions of higher education.

Table 1: Research Findings and Recommendations

DEFINITIONS

4x4 - As in the previous high school graduation plan, where students were required to take four courses of the four traditional subjects of math, science, language arts and social studies.

Career Readiness - No universally accepted definition. This study uses the definition put forth by the Association for Career and Technical Education (2010): "Career readiness involves three major skill areas: core academic skills and the ability to apply those skills to concrete situations in order to function in the workplace and in routine daily activities; employability skills (such as critical thinking and responsibility) that are essential in any career area; and technical, job-specific skills related to a specific career pathway" (1).

College Readiness - The level of preparation necessary for a student to enroll and succeed without remediation in an entry-level English/Language Arts or Mathematics course, for credit towards a baccalaureate or associate degree program.

Credentialism - An excessive reliance on formal qualifications or credentials to determine whether someone is qualified to undertake a task, speak as an expert, or work in a certain field; this generally arises in the context hiring or promotion criteria.

Distinguished Level of Achievement - Element of HB 5 that allows students to be recognized as Distinguished by completing four credits each of math and science, including Algebra 2, in addition to an endorsement; necessary for Top 10% Rule eligibility.

Educational Inflation - The trend whereby the growing number of individuals with college degrees devalues those degrees, causing an inflation of the minimum education requirements for lower-level jobs that had not previously required a college degree.

Endorsements - Established by HB 5; sequences of courses designed to prepare students for college education and/or careers in five content areas: Business and Industry; STEM (Science, Technology, Education, and Math); Arts and Humanities; Public Services; and Multidisciplinary.

EOC – End-of-Course exams required of students at the end of the school year.

Foundation High School Program - The graduation requirements of the HB 5 policy, replacing the previous Recommended High School Program, Minimum High School Program, and Distinguished Achievement Program; requirements include one or more endorsements and an optional Distinguished Level of Achievement.

Guided Pathways - Another term for the policy introduced by HB 5; emphasizes the nature of endorsements as pathways to future college and career choices for students.

HB 5 - House Bill 5, passed in 2013 during the 83rd session of the Texas Legislature, established the Foundation High School Program with five endorsements and a Distinguished Level of Achievement to replace the previous Recommended High School Program, Minimum High School Program, and Distinguished Achievement Program; under the rules established by HB 5, all Texas high school graduates will be eligible to apply to 4-year state universities.

High School Academies - Using a school-within-a-school model to combine common academic areas in one centralized location to better allow coordination and partnerships.

Pathways - Specific course sequences that make up endorsements; e.g. a firefighter pathway within the Public Service endorsement, or a welding pathway within the Business and Industry endorsement.

Personal Graduation Plan (**PGP**) - A record of a student's choice of endorsement(s) and the courses necessary to complete them; generally developed by the end of 8th grade in consultation with a student's counselor and parents.

SBOE - State Board of Education; the elected body that establishes the TEKS and other education rules for public education.

TEA - Texas Education Agency; the state agency with purview over public education.

TEKS - Texas Essential Knowledge and Skills; state standards for what students should learn and understand, as designated by the SBOE.

THECB - Texas Higher Education Coordinating Board; the state agency with purview over public higher education.

Top 10% Rule - Grants eligible Texas high school students who are in the top 10% of their graduating class automatic admission into state-funded universities; under the HB 5 policy, students must earn a Distinguished Level of Achievement in order to be eligible.

Tracking - The separation of students by perceived academic ability for the purpose of instruction; one criticism of HB 5 is the perception that it constitutes a de facto tracking system.

Weighted - As in weighted funding, a formula funding mechanism used by the TEA to determine school funding..

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1. INTRODUCTION

In 2013, Texas HB 5 (83R) introduced a new system of graduation requirements into the state's secondary education environment. The goal of the policy is to promote college and career readiness. However, the bill did not include specific state-level guidance on how independent school districts ought to implement the system, nor did it provide resources for implementation. This has led school districts to adopt different approaches to implementing the requirements of HB 5, which include a system that allows students to choose a sequence of courses to pursue in their high school career based on future college or career goals and aspirations. These course sequences are known as "endorsements" and include: Business and Industry; STEM (Science, Technology, Education and Math); Arts and Humanities; Public Services; and Multidisciplinary. Within each endorsement, students can select a more specific "pathway;" for example, a nursing or firefighting pathway within the Public Service endorsement, or a welding pathway within Business and Industry.

Figure 1: Overview of HB 5 Endorsements (Texas Education Agency 2014)

Because the state legislature chose not to provide specific guidance for districts in making their implementation decisions, significant variation in how districts have implemented endorsements and pathways has emerged. There is also a lack of evidence about implementation "best practices" that support

the legislative goals of college and career readiness. This study addresses this lack of information through a qualitative study of districts' implementation of HB 5 and seeks to answer the following questions:

- How are school districts in Texas implementing HB 5?
- How were implementation strategies selected within the districts?
- What implementation practices show promise for success, and how can they be replicated by other districts?

This report will first provide an overview of the literature on college and career readiness, counseling, and tracking, as well as a summary of prior research on HB 5, since an understanding of these topics is fundamental to evaluating HB 5 and its implementation. Next, the report will detail the research methodology and analysis strategy used in the study. This will be followed by a discussion of the findings, including general trends, challenges, and promising practices. The report will conclude with policy recommendations designed to address the challenges uncovered in the course of the study, to meet the information needs of a range of stakeholders across the state of Texas, including legislative policymakers, the Texas Education Agency, school district administrators and personnel, industry partners, the higher education community, and parents and students.

2. Literature Review

The logic model in Figure 1 (below) was developed by the research team to describe their understanding of the mechanism by which the implementation of HB 5 will result in improved college and career readiness for Texas students, as well as describes the inputs and context affecting its implementation. The following literature review will provide additional insight into the history and political context that led to the passage of HB 5 as well as summarize the relevant research on some key inputs and external factors to the HB 5 implementation process, including college and career readiness, counseling, and tracking.

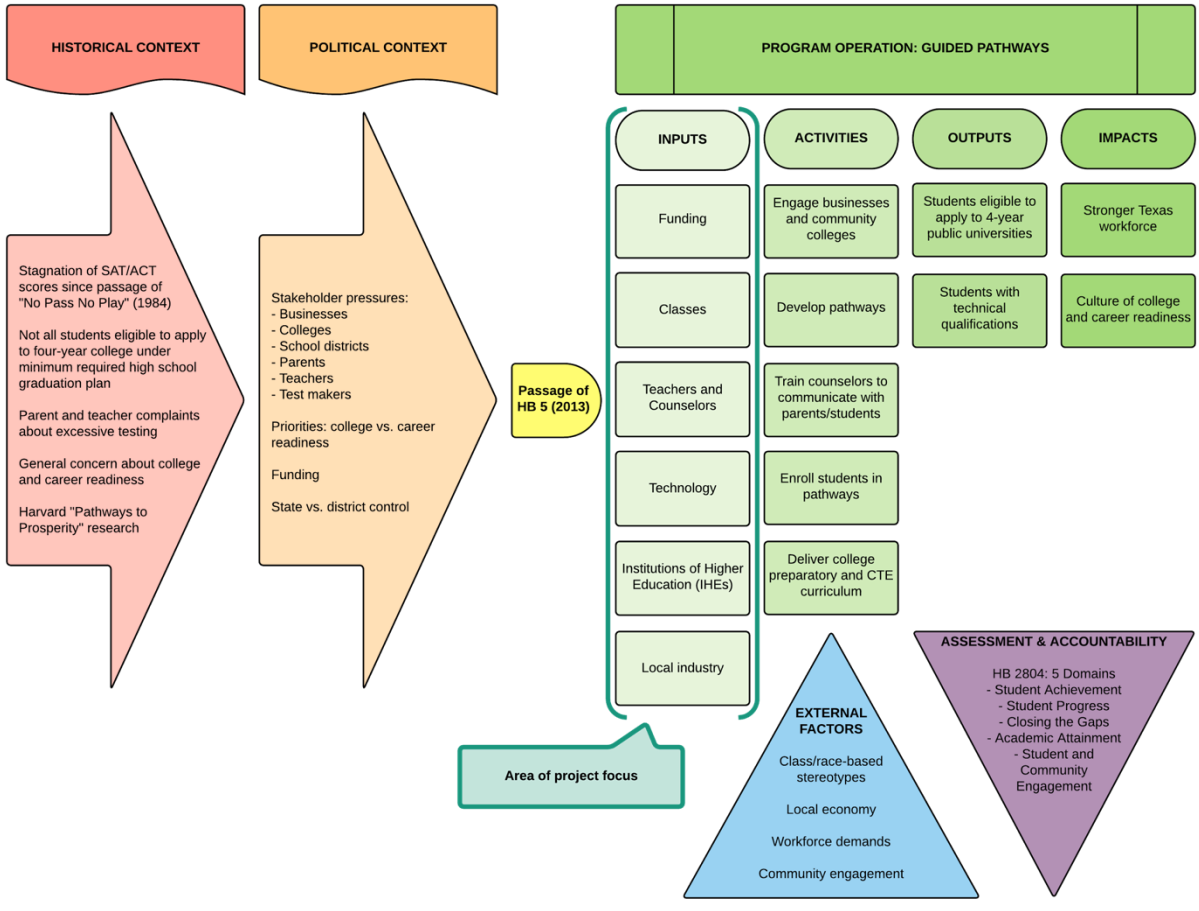

Figure 2: Study Logic Model

deal of ambiguity surrounding the purpose of secondary education, the definition of college and career readiness, and the best pathways to achieving such objectives. This ambiguity impacts policymakers drafting laws and regulations, school administrators designing a curriculum, and counselors attempting to guide students to postsecondary success.

This literature review summarizes the history and context surrounding the passage of HB 5, as well as relevant research in the areas of career readiness and high school counseling. It concludes with a review of the findings from a recent American Institutes for Research report (Mellor, Stoker, and Reese 2015) on HB

5 implementation and a discussion of unanswered questions prompting this qualitative study focused on the implementation process at the district level. The section concludes with a brief summary of the results of the research team's initial fact-finding meetings with associated political stakeholders, which further highlight the key contextual factors influencing the implementation of HB 5.

2.1 History of and Background of HB 5

The State of Texas has a long and fitful history of education reform efforts. The Texas Legislature convenes on a biennial cycle, meeting from January to June of odd-numbered years. This means that there is often limited time to draft, deliberate, and pass legislation during each session. Moreover, legislative policies are often subject to change as the composition of the Legislature changes with each election cycle. This phenomenon is especially well demonstrated by the last 10 years of education reform efforts within the Texas Legislature. Priorities and attitudes regarding the fundamental purpose and goals of public education have shifted, and the Legislature's focus has moved from more general efforts aimed at increasing academic rigor and creating globally competitive students to more specific policies that encourage students to choose their future by prioritizing college and/or career readiness.

In a specially called session of the Legislature in 2006, elected officials passed HB 1 during the 79th Legislative Session, which aimed to focus public education policies on college readiness and academic rigor. This omnibus bill was the Legislature's response to a mandate from the Texas Supreme Court to address school finance equity issues, and introduced the concept of the 4x4 graduation requirement for students graduating under the Recommended High School Program (RHSP) and the Distinguished Achievement Program (DAP). This move was intended to ensure that all Texas students were prepared for college by requiring that students took four credits each of English Language Arts, Mathematics, Science, and Social Studies.

During the next regular session in 2007 (the 80th Legislature), Texas lawmakers passed legislation instituting several new testing initiatives designed to monitor schools' progress in implementing a more academically rigorous curriculum. SB 1031 replaced the old Texas Assessment of Knowledge and Skills (TAKS) with the new State of Texas Assessments of Academic Readiness (STAAR) and instituted a number of new end-of-course exams (EOCs) for students. Additionally, legislators passed HB 2237, establishing high school completion and success initiative boards. This bill created a number of new programs with funding to support them, including new grants and increased instruction for teachers, dropout prevention programs, and new success initiatives. It also restructured school accountability measures (House Research Organization [HRO] 2007, 3).

In 2009, the 81st Legislature passed HB 3, which focused on public school accountability, curriculum content, and promotion requirements. This legislation made a few tweaks to the current 4x4 curriculum requirements by requiring foreign language components and, for the first time, approving Career and Technical Education (CTE) classes to satisfy some math and science credits. It also boosted goals for college readiness and included further accountability requirements for school districts. In HB 3, the Legislature defined college readiness as "the level of preparation necessary for a student to enroll and succeed without remediation in an entry-level English language arts or mathematics course for credit towards a baccalaureate or associate degree program" (HRO 2009, 9). According to the bill digest, supporters of the legislation believed that HB 3 "would give the parents and employers of Texas assurance that graduates are college- or workforce-ready upon graduation" (HRO 2009, 18). HB 3 also endeavored to align each state

assessment (the STAAR) with the appropriate grade levels, linking student achievement and college readiness with the prescribed learning outcomes. The digest also specified that "the bill would give students more flexibility in coursework to pursue their individual interests, while still ensuring a quality education. Having multiple pathways with equal rigor would be important to help each student reach his or her full potential" (HRO 2009, 19). This passage would prove prescient as the Legislature again revisited education policy in 2011.

In 2011, the 82nd Legislature was hamstrung by a $27 billion budget shortfall. The Texas Constitution requires the Legislature to pass a balanced budget every biennium, leaving the members of the 82nd Legislature to cut large sums from the budget. All state agencies and functions took large budgetary hits, but perhaps no area was hit harder than public education, which suffered a $5.4 billion shortfall. Governor Perry and other legislative leaders had originally stated that they would not raise taxes nor use the Economic Stabilization Fund, Texas' piggy bank for emergencies (colloquially called the "rainy day fund" by most Texans) (Mann 2011, 1). By March of 2011, parents, teachers, and education stakeholders began rallying their fellow Texans to demand the use of the rainy day fund to offset deep cuts to public education. Governor Perry and legislative leaders eventually agreed to use $3.2 billion from the rainy day fund, but the damage was done (Mann 2011). As a result of these severe budget cuts, no major education policy measures were passed in the 82nd Legislature.

In 2013, the 83rd Legislature gaveled in with a more positive financial picture than its predecessor. In response to the uproar from the budget cuts of the 2011 session, parents' growing displeasure with the number of standardized tests their children were taking, and concerns from business and industry leaders in Texas that Texas students were not prepared to enter the workforce, HB 5 was born. This bill aimed at several targets, including reducing the number of End-of-Course Exams (EOCs) from fifteen to five, providing new accountability and transparency measures for schools, and changing the design of high school course offerings and degree plans. The bill was designed to "meet the growing need of Texas employers for skilled workers ready to enter technical trades, such as welding, pipefitting, and computer animation" (HRO 2013, 10). Rep. Aycock, as the author of the bill, believed that by providing students with the ability to choose their own career interests in high school, high school graduation rates would improve and workforce readiness would rise for the "40% of students" whose needs were not being met by the existing high school curriculum and whose futures did not necessarily include college (Weiss 2013).

One final factor to consider when thinking about the current climate of the Legislature is the ambiguous idea of "local control." Traditionally, Texas has a long-standing policy of leaving most major decision-making to local governments and municipalities. This extends to local school districts. Generally, policymakers have embraced the idea of crafting broad policies, then allowing local officials to craft the specifics of how that policy is to be implemented. This tradition has been eroded by recent legislative sessions that instituted numerous top-down policy solutions without allowing districts much flexibility.

HB 5 returns to this idea of local control by allowing individual schools and districts to craft their own endorsements and pathways based on what is best for their students and what local leaders think is important. However, this policy of local control also leaves a good deal of room for disparity and "glaring differences in both quantity and quality of educational programs" (Hadderman 1988). While school administrators and legislators grapple with their individual roles in education policy, it is important to remember that many elected officials believe wholeheartedly in this concept of local control, and this belief is unlikely to change in the future. Therefore, major provisions of HB 5 are not likely to be revisited by the

Legislature in in the near future, as policy makers prefer allowing local districts to make implementation decisions without further state regulation.

2.1.1 Legislative Intent of HB 5

The opportunity for a student to earn a certificate or endorsement that they could then use to gain employment, or add to additional certificates or degrees in the future, was attractive to policymakers trying to educate a changing student body. HB 5 was a dramatic change in policy from the decade of focus on college readiness to a mixed focus of college and career readiness, with drastic reductions in standardized testing. However, one specific piece of HB 5 caused a great deal of contention: a move away from requiring all high school students to take Algebra 2 and allowing districts to choose where it fits in their endorsements. This provision proved to be contentious, as Algebra 2 is a key component of admissions requirements at colleges and universities and correlates strongly with post-secondary student outcomes (Lee and Ready 2009). The bill also placed several new burdens on schools, specifically on school counselors, without providing any additional revenue to implement the new policies. It also passed much of the specifics on to the State Board of Education to work out. Perhaps most importantly, HB 5 required young students and parents to choose in 8th grade the path their child will travel throughout the remainder of their public education career (Weiss 2013).

2.1.2 Criticisms of HB 5: Tracking

During the legislative debate over HB 5, much of the criticism of the bill centered around assertions that HB 5 was simply a "tracking" system in disguise. Tracking, or ability grouping, is the separation of students by perceived ability for the purpose of instruction in a school setting; for example, modern high schools commonly offer general education, honors, and Advanced Placement levels in many subjects. Tracking is common educational practice throughout the Western world. In the U.S., it dates to the late 19th century and can be traced to a wave of immigration accompanying the opening of Ellis Island, the migration of Southern Blacks to Northern urban centers, reorganization of the workforce, and the advent of compulsory education (Lucas 1999; Ansalone 2010). Immigration, in particular, impacted the curricular structure of schools, as it raised the question of how schools could teach a traditional, classical curriculum to prepare students for college, while simultaneously assimilating immigrant children into American culture (Lucas 1999). Similarly, the influx of poor Black Americans into Northern cities in the wake of the Civil War posed a societal problem for those who wished to "appropriately socialize the various groups into work roles suitable to their class standing" (Ansalone 2010, 4). In response, schools transitioned from a single college-preparatory curriculum to a stratified system that steered certain students toward university and others toward the workforce.

Until about 1965, this explicit tracking system remained in place in the U.S. In that year, researchers for the Educational Testing Service used school records to successfully identify the track placement of 93% of students in their sample (Lucas 1999). However, by 1991, the National Center for Education Statistics found that 85% of schools in their nationally representative sample did not have explicit practices that would allow identification of student track placement (Lucas 1999). Evidence suggests that this shift occurred at least in part due to equity concerns brought to prominence by the civil rights movement of the 1960s, as well as in response to a changing understanding of the nature of intelligence that rejected the notion of a fixed, inherent capacity for learning across all domains (Lucas 1999).

Although ability grouping continues to be common practice in the U.S., it now looks different from other Western education systems. Rather than explicit tracking procedures that allocate students to different schools with different curricula based on ability, most U.S. schools accomplish ability grouping within schools on a course-by-course basis (Lucas 1999). Sørensen (1970), for example, distinguishes between "horizontal differentiation, intended to assign students to classes with different curricula, and vertical differentiation, intended to assign students to different groups according to their assumed learning capacity" (374). The latter is more common in modern U.S. schools, with labels such as "honors, remedial, essential, and basic" applied to individual classes rather than whole curricular tracks (Lucas 1999, 6).

The Efficacy of Tracking

A primary justification for ability grouping is the assertion that it is the most efficient way to produce the best academic outcomes for the largest number of students. On this count, the evidence is mixed. As early as 1932, researchers at elementary schools in Philadelphia concluded that, "as concerns the improvement of arithmetic, reading, and technical English skills, there is a statistically significant difference in favor of homogeneously grouped pupils as compared with heterogeneously grouped pupils" (Barthelmess and Boyer 1932, 293). However, these effects are not universally distributed; Epple, Newlon, and Romano (2002) found that "tracking increases achievement of students in the public school who qualify for the high track and reduces achievement of those who do not qualify for the high track" (39).

Similarly, Fuligni, Eccles, and Barber (1995) found that homogeneous ability grouping in seventh-grade mathematics classes had no positive effect, and in some cases a negative effect, on the achievement of low-ability students placed in a low-group class. However, for medium- and high-ability students, these same authors found being placed in homogeneous ability groups did have a positive effect on long-term achievement. Being placed in a group above the student's ability level, meanwhile, did result in better outcomes for low-ability students placed in medium-grouped classes and medium-ability students in high-grouped classes. Domina (2014) concluded, in a similar vein, that students who enroll in more challenging eighth-grade mathematics courses, identified as pre-algebra and algebra, see positive effects in mathematics achievement over general mathematics, and that these effects are independent of student and school factors.

Ansalone (2010), however, concludes that "research does not support the assumption that tracking enhances the academic achievement of all students" (14). Gamoran and Berends's (1987) research support this assertion, finding that there are differences in the quality of instruction between tracks and that these differences favor high-track classes. They also find that high-track students have higher expectations for post-secondary education, which leads to higher educational attainment compared to low-track students. These effects are independent of pre-tracking expectations.

Equity Issues in Tracking

The mixed impacts of tracking on student achievement discussed above raise important questions of equity, particularly as concerns racial and ethnic minorities and students of low socioeconomic status. The principal critique of tracking from an equity standpoint has historically contended that tracking serves as a reproductive mechanism for existing social inequalities. For example, vertical differentiation, which assigns students to learning groups based on perceived ability, exacerbates differences in achievement between classes over and above differences resulting from random assignment (Sørensen 1970). To the extent that family background impacts academic achievement, then, tracking serves to compound this effect. This argument is echoed more recently by Lucas's (1999) finding that "individual middle-class parents continue to secure their children's advantage in the existing in-school stratification system" (70), while greater

socioeconomic diversity within a school is associated with wider curriculum differentiation—that is, greater disparity in the content of high and low tracks.

The five endorsements in HB 5 do not constitute a tracking system in the sense that they do not explicitly group students by ability. However, implicit cultural biases may cause some pathways to be seen as for higher-ability or lower-ability students. For example, "some policy and curricular deliberations about career and technical education have embedded in them assumptions of cognitive limitation" (Rose 2014, 15). In another manifestation of the phenomenon discussed above, whereby minorities and students of low socioeconomic status are more likely to be placed in lower-ability groups, these same students have historically been more likely to be placed in vocational courses (what are now known as CTE courses) than peers with the same record of academic achievement (Rose 2014, 13). Whereas CTE courses may be viewed as less academically rigorous, the STEM endorsement, which emphasizes math and science, has the potential to be viewed as the most difficult.

The fact that students must select their own pathway, with parental approval and counselor advice, makes it less likely that historical tracking patterns will emerge in HB 5 implementation. However, implicit or explicit expectations about ability from families, peers, teachers, and counselors do have the potential to influence student choices. The key concerns about HB 5 implementation related to tracking revolve around equity: the implicit and explicit influences on students' choice of pathway; whether there is a higher proportion of minority and low-socioeconomic status students in CTE courses; the relative rigor of courses within each pathway, both within the same school and between schools; and what impact a student's choice of pathway has on their academic success.

Some of these questions are outside the scope of this research. For example, questions about the relationship of choice of pathway to students' academic success are not answerable at this time. However, this study aims to discover how schools and districts choose what endorsements to offer, which may reflect judgments about the abilities or academic orientation of students in that school, as well as what role counselors play, which may highlight the influence of counselor expectations on students' choice of pathway.

2.2 The Unclear Purpose of High School Education

Many of the issues surrounding HB 5 stem from unresolved conflicts regarding several fundamental assumptions about secondary education:

- What is the purpose of a high school education?
- What is meant by "college readiness" and "career readiness?"
- Are these goals compatible, and how do they fit into an overall understanding of the purpose of education?

The answers one provides to these questions profoundly affects any subsequent policy and implementation decisions.

Just as pressure increased throughout the mid-20th century to achieve universal high school enrollment and graduation, pressure has increased in the past 20 years to send students on to college. "In response to the nation's transformation from an industrial to an information economy, academic preparation [has] once again [become] a priority. No longer an end point in the public education system, the American high school

is now being asked to prepare all its students for the postsecondary schooling and training required for full economic and social participation in U.S. society" (Balfanz 2009, 18).

As Allan Bloom (1987) states in his landmark book *The Closing of the American Mind*, "every education system has a moral goal that it tries to attain and that informs its curriculum. It wants to produce a certain kind of human being" (26). Policymakers must not lose sight of this. Public education imbues students with the shared culture, values, beliefs, and knowledge necessary to secure a unified nation and prepares them to be economically and morally self-sufficient citizens (Stern 2009). Educational policy regimes that ignore this moral purpose will be at best incomplete. At their worst, they will be directly harmful to the students whom they seek to educate.

However, the subsidiary goal of making students economically self-sufficient has produced another, perhaps competing, view of the purpose of education: to gain knowledge that can be used to secure individual material prosperity. This is a reflection of the modern U.S. labor market, where jobs requiring a college degree are now the rule, not the exception (Carnevale, Smith, and Strohl 2013). The preoccupation with college readiness and workforce preparation is also closely linked to the phenomenon of credentialism—also known as educational inflation—whereby increasingly advanced degrees are required for individuals to be considered qualified to perform increasingly menial work (Brown 2001). The number of individuals holding bachelor's degrees has increased exponentially over the past half-century, which has resulted in a subsequent devaluing of the bachelor's degree—and, by extension, the high school diploma (Brown 2001).

In the face of increasingly competitive labor markets, it may be tempting for policymakers to prioritize educational policies in a manner inconsistent with their relative importance. An exclusive focus on college and career readiness may prove incompatible with the broader societal goal of rearing good citizens. Without a nuanced and comprehensive understanding of college and career readiness, policymakers run the risk of sacrificing the overall mission of high school education in pursuit of intermediate objectives. To understand and analyze the decisions districts are making as they implement HB 5, it is important to have a robust understanding of both college and career readiness, and to understand how these two goals stand in relation to the overarching goal of public education—preparing young citizens for entry into society as adults.

2.3 Career Readiness vs. College Readiness: Concepts and Consequences

While the State of Texas defines college readiness as "the level of preparation necessary for a student to enroll and succeed without remediation in an entry-level English language arts or mathematics course for credit towards a baccalaureate or associate degree program" (HRO 2009, 9), it lacks a similar conceptual definition of "career readiness." Given that one of HB 5's aims is to strengthen career readiness programs in Texas high schools, this lack of an agreed-upon definition poses problems for schools attempting to implement the new graduation system. In order to effectively pursue career readiness, stakeholders must first agree on a working definition. A survey of the research demonstrates that this is not a straightforward proposition.

Although multiple organizations and agencies have acknowledged "college and career readiness" as the goal of high school education, the "career" portion of that readiness is often ignored or merely paid lip service (Barton and Coley 2011). Indeed, there is no recognized standard definition of career readiness, and attempts to define it have often become the subject of dispute among scholars. Advocacy and testing

organizations such as Achieve and ACT, Inc. have "advanced the position that fundamentally the same set of knowledge, skills, and capacities is needed to succeed in college and the workforce. In their view, college readiness leads to workforce preparation" (Balfanz 2009, 27). This position has been disputed by several notable scholars, who point out that, while there appears to be significant overlap between college and career readiness, an exclusive focus on academic preparation will omit several key elements necessary for adequate preparation for entry into the workforce (Balfanz 2009).

In response to this debate, the Association for Career and Technical Education (ACTE) put forth a multi-faceted definition of career readiness that encompasses the broad array of knowledge and skills required for success in the workplace. According to the ACTE (2010), career readiness can be broken down into three skill areas: "Core Academic Skills and the ability to apply those skills to concrete situations in order to function in the workplace and in routine daily activities; Employability Skills (such as critical thinking and responsibility) that are essential in any career area; and Technical, Job-Specific Skills related to a specific career pathway." The ACTE believes that this holistic approach will educate students in a way that truly prepares them for career paths that offer economic self-sufficiency in adulthood.

2.3.1 Academic Skills

The ACTE (2010) agrees with several other major research organizations that "career-ready core academics and college-ready core academics are essentially the same, thus creating overlap in the preparation students need to be ready for postsecondary education and careers" (1) This foundational knowledge ought to provide students with "the academic skills necessary to pursue postsecondary education without remediation—the measure many consider 'college readiness'" (ACTE 2010, 1).

This focus on foundational academic preparation seems to provide an answer to some of employers' most consistent complaints about entry-level workers; namely, their "deficiencies in English and written communications" as well as their deficiencies in math, particularly in "areas such as data analysis and statistics, reasoning, and solving mathematical problems" (ACTE 2010). However, it is important to note that these complaints are specifically aimed at entry-level workers' ability to apply academic knowledge in a workplace context. This would seem to indicate that, while foundational academic knowledge is of the utmost importance, how well students are able to apply that knowledge is just as important, and schools would do well to consider both the content and the method of instruction in order to help students develop these skill sets. Moreover, high schools may face challenges adequately educating students and preparing them for college-level coursework if students enter high school unprepared for a college-preparatory curriculum. As Lee and Ready (2009) point out, "a key element in this policy shift [toward a college-preparatory curriculum] is the recommendation that high schools offer only college-preparatory courses and that they eliminate remedial courses" (145).

How then to educate students who are unprepared for a college-preparatory curriculum? Lee and Ready (2009) indicate that many schools are coalescing behind a model wherein all students take a college-preparatory curriculum, an expanded number of Advanced Placement or International Baccalaureate courses are offered, and remedial courses that once counted towards graduation are replaced with academic support courses that augment students' college-preparatory coursework but do not count towards graduation requirements. Given the large degree of local autonomy given to Texas school districts regarding curriculum design under HB 5, research suggests that districts would benefit from considering this model as they seek to adapt to the new system.

2.3.2 Technical Skills

The fact that most employers make hiring decisions based on the job-specific hard skills listed on a candidate's résumé indicates that such skills are an essential component of any conceptual definition of career readiness. Indeed, this is reflected in job requirements throughout the labor market. A study conducted by the ETS Policy Information Center found that

> "the education requirements of 44 occupations—which account for half of the 26 million job openings projected between 2001 and 2012 by [the Bureau of Labor Statistics]—indicated that about half of the openings in those occupations require short-term on-the-job training (one month or less experience and formal training). Eight of the 44 require moderate-term on-the-job training (one to 12 months). The rest require a longer period of training, a higher-education degree, or certification" (Barton and Coley 2011, 19).

Georgetown University's Center on Education and the Workforce corroborates this data, finding that "by 2020, 65 percent of all jobs in the economy will require postsecondary education and training beyond high school" (Carnevale, Smith, and Strohl 2013, 15).

Part of this increasing demand for job-specific training and education may stem from increasing credentialism and educational inflation in the market (Brown 2001). However, as Barton and Coley (2011) point out, this is also partly a reflection of employers' desire to cut costs by eliminating expensive training budgets and focusing on employees who already possess the desired skills and experience—a process only exacerbated by the recent economic recession and the resulting flood of experienced workers into the labor market. To compete in such an environment, high school students are increasingly seeking cooperative education and internship opportunities as well as industry-recognized credentials and licenses that allow them to compete in a labor market that places a premium on work experience (Barton and Coley 2011).

HB 5, through its system of endorsement, has sought to address this demand for industry-recognized certifications. However, the effectiveness of any career readiness certification program is constrained by the degree to which the labor market acknowledges such credentials as valuable indicators of ability and experience.

Moreover, it is important to note that these programs are primarily focused on providing a marketable credential for entry-level employees without a college degree. Given the increasing necessity of a bachelor's degree in the U.S. labor market, the long-term efficacy of such credentialing programs is questionable as it becomes increasingly difficult for job seekers without a college degree to find employment, regardless of what other credentials they might hold. This would seem to indicate that Texas school districts operating under HB 5 should remain firmly committed to a college-preparatory curriculum, even for students who do not intend to pursue higher education immediately following high school.

2.3.3 Employability Skills

While employers often make hiring decisions based on a candidate's demonstrated hard skill set, they most often fire employees for a lack of soft skills, or what the ACTE calls "Employability Skills." These include traits such as responsibility, critical thinking, adaptability, professionalism, moral character, the ability to work well with teams, and creativity (ACTE 2010). These behavioral traits are widely acknowledged as being critical to an employee's success (Barton and Coley 2011).

However, this raises an important question: can formal schooling be expected to teach such behavioral skills? This is not at all clear. The acquisition of employability skills depends on the quality of the teachers, family members, and mentors with whom a student interacts and the consistency of discipline by which the student is held accountable. As a result, Texas policymakers may need to temper their expectations of the high school curriculum under HB 5. It may be that such a curriculum is not capable of inculcating all of the employability skills most desired by employers.

2.3.4 Conclusions

Given the limited time and resources available to American high schools and the multifaceted nature of any attempt to prepare students to enter the workforce, it is incumbent on policymakers and school administrators to prioritize which elements of career readiness can most effectively be undertaken by the secondary school system. It is unlikely that most high schools will possess the personnel and resources necessary to ensure that each student completes a rigorous college preparatory curriculum, acquires all of the necessary behavioral traits and employability skills, and completes some form of industry-recognized career- or job-specific credential that increases their competitiveness in the job market. How schools go about balancing these demands will have a drastic impact on students' career and life prospects, and it is critical that any path is chosen with an eye towards maximizing mobility and opportunity.

2.4 The Role of Counselors

Counselors are essential to helping students achieve college and career readiness, but their roles and responsibilities have changed over the years, including the need for a more personalized approach to comply with HB 5 guidance requirements. Understanding these changing roles and how they impact students' college and career readiness is essential to understanding the role of counselors in HB 5 implementation.

2.4.1 High School Counselors: Complex Roles, Changing Responsibilities

For many years, counselors have assumed indispensable roles, with the list of responsibilities continuing to expand and become more complex (Belasco 2013). High school counselors' daily functions may include class scheduling (Perna et al. 2008), monitoring standardized testing (Belasco 2013), or drug and gang prevention (McDonough 2005). They are required to offer academic advice and find ways to prevent school dropouts (Belasco 2013). Counselors must be prepared to address a student's psychological needs (McDonough 2005) and are sometimes required to perform administrative duties or complete tasks unrelated to their jobs as professional counselors (Belasco 2013; Brown and Trusty 2005; McDonough 2005). HB 5 amended the Education Code to expand counselor responsibilities by requiring the discussion of personal graduation plan options (including the distinguished level of achievement) and the explanation of endorsements with each student entering 9th grade (Tex. Educ. Code § 28.02121).

On the other hand, counselors may prioritize their roles differently. In a national counselor survey, 48% of counselors viewed their role in promoting academic achievement as their primary goal; 26% of counselors viewed college and postsecondary counseling as a priority (McDonough 2005). Finally, 17% of school counselors emphasized students' personal development, and only 8% reported career preparation as their main objective (McDonough 2005).

Under HB 5, Texas school counselors must, however, increase their focus on postsecondary counseling and career preparation, and include career placement in student counseling sessions (Tex. Educ. Code § 33.007).

Additionally, counselors in Texas are now required to meet with students and parents before the end of 8th grade to determine the student's choice of endorsement(s) and to select a graduation plan (Tex. Educ. Code § 28.0212). Counselors must also create a personalized graduation plan for students who are deemed at risk of failing to graduate, students who are unable to obtain a high school diploma before the fifth year, or students whose performance on assessments and standardized tests is unsatisfactory (Tex. Educ. Code § 28.0212). This personal graduation plan must identify student educational goals, provide detailed information on diagnostics, monitoring, intervention, and evaluation strategies (Tex. Educ. Code § 28.0212). Counselors must also be able to provide detailed information regarding college admissions, financial aid, and starting curriculum requirements (Tex. Educ. Code § 28.026).

2.4.2 Counselor Effects on College and Career Readiness: Providing Access and Social Capital

How effective is a counselor in supporting student college and career readiness? McDonough (2005) highlights that "no professional is more important to improving college enrollments than counselors" (108). On the other hand, more recent literature highlights the importance of the family's role and influence on student college and career decisions. Both Belasco (2013) and Bryan et al. (2011) speak to the importance of family units, not counselors, as the primary resource for communicating college-career information. However, this is not always possible when the family lacks the social capital to provide adequate information. Parents of first-generation students may lack the necessary information and may not be knowledgeable enough to help the student navigate through the intricate details of post-secondary enrollment (Belasco 2013). Therefore, students who lack social capital in the home have a greater need for counselors who focus on college and career readiness and can provide support for postsecondary attainment (Belasco 2013; Bryan et al. 2011).

Belasco (2013) questions whether visits with school counselors increase the likelihood of college enrollment by examining the differences between non-enrollment and enrollment in two- or four-year institutions. Among his findings, Belasco's (2013) results indicate that college informational sessions between students and school counselors have a significant impact on college attendance. On average, the probability of college enrollment in four-year institutions after counselor sessions also increase enrollment in two-year institutions (Belasco 2013). This probability rises even further when visits to discuss college-related information occurred during two grades of high school instead of only one grade. This study suggests that, while new educational policies seek to improve college attendance, such reforms may be missing the very key that can support increased college attendance where there are gaps in enrollment (Belasco 2013). Students with limited family support from home may depend on school resources, specifically multiple visits with school counselors, to provide information about college entry, financial aid, and other beneficial information that can assist in postsecondary enrollment (Belasco 2013).

Equity in student counseling is equally important. A counselor's biases can affect both the variety and intensity of the information they share with students (Holcomb-McCoy 2010). Another study reveals that college counseling is more typical for students in Advanced Placement, honors, and college preparatory curriculum tracks than for students in other tracks (McDonough 2005). Linnehan (2006) finds that, compared to students of lower socioeconomic status (SES), counselors are more likely to encourage students of higher SES to attend a four-year college or university. College-related counseling, in general, is known to be more limited in schools with predominantly low-SES populations than in other schools (McDonough 2005).

Belasco (2013) finds that studies do point to the significant effect of school counselors on student postsecondary enrollment, especially for students from low-SES backgrounds. While many researchers continue to emphasize this positive relationship, access to quality school counseling is limited primarily by high student-counselor ratios and multiple responsibilities that limit the time counselors can spend with students discussing college readiness (Belasco 2013).

The American School Counselor Association (ASCA) claims that for counselors to "achieve maximum program effectiveness, a school-counselor-to-student ratio of 1:250" is optimal (ASCA 2012, 11). However, this recommended ratio is far from reality. According to 2009 National Center for Education Statistics data, the national counselor-student ratio was 1:457 (Belasco 2013). Others report ratios of 1:333 and 1:318 (Engberg and Gilbert 2014; Stephan and Rosenbaum 2013). In 2013, the counselor-student ratio in Texas averaged 1:470 (Cumpton and Giani 2014), a ratio significantly higher than previously recorded data. While ratios vary, findings are uniform in that student-counselor ratios are too high for counselors to provide adequate college and career guidance, particularly for those who rely on their counselor's guidance as a primary source of college information (Belasco 2013; Bryan et al. 2011; Engberg and Gilbert 2013; Perna et al. 2008). A possible negative consequence, as it relates to HB 5 counseling requirements, is that with insufficient time for students, counselors may leave it up to the students or parents to seek guidance from counselors or find other means of support (Perna et al. 2008).

2.5 American Institutes for Research Report on HB 5 Implementation

The Texas Education Agency's (TEA) baseline study of HB 5, led by the Texas Workforce Commission (TWC) and American Institutes for Research (AIR), released in November 2015, serves as a secondary data source for this project. This report provides aggregate information about district endorsement offerings and student endorsement selection in the 2013-2014 cohort, through a study survey of 890 school districts across the state of Texas. This data provides support for the problem of disparate implementation strategies discussed previously, as well as gives stakeholders a quantitative picture of how districts are implementing HB 5. The survey questions focused on three basic implementation areas:

- The endorsements that are offered by high schools in each district and how they were selected.
- The options to complete an endorsement within each category.
- The forms of communication being used to inform students and parents of the new HB 5 requirements. (Mellor, Stoker, and Reese 2015)

2.5.1 Key Findings

Districts reported similar factors that contributed to the decision-making process regarding how to implement HB 5, as well as which endorsements to offer students. The 2015 AIR study, conducted by Mellor, Stoker, and Reese, found that 98% of districts considered their current course offerings first when determining which collection of endorsements to offer students. Only 28 districts mentioned other factors (existing partnerships with community colleges/universities, access to advanced technology labs, workforce/industry trends) that were taken into account when determining which endorsements to offer. This does not suggest what other considerations, if any, the majority of school districts employed when determining endorsement offerings.

A total of 87% of districts reported that they felt equipped for the change. However, "districts that reported not feeling equipped with the necessary information" gave several explanations for the situation. Common

descriptions include the "timing of receiving information on endorsement requirements" to "put endorsements together" and "a lack of clarity on endorsement requirements prior to implementation" (Mellor, Stoker, and Reese 2015).

The conclusions of the survey report provide a general idea of what has taken place following the implementation of HB 5, but it fails to suggest what strategies were used to interpret and implement the legislative requirements. Just over 50% of districts that responded to the survey state that they offer all five endorsements (Mellor, Stoker, and Reese 2015). This suggests that many schools have only offered endorsements based on what was already available within the district. The majority of the districts (75%) report no plans to change or modify endorsements, (Mellor, Stoker, and Reese 2015). This suggests that districts are experiencing some sort of unforeseen or self-induced barrier that is leading to a limited number of endorsement offerings, or that school districts lack necessary resources to innovate their course offerings to meet the standard needed to offer certain endorsements. However, this could also suggest that 35% of districts could be thinking creatively about how to expand current endorsement offerings. More information is needed to fully grapple with how school districts made decisions following the formal passing of HB 5.

2.5.2 Knowledge Gaps

Although the evaluation study provides valuable data, it leaves significant knowledge gaps in several areas, including resource availability, district partnerships, and possible shifts in counselor responsibilities and student guidance. Though the survey asked general questions about districts' readiness for implementing HB 5, it did not attempt to discover districts' specific needs, strategies, or ideas for how they could overcome barriers. Some of the specific questions that remained unanswered are the following:

District Administration

- Are schools working with ESCs and pooling resources? If so, how and to what extent?
- Are districts pooling resources to offer more endorsements? Are schools prepared to bus students to other schools in their district, or nearby, if they cannot provide sufficient variety? What could make this work? What are the transportation needs?
- Are there problems accessing technology resources due to lack of broadband infrastructure in some areas? Does this lead to disparities in the ability to implement certain endorsements?

Counseling

- What are counselors' needs in implementing HB 5? Do they have sufficient time and resources? If not, are there innovative ideas emerging to fill this gap?
- Are schools shifting administrative duties away from counselors to other personnel to meet increasing demand on counselors' time?
- Are students receiving career counseling or exploration in middle school before choosing endorsements? If so, what type?
- What type and frequency of information are parents and students receiving about HB 5 throughout the middle school years?
- If a student wishes to change their graduation plan or endorsement, what impact will this have on their high school completion and college acceptance? If it is too late for the student to change endorsements, what type of counseling will be offered in these situations?

Partnerships

- How many schools are choosing to develop local courses to meet endorsement requirements? Do these courses rely on input from local industry or community colleges?
- Are districts reaching out to industry professionals as educational resources, including guest speakers and practitioners in specialized fields?
- How can schools and curriculum be more flexible to quickly react to changing industry needs?
- What are the liabilities and barriers that schools face in developing industry partnerships (e.g. insurance, safety, supervisors)?
- Are unexpected or innovative partnerships emerging?

The knowledge gaps that emerged from the review of the AIR report guided many of the questions that were addressed in the district interviews. Essentially, these topics led much of the discussion and became the basis for the current study. The in-depth interviews covered the various partnerships that were created as a result of HB 5; administrators offered insights to the impact of HB 5 on counselors, and detailed information was provided for this research to explain student options and choice processes during middle school and after. The benefit of the design for this study is that it provided a large, representative sample of respondents to answer these questions in a rigorous manner and across a range of perspectives.

2.6 Legislative and Political Perspectives on HB 5

Prior to the publication of the AIR report, the research team conducted initial fact-finding meetings with twelve legislative leaders from various offices and committees involved in the formulation, passage, and oversight of HB 5 and representing both political parties. These discussions revealed additional background information on the development of HB 5, identified key knowledge gaps, and provided legislative leaders' perspectives on the future outlook of HB 5.

Many of the elected officials in office during the 2013 legislative session envisioned an education system that created a variety of options to serve all students rather than a "one size fits all" approach to education. This included the Career and Technical Education (CTE) and STEM aspects of HB 5, with a focus on how those courses could lead students into programs with long term career outcomes. Parents and students also supported this shift, as the previous 4x4 graduation plan (four classes in each of four core subjects) left little room for elective and/or CTE classes that would prepare students for specific future careers.

A major impetus behind the formulation of HB 5 was the anger and frustration of parents and school leaders about high stakes testing and the large number of mandatory End-of-Course exams. The system of endorsements was in fact a secondary effort led by the new leaders of the House and Senate public education committees, who sought a fresh approach to both college and career readiness that would support Texas's future economic prosperity by meeting industry employment needs. The Senate played less of a role in developing endorsements, as they were more focused on accountability and reducing the number of tests students had to take. The endorsements component of the bill came over from the House intact and remained relatively unchanged as it moved through the Senate.

The Democratic Caucus worked closely with Republican leadership in the Senate and House to ensure that caucus members' input was included in the final bill. Rating schools on an A-F scale was unpopular in the Senate, so the Caucus worked with other members to delay those ratings and ensure they were given to districts and not individual schools. A new bill to rate individual schools did pass in 2015, but will not be

implemented until 2016. The Democratic Caucus leaned heavily on the advocacy organization Raise Your Hand Texas and trusted superintendents for support in passing this legislation.

Some elected officials supported this policy shift because they believe it elevates blue-collar jobs as future careers in the eyes of students by making them aware of the salaries and opportunities offered by these industries. They also supported student self-selection into endorsement pathways, as opposed to others making that choice for them, in order to respect students' individual interests and aspirations. Other stakeholders supported the legislation because they believe a dual focus on career and college readiness it is the right direction for the state, and believe it will be achieved through academic rigor and excellent teachers.

Leaders expressed the importance of middle school in preparing students for high school and their choice of endorsement. They believe these grades are critical and that math and science performance are strong determinants of college readiness. For this reason, the decision to remove Algebra 2 from the Foundation High School Program drew a significant amount of criticism, but questions remain about whether it is the best indicator of college readiness. Some believe that it is inherently the best predictor of needed skills, while others argue that its success as a predictor depends on Algebra 2's inclusion in the Texas Success Initiative assessment, a college-readiness test. Other stakeholders noted that there is no official crosswalk between college readiness indicators and the Texas Essential Knowledge and Skills standards; therefore, it is difficult to determine whether students are truly being prepared for college in K-12.

Some legislative experts were concerned about the impact of this legislation on Higher Education requirements. Some of these concerns revolved around the creation of dual-credit courses through partnerships between high schools and community courses, including the quality of these courses and whether these credits will be transferable between institutions of higher education. Other concerns focused on the new Distinguished Level of Achievement, which students must earn in order to be eligible for automatic admission into public four-year universities and state grants for financial aid.

The following section provides a summary of the most commonly cited issues provided in these meetings.

2.6.1 Knowledge Gaps Identified by Key Stakeholders

Implementation: Stakeholders expressed a desire to know more about specific district-level needs during implementation in order to find ways to ease the transition. They were also interested in examples of best practices that provide ways to overcome barriers and demonstrations of successful partnerships that can be supported and replicated across the state. They were looking for partnerships between schools and industry and community colleges, as well as collaborations among schools and districts and examples of best practices at the ESC level.

Relationships with Business & Industry: Stakeholders wanted to know what barriers private companies may face as they attempt to partner with local districts, including the extent of the problems of liability and lack of resources. They were interested in knowing to what degree there exists a disconnect between industry and schools, as well as which endorsements offer the best opportunity for establishing industry partnerships. Some stakeholders wondered whether there is a way to make the high school curriculum more flexible so that it can quickly react and respond to industry needs and demands.

Role of School Counselors: Stakeholders were particularly interested in the impact of this legislation on school counselors, including how they are spending their time and how their workloads have changed.

These stakeholders expressed a desire to support counselors in the important role they play. Other questions related to counseling included how districts are implementing career awareness in their middle school curriculum, how schools are engaging and empowering families in the process of students selecting their endorsements, and how transferring schools during high school impacts a student's ability to complete their chosen endorsement.

Funding Challenges: Stakeholders had a number of questions about school funding, including how changes in transportation funding might provide districts with the opportunity to partner with each other to offer more endorsements, and whether increased flexibility in the calculation of Average Daily Attendance (ADA) may positively impact student access to a variety of endorsements by allowing them to take classes on multiple campuses. Stakeholders were also seeking examples of how technology integration can make endorsements more affordable and accessible through practices like distance learning. In addition, since charter schools are not required to implement endorsements, stakeholders wondered whether they are choosing to opt in, and if so, what their implementation strategies are.

Geographical Disparities: Finally, one stakeholder pondered how students might become "victims of geography" as a result of this policy. How does geography impact a district's choice of endorsements? Specifically, how can schools incentivize specialized teachers to come to districts that lack the cultural opportunities they may find elsewhere? Can business and industry incentivize teachers to serve in these places? One expert suggested that the recruitment of international educators may affect the future of the teaching industry. Others echoed the question of whether educator preparation will be impacted by this policy as the need increases for teachers with specialized skills, such as CTE. The overarching theme of these questions was a concern about whether all students will be afforded the same access to quality educators.

3. Research Design

3.1 Study Rationale

In order to answer questions about how individual school districts are implementing HB 5 and why those implementation strategies were chosen, this study employed a qualitative research methodology using semi-structured interviews with district administrators as the primary data source. District administrators were the first to discuss, interpret, and make implementation decisions about the HB 5 policy once it became law, so their insight is crucial to answering this study's research questions. By interviewing administrators across Texas, the research team was able to generate a composite picture of district experiences—both the interpretation and implementation of HB 5. Districts were selected according to region, size, and demographics to detail how a range of districts responded to the policy and what challenges they encountered. Narratives of "promising practices" were also compiled to highlight specific actions administrators believe have led leading to positive results.

According to policy scholar Dvora Yanow (1996), "case studies recount events enacted by many people in the intergovernmental, interdepartmental environment of a policy sector" (36). Brandeis University law professor Deborah Stone stresses the importance of connecting with what people think when crafting policy solutions to community problems. "Equity, efficiency, liberty, security, democracy, justice, and other such goals can be aspirations for a community" that are only realized when political actors understand the demands of individual communities as a part of the whole (Stone 1997, 42). Stone goes on to draw parallels between the political world and policy world, specifically, how community problems can become calls to action for policymakers. She highlights the critical need to engage and understand the people's perception of problems at the ground level. This research draws on both Yanow's and Stone's approaches and calls for a focus on the human dimensions of policy implementation processes, resulting in an exploratory study of the implementation of HB 5.

The following section describes the research design, outlining the guiding research question and highlighting the phases of this qualitative study: Exploration, Stakeholder Outreach, Sampling Frame, Formal Interviews, Data Analysis and Dissemination.

3.2 Research Design

The study design informs the research process by providing a formal road map for data collection and analysis. In order to explore the process by which implementation of HB 5 has occurred as an autonomous process in school districts across the state of Texas, three guiding research questions were initially developed to serve as the foundation for this qualitative study: How are school districts in Texas implementing HB 5? How were implementation strategies selected within the districts? and What implementation practices show promise for success, and how can they be replicated by other districts?

In contrast to the AIR study discussed in the literature review, which used a large sample survey model, this study design is purposive in nature. A purposive sample strategy is employed to allow flexibility and iteration in the sampling and analysis process and ensure a broad base of data points related to stakeholder perceptions and interactions (Creswell 1998). This model allows the research team to deepen their understanding of the phenomenon to be studied. A purposive sampling strategy directs the researcher to select individuals and sites for study because they can purposefully inform an understanding of the research

problem and central phenomenon in the study. "Decisions need to be made about who or what should be sampled, what form the sampling will take, and how many people or sites need to be sampled," (Creswell 1998, 118). These considerations are all addressed within the sampling frame.

This purposive model has also allowed the research team to snowball sample key stakeholders, including administrators and major policymakers, across the public policy and educational realms, to be included in this qualitative assessment of current implementation practices of HB 5. At its core, a snowball sampling method "identifies cases of interest from people who know people who know what cases are information-rich" (Creswell 1998, 114).

The research design for this project, outlined in Table 2, includes six stages: Exploration, Stakeholder Outreach, Sampling Frame, Data Collection, Data Analysis, and Dissemination. These six stages include a detailed literature review of all pertinent scholarly work, meetings with stakeholders affiliated with Texas public education policy, research participant selection, formal interviews with school district personnel, qualitative analysis, and final product dissemination.

Stage	Description of Sub-Sample	Description of Sampling Rationale	Sample Size	Full Description
Stage 1: Exploration	Literature Review Initial Meetings Identify Potential Case Study Samples	Theoretical / Purposive	Lit Review = 25+ sources, Relevant entities aware of capstone topic	▪ Compile relevant sources that build research context ▪ Compile list of all relevant players associated with GP ▪ Attempt to gain access to current information that ranks TX school districts ▪ Begin to narrow down the sample structure (number of cases and their breakdown) and what boundaries will be in place.
Stage 2: Stakeholder Outreach	Investigating groups that support/oppose GP, that have skin in the game	Purposive	Enough to establish well developed context of bill history, intent	▪ Conduct phone interviews with associations/groups that have vested interested in GP/k-12 edu policy. ▪ Associations/groups = TAMSA, TASA, TASB, client contacts ▪ Bill writers
Stage 3: Sampling Frame Finalization	Brief review of information gathered to date to identify best schools to build	Purposive	Level 1 = Regions Level 2 = urban, suburban, rural Level 3 = large, small Level 4 = LSE, HSE, Min, Industry	▪ Classify schools based on regional context = rural, urban, suburban (Stratified)

	case studies around			▪ Ensure each classification has minimum of 2 schools representing opposite SES composition (purposive)
Stage 4: Formal Interviews	Investigating current practices of implementation – most interactions will take place in person	Purposive	30 minute interviews with each official – total number should range from 3-5 in association with each school	▪ On the ground officials = superintendents, principals, counselors, PTA, local legislators ▪ Specifics should include rationale of school official in deciding how to implement GP
Stage 5: Analysis	Compilation and review of data from interviews			▪ Thorough review of gathered data ▪ Cross analysis with tri-agency data ▪ Identify reasoning behind institution specific transition/implementation policies/practices ▪ Identify barriers that exists – with each school classification
Stage 6: Dissemination				▪ Final dissemination to client and intended stakeholders

Table 2: Research Design

3.2.1 Stage 1: Exploration

A robust literature review was conducted during the Exploration stage to identify major scholarly work on key components of HB 5. This literature review provided the research team with an in-depth understanding of the scholarship on college and career readiness, the promotion of which is a main goal of HB 5. The literature review also examined key examinations on the state of student counseling, which plays a major role in implementation.

The literature review also drew on the recent American Institutes for Research (AIR) report on HB 5 implementation. Although this quantitative evaluation study provides valuable data, it leaves significant knowledge gaps in a number of areas. While this evaluation provides solid context around the 'what' of HB 5, the data fails to answer the 'how' and 'why' questions around policy interpretation and implementation. Although the survey asked general questions about districts' readiness for implementing HB 5, it did not attempt to discover districts' specific needs or how they could overcome barriers. Unanswered questions from the American Institutes of Research survey in areas of district administration, counseling, and

partnerships informed the questions posed during the next stages of research, including Stakeholder Outreach and Formal Interviews.

3.2.2 Stage 2: Stakeholder Outreach

In Fall 2015, the research team held conversations with education policy experts and policymakers to gain insight into the legislative intent and design of HB 5. Stakeholders included education policy officials, Texas legislators and their staff, and organizations and individuals that played a significant role in the education-public policy nexus. By having open dialogues with legislative staff within both the Texas House of Representatives and Senate, the research team developed a greater understanding of education reform in Texas over the recent decades. This institutional knowledge helped the team understand the roles of state agencies during the policy formation period and connected the researchers to policy experts across Texas who played critical roles in the debate around HB 5. This stage also served to uncover stakeholder recommendations of districts to be considered for study later in the research process.

3.2.3 Stage 3: Sampling Frame

To gain a thorough understanding of district implementation strategies, it was important to seek out a broad range of experiences across different types of districts while collecting data on the perceptions, decisions, and strategies within each district around HB 5. To gather such extensive and deep data, a large-scale survey was not appropriate, as a simple survey of all school districts would fail to produce a detailed understanding of implementation strategies. The state of Texas has over 1200 school districts, and given the time and resource constraints of this research project, meeting individually with personnel from each district was not feasible. Instead, the research group formulated a comprehensive data collection strategy that involved in-depth, one-on-one interviews with key personnel from school districts across six regions of the state of Texas.

Development of Selection Criteria

The sampling frame was designed to form a rich sample base of Texas school districts that would provide a wide and robust data set from which to build a dynamic narrative around the implementation of HB 5. This data set was intended to allow the research team to triangulate to a set of common experiences with the policy in order to create an aggregate narrative about the implementation of HB 5 across the state of Texas. The chart on the following page depicts the finalized sampling frame.

Multi-Level Approach to Selecting Schools for Research Case Studies						
Level 1 Based on ESC Regions Begin by selecting 12-15 schools in each region	North (9, 10, 11)	Central (6, 12, 13)	East (7, 8)	West/Pan (14, 15, 16, 17, 18, 19)	Gulf (3, 4, 5)	South (1, 2, 20)
Level 2 Based on TEA district type classifications	Rural		Urban		Suburban	
Level 3 School size within districts based on UIL classification	Large Size (5A/6A)		Small Size (4A & below)			
Level 4 Socioeconomic status of schools within districts based on Title 1 eligibility	High SES		Low SES			
Level 5 Based on TEA district data At this level 2-5 districts in each region will be selected	Minority Composition					

Table 3: Sampling Frame

The sampling frame ensured that a minimum of 140 districts were considered for inclusion in the study and that a minimum of three and a maximum of six districts were selected to represent each region. The regions were derived from Education Service Center (ESC) regions, which were grouped into North, Central, East, West/Panhandle, Gulf, and South. While ESC regions could have been combined in a number of ways, this regional breakdown ensured that school districts were appropriately grouped based on geographic similarities and the availability of compatible school districts. The districts selected in each region were further sampled by classification, school size, socioeconomic status, and minority composition. It was assumed that not every criterion level would be satisfied for every region; however, the sampling frame was crafted to ensure the best representation possible within this purposive research design. It is worth noting that the researchers failed to receive adequate responses from school districts within the Eastern region, as depicted in the regional map below.

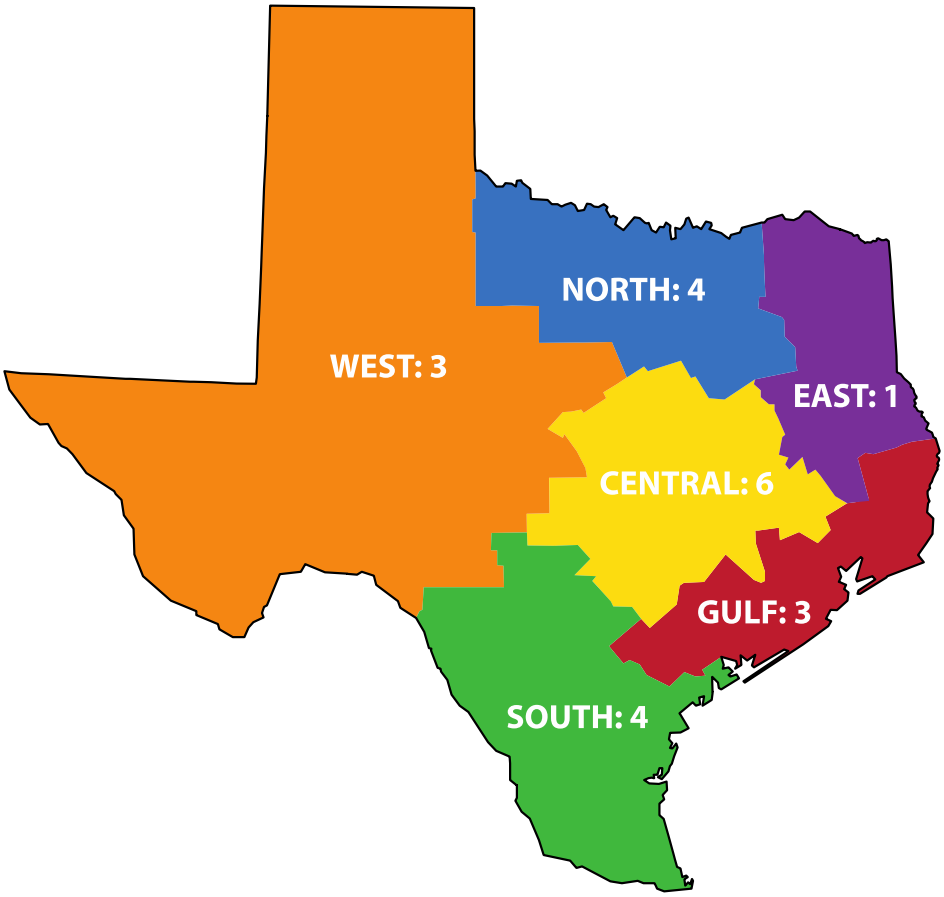

Figure 3: Study Regional Map with District Count

The sampling frame displayed in Table 3 represents the process by which school districts were considered at each level of the selection criteria. District classification serves to distinguish districts by the differing communities within which they exist – rural, urban, and suburban. These classifications, based on district type data from the Texas Education Agency (TEA), ensured that school districts were selected to represent the diverse characteristics of each region, when applicable. The third level of the sampling frame is also based on population, but in this case how population is distributed within districts by school size. This distinction is based on the UIL classification of each school within the district, when applicable.

The final two selection criteria focus on socioeconomic status and minority composition. Socioeconomic status, determined by the Title 1 eligibility of high schools within the district, was included to ensure that districts considered for this study represented differing makeups of fiscal and physical resources. District minority composition was determined by TEA data. Based on trends in the literature review related to equity, the research team felt that the sampling strategy should not overlook the importance of district minority composition. Although a study of this nature could have included a host of possible criteria, the sampling strategy chosen ensured that a wide range of school districts were considered throughout the selection process.

If a school district elected to opt of participation in this study, or was disqualified from inclusion for any reason, the district was immediately removed from consideration and replaced with a district of similar characteristics from the running list of possible rural, suburban, and urban districts within the respective region in order to maintain the integrity of the research sample. Of all school districts invited to participate in this study, only one responded to decline interest in taking part in this research. It was clear that interest existed across the state in this study, but many researchers experienced a lack of follow through from many districts originally contacted.

District Selection

Region	Originally Selected Districts District Classification, School Size	Participating Districts District Classification, School Size
North	Rural, Small	Rural, Small
	Suburban, Large	Suburban, Large
	Urban, Large/Small	Urban, Large/Small
	Rural, Small	Rural, Small
Central	Suburban, Large	Suburban, Large
	Suburban, Large	Suburban, Large
	Suburban, Large	Suburban, Large
	Suburban, Large	Suburban, Large
	Urban, Large	Urban, Large
	Rural, Small	Rural, Small
East	Suburban, Large	Suburban, Large
	Rural, Small	
	Rural, Small	
West/Panhandle	Suburban, Large	Suburban, Large
	Rural, Small	Rural, Small
	Urban, Large	Urban, Large
	Rural, Small	
Gulf	Suburban, Large	Suburban, Large
	Urban, Large/Small	Urban, Large/Small
	Suburban, Small	Suburban, Small
	Rural, Small	
South	Suburban, Large/Small	Suburban, Large/Small
	Suburban, Large	Urban, Large
	Urban, Large	Urban, Large
	Rural, Small	Rural, Small

Table 4: District Selection

By taking into account the school selection criteria outlined in the sampling frame, the research team considered school districts all across Texas. Table 4 identifies the characteristics of the districts that were initially selected for the sample compared to those that eventually participated in the study. Some districts contain more than one size of school.

The research team considered prospective district within the six regions with the goal of ensuring that the appropriate number of districts, based on district classification, were represented overall. A comprehensive list of Texas schools serving grades 9-12, taken from TEA data, revealed that 19% of Texas public high school students are located in rural districts, 64% in suburban districts, and 17% in urban districts. The research team attempted to approximate these proportions in the sample.

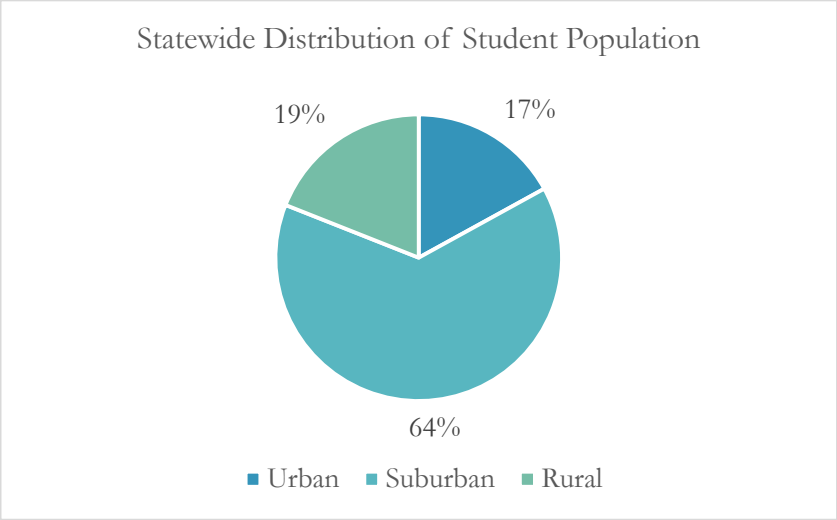

Figure 4: Statewide Distribution of Student Population

Of the students in the 25 school districts originally selected, 2% were in rural districts, 36% were in suburban districts, and 62% were in urban districts. The analogous percentages for districts who eventually participated in the study are 1% rural, 31% suburban, and 68% urban. While the percentage of students represented by urban districts in the sample is much larger than the state as a whole, it was necessary to sample enough urban districts to have a basis to compare them. The final tally of responding districts by classification is 6 urban districts, 10 suburban districts, and 5 rural districts.

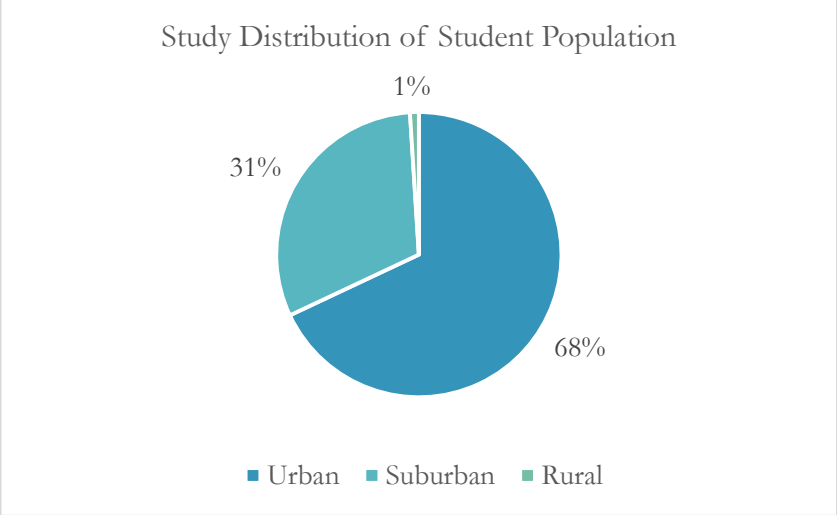

Figure 5: Study Distribution of Student Population

After selecting each school district, the research team contacted the district superintendent to initiate the invitation to participate in this Institutional Review Board (IRB) approved study. After speaking with each district superintendent's office, the research team finalized the list of interviewees who would participate in the study on behalf of the district by speaking with personnel from both the district's central office and various school offices. This phase of outreach allowed the research team to connect with central office staff,

high school administrators, counselors, and Career and Technical Education (CTE) personnel, who all played a role in implementing HB 5.

Twenty-five districts were initially selected using the sampling frame. Including replacements for unresponsive districts, a total of 44 districts were contacted. Initially all 44 identified districts received an invitation to participate in this study from the team's primary investigator. Each district was contacted for a second time (and third time if no response followed the second attempt) to ensure the original invitation was received by the appropriate district personnel. If districts failed to respond to the emailed invitation, members of the research team contacted each district by phone to articulate the purpose of the study and the interest of the research team to include that district in the study. Of that 44, one district explicitly declined and 22 issued no response. A total of 21 districts agreed to participate in the study. This resulted in a total of 31 in-depth interviews with district and school personnel, as well as, in some districts, community partners such as Chambers of Commerce that provided support for districts' implementation of HB 5. These interviews with community partners were the result of snowball sampling from district interviewees. 31 interviews represented the total sampling number to include both school district personnel and community personnel that played a defined role in the interpretation and implementation of HB 5.

3.2.4 Stage 4: Data Collection

Each formal interview was conducted by one or more members of the research team, with the district personnel identified in the sampling stage. The data collection stage provided the primary data to be analyzed by the research team. These confidential interviews provided a venue for district and school leaders to speak openly about their initial feelings about HB 5, their role in district implementation decisions, challenges encountered, and any practices they had engaged in that seemed to show promise for success.

Interview Method

Members of the capstone research team scheduled and conducted 45-minute to 1-hour interviews, in person or via phone call, with a range of district-level personnel who were involved in the formulation and execution of HB 5 implementation strategies in their district. This varying interview length was determined based on the feasibility of access to district personnel and the availability of personnel based on professional schedules. The finalized interview protocol involved the development of wide-ranging questions that were developed based on many of the knowledge gaps uncovered in the AIR report (all of which are outlined in the above sections of this report). These questions were peer reviewed before being finalized for field use. Cresswell (1998) provides the conceptual framework to explain why individual interviews were not only the most practical research method for this study, but also the most powerful. "Interviews share stories of their [personnel's] internal, individual framing of participatory aspects of the implementation process," (Creswell 1998, 66). This individual framing is at the root of why it was critical for this research team to connect with district personnel who were directly involved in the interpretation and implementation of HB 5 in order to answer questions about why specific implementation strategies were chosen.

The entire research team was introduced to formal interview techniques by the primary investigator (faculty advisor) of this study. This guidance included formal seminars on effective interview protocol as well as interview practice sessions. One-on-one, semi-structured interviews provided the necessary intimate setting for district personnel to speak openly, and at length, about their individual experiences in attempting to understand the legislative policy of HB 5 and craft implementation strategies. This form of interviews allowed each interviewee to provide the researcher with a narrative of the district's approach to HB 5. Interview scholar Steinar Kvale describes narrative interviews as such that "center on the stories the subjects

tell, on the plots and structures of their accounts," (Kvale, 2009, p153). These semi-structured interviews provided the venue by which district personnel could openly provide the narratives to inform the researchers of how and why districts responded to the legislative mandate. The interviewees also directed members of the research team to other candidates for interview, both within the school district and community, who played a significant role in the implementation of HB 5. These secondary research participants added to this study's total sampling of interviewed personnel that contributed to the implementation of HB 5. Employing this snowball sampling method ensured that the research team identified the relevant personnel who could best articulate their district's policy interpretation and implementation process.

3.2.5 Stage 5: Data Analysis

The thematic data analysis process included mass compilation of masked data along with thorough review of key challenges, findings and promising practices from the perspective of each interviewee. "Thematic analysis in its simplest form is a categorizing strategy for qualitative data where researchers review their data, make notes and begin to sort it into categories," (Boyatzis, 1998). Each researcher scheduled and performed interviews with school districts across one or more regions of the state. All researchers participated in the interviewing process and followed interview protocol by capturing detailed interview responses for team review later in the data analysis process.

Following each interview, the researchers wrote detailed analytic memos based on notes taken during the interview. These memos summarized key points of the completed interview, including responses to a defined set of critical research questions that every interviewee was asked to respond to. These critical research questions are: What endorsements are being offered? What partnerships exist between the institution/district and local industry? What specific role does the school counselor play in the implementation of HB 5? On a scale of 1-5, how comfortable are you with the intention and implementation of HB 5? Could you identify one word to describe your experience with HB 5?

The responses to these questions were coded in a private data spreadsheet to allow the researchers to analyze the responses from each masked interviewee. After the completion of all interviews, the research team came together to share all masked data collaboratively, to assess findings for possible trends, as well as identify challenges, promising practices, and potential policy recommendations. All identified themes and issues were discussed at length to ensure no researchers bias had affected or shaped the interpretation of interviewee data.

A detailed thematic codebook was developed by the research team to reflect both the broad and narrow themes that arose out of every interview. The research team analyzed each masked analytic memo to uncover any promising practices or challenges identified by interviewees, as well as uncover any issues that populated districts across region and demographics. After compiling individual lists of potential key findings, the research team cross-referenced themes uncovered in the interviews with those themes uncovered during the exploration stage of the research design, in order to highlight any commonalities or unexpected findings.

The research team discussed prospective policy recommendations that could address the various challenges uncovered in the research. The research team did not set out in search of a specific number of issues or challenges to address. Instead, researchers focused on listening to the concerns and experiences of school districts to uncover specific barriers that policy could potentially address.

3.2.6 Stage 6: Dissemination

The Texas Education Grantmakers Advocacy Consortium (TEGAC) has determined that the products from this study will include this formal policy report, for dissemination to both TEGAC members and members of the Texas Legislature before the start of the 85th legislative session, an executive summary for dissemination to an even wider set of education stakeholders, and an educational parent's guide. The purpose of the policy report is to communicate noteworthy experiences of districts across the state—experiences that highlight challenges as well as implementation practices that districts believe are successful. The purpose of the executive summary of the policy report is to provide the audience a snapshot of the project's research design, guiding research questions, relevant stakeholders, uncovered challenges and promising practices, and finally provide policy recommendations for policymakers and policy experts to consider. The purpose of the parent's guide is to communicate to parents the intent of HB 5, the challenges districts are experiencing, and suggested questions they can ask their student's counselor.

3.3 Research Limitations

Primary research participants were district personnel. Secondary research participants included community partners who supported school districts in the implementation of HB 5. IRB policies did not allow this research team to involve any students or parents in this study, which is a critical research limitation. Because the state of Texas supports over 1200 school districts, the research team could not have feasibly conducted 1266 in-depth interviews in 45 days. The 22 districts that did not respond to the initial research invitation presented an additional research limitation. In order to counteract this limitation, the research team focused on collecting a very robust amount of data from the participating districts, as evidenced by the in-depth, semi-structured interviews.

As addressed above, the research team committed to collecting data from targeted numbers of school districts through in-depth interviews with a variety of district and school personnel who were involved in the interpretation and implementation of HB 5. Researchers also reached outside of district personnel, via snowball sampling, to community stakeholders, such as Chambers of Commerce, to better gauge the interaction and perception of district activity in response to the HB 5 policy. This approach allowed each researcher to deeply connect with key players in evolving educational ecosystems in each region to acquire a better understanding of how HB 5 was implemented.

SECTION II: FINDINGS

This study set out to answer three guiding research questions:

- How are school districts in Texas implementing HB 5?
- How were implementation strategies selected within the districts?
- What implementation practices show promise for success, and how can they be replicated by other districts?

The following three chapters will address the first two research questions by listing district perceptions of the state's role in HB 5 implementation, the administrative challenges that districts have faced around implementation, and the barriers districts have experienced to establishing successful partnerships with industry and higher education partners. The final chapter of this section will discuss promising implementation strategies and how they can be replicated by other districts.

Several key findings that correspond to the first two research questions are highlighted in the box below.

Key Findings: The Hows and Whys of HB 5 Implementation

- **Five endorsements, but many pathways:** The vast majority (17 out of 21) of districts offer all five endorsements within their district. Three out of the four that do not offer all endorsements are small, rural districts. However, 11 out of 21 districts—primarily suburban and urban districts—noted that they do not offer all pathways within each endorsement at all of the schools in the district.
- **Most districts have industry partners:** Twenty out of 21 districts have at least one industry partnership intact. The only district that does not is a small, rural district.
- **Pathways predate HB 5:** Thirteen out of 21 districts reported that HB 5 implementation decisions were based on what courses the district already offered. Ten out of 21 districts specifically noted the presence of career clusters before HB 5. One district reported that it used the "pathways" terminology even before HB 5.
- **No standard approach to counseling:** While all districts reported that counselors play an important role in implementing HB 5, the specifics of this role vary widely. In some districts, counselors develop five- and six-year plans with students, beginning in early middle school, while in others, students do not choose their endorsement until the end of 8th grade. In some districts, the counseling role is taken on by non-counselor personnel, including principals, deans, registrars, academic advisors, and volunteer mentors. Many counselors have "other duties as assigned," such as lunch duty, but these vary by district and even school. However, most districts—15 out of 21—agree on one thing: counselors feel overwhelmed by their multiple duties and limited time.

4. District Perceptions of the State's Role in HB 5 Implementation

Conversations with school district administrators revealed that, while most districts have a favorable opinion of the intent of the HB 5 policy, they are also frustrated by what they perceive as a lack of guidance by legislative policymakers and the Texas Education Agency (TEA). While this may have been by design, in order to allow local district control of the process, some districts expressed frustration about the lack of a centralized state-level resource to which they could direct all HB 5 implementation questions. They also expressed concern about the short timeline of implementation. Examples of these perceptions are highlighted in this section.

4.1 Most Districts Are Satisfied with Perceived Legislative Intent

Overall, the majority of districts in the sample are implementing this policy with the goal of following the Legislature's stated intent and providing students the opportunity to gain career credentials while in high school. As represented in Figure 6 below, when asked how comfortable they are with the implementation and policy of HB 5 on a scale of 1 to 5, responses averaged 4.2 for all districts. Only one district expressed frustration regarding the intent of the policy, and as a result, has chosen to guide the vast majority of students into the multidisciplinary track so they can, in the district's opinion, better experience a variety of classes and career opportunities in preparation for higher education.

When asked how comfortable they are with the implementation and policy of HB 5 on a scale of 1 to 5, responses averaged 4.2 for all districts.

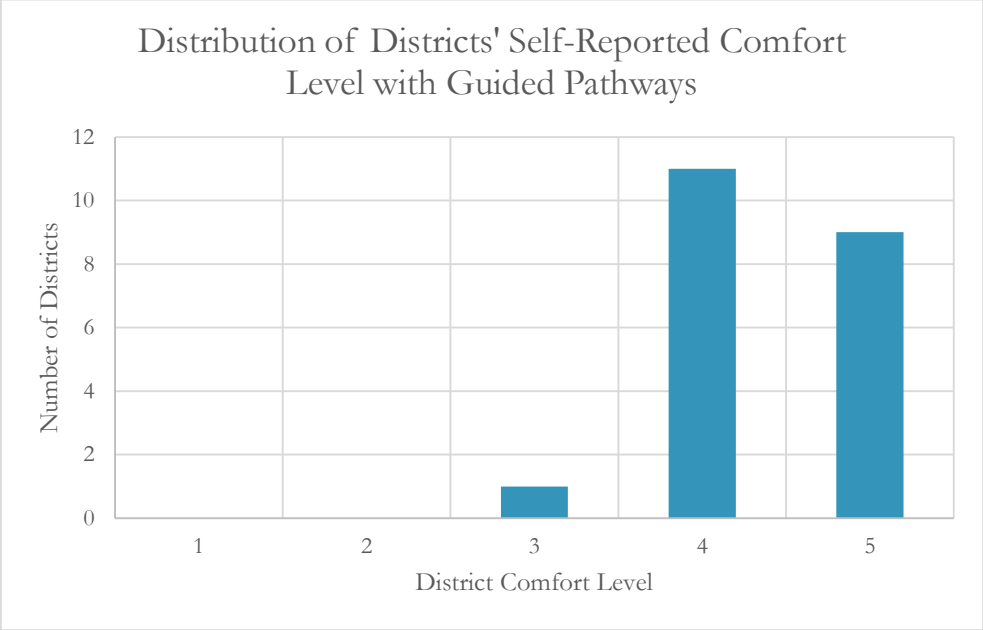

Figure 6: Districts' Comfort Level with HB 5

Figure 7: Words Districts Used to Describe HB 5

4.2 Many Districts Are Frustrated by Perception of Failed State Role

Despite being generally satisfied with the intent of HB 5, many districts are frustrated by what they perceive as failures on the part of the state in their role in HB 5 implementation. They believe that the state has not provided adequate guidance for implementation decisions, and, in particular, are frustrated that they cannot identify one centralized resource at the state level to which to address their implementation questions. In addition, many districts expressed concerns about the short timeline given by legislators for the implementation of the HB 5 policy.

Key Findings: District Frustrations with State Role in Implementation

- Ten out of 21 districts perceived a lack of state guidance with HB 5 implementation decisions.
- Five out of 21 districts expressed a wish for a central resource at the state level to address implementation questions.
- Ten out of 21 districts felt the HB 5 policy implementation timeline was too short and did not align with the school calendar.

4.2.1 Districts Perceive a Lack of State Guidance

One common theme, discussed by about half of the school districts in the sample (10 out of 21), centers around a perceived lack of guidance from the state Legislature and the TEA regarding how exactly to implement HB 5. While HB 5 was being discussed by the Legislature, some school districts and chambers of commerce were actively involved in the development and passage of the HB 5 policy. However, across the state most school districts were not included in the rulemaking or legislative process and knew little about the details of the new policy as it was being passed.

Four districts made a point of sharing their frustration with the rollout of the policy and how there was no real direction given to any school districts in the months right after passage, when they were tasked with creating implementation plans from scratch. Administrators who were involved in drafting the bill were left confused as mixed messages came from the TEA and the State Board of Education (SBOE) regarding course alignment and other curriculum-related items. For example, one district noted that a Speech course was not initially part of the curriculum requirements in the bill, but was added later by a ruling from the SBOE. Stakeholders who were not actively involved reported having even less direction on how to begin to lay the groundwork for this new policy.

One District's Unique Attitude Toward HB 5: Consequences for Implementation

One large, suburban, Central Texas school district has a substantially different attitude toward the HB 5 policy compared to the majority of districts. The district views endorsements as forcing students to specialize too early. This attitude has directly impacted the district's choice of implementation strategy. It is important to note that the district serves a student population that is composed of mostly college bound students with parents who are also college educated and tend to have a higher average of advanced degrees.

This district prefers the Multidisciplinary endorsement and encourages its students to choose it, believing it allows students to explore and learn as they choose, rather than forcing them into an endorsement that, according to the district, is not useful for their future college careers. The district feels that forcing students to specialize in high school is bad for their future development. They also claim that this early specialization will cost families more money in the future when students change college majors several times due to not having been able to experience different subject matter areas in high school. This district would like to see the Multidisciplinary endorsement become the new "recommended" plan, analogous to the former Recommended High School Program.

4.2.2 Districts Wish for Centralized Resources at the State Level

Five districts went further in expressing their frustration with the perceived lack of guidance for implementation decisions, citing a specific lack of central resource to which they could address their questions. Comments from interviewees on this subject demonstrated their confusion about how to obtain guidance for HB 5 implementation. Perceptions include: "it was rocky trying to figure out the unknown;" they were in a "back and forth with the SBOE over certain issues," with multiple revisions to their plans, and there was "no interpretation, just legislative text," coming from the TEA.

Other districts complained about the bill "lacking clarity, being too complex and convoluted," and how the information they were receiving from the state changed constantly and they were never clear on if they were

"doing the right thing." Administrators felt that the state kept "changing the rules of the game" when they felt they had reached an acceptable implementation plan. When districts did try to reach out for help, it was unclear to whom they should direct their inquiry. Some districts that went to the local Education Service Centers (ESC), which aggregate districts into regions in order to provide support services, were met with "little guidance and no help." While other districts had a positive experience with their ESC, several expressed frustrations with the lack of accurate and timely information.

Echoing this worry, three districts shared their concern about the lack of dedicated TEA staff assigned to the rollout of the HB 5 policy. Districts are not aware of any one central point of contact at the TEA for district and school administrative staff to utilize for assistance as questions and problems arise. While administrators can contact the curriculum department at the agency with questions, there is not a main administrator or program director that stakeholders are able to reach out to with specific comments or questions regarding the provisions of the policy. There is no HB 5 point of contact clearly evidenced on the TEA website, which substantiates what the districts shared. Currently, they might have to contact several different offices to get a complete answer to their question. One district suggested appointing a legislative liaison who is responsible for disseminating the same information to all districts, as opposed to conflicting directions they report receiving from different staff at the TEA.

4.2.3 Districts are Frustrated by Short Implementation Timeline

Finally, 10 districts referenced the short amount of time they were given to put this policy in place in their schools. Even districts that had some version of endorsements or career clusters already in place prior to the passage of HB 5 had to implement the additional requirements of the policy, since all students now need to choose an endorsement. The Legislature passed the bill in June 2013 and the policy went into effect for the 2014-2015 school year. Rules were not finalized until January of 2014. This left districts with less than a year to create their endorsement paths, determine their base degree plan, work out how to fit required courses into their course offerings, train their counselors, staff their courses, and fulfill a multitude of other requirements.

Districts are still coping with how best to fulfill these necessary components for their future classes, while not having any ability to benchmark or grade their current practices (as a result of not having a graduating class to evaluate). Many districts felt the legislatively required implementation date was too quick and that there should have been an additional year between the bill's passage and the first class cohort. They echoed that most bills coming from the Legislature are implemented too quickly and that there should be a longer implementation timeline for policy changes, so they can be fully worked out by the TEA and SBOE before then being disseminated to districts. Four of the districts sampled talked in-depth about their frustration with the imposed timelines in the bill. These districts cited the need for additional time between policy rollouts and the date of bill passage, as the calendars of schools do not align well with the legislative calendar during years when the Legislature is in session. One interviewee expressed his frustration with the lack of timeliness from the agency by saying it left them "rudderless."

4.3 Summary

School districts are, overall, comfortable with the intent of the HB 5 policy, rating their comfort an average of 4.2 on a scale of 1 to 5. However, many districts expressed frustrations with what they perceive as failings in the state's role in HB 5 implementation. Specifically, 10 out of 21 districts said they felt a lack of guidance

from the state. Five districts expressed a wish for a central resource at the state level to which they could address their implementation questions. Ten districts also said they were frustrated by the short policy implementation timeline.

Stakeholders at the state level, including legislative policymakers and the TEA, should bear these concerns in mind when implementing future educational reform policies. In the meantime, the TEA could take immediate steps to designate a staff member or team as the official HB 5 resource, and make this point of contact clear to districts.

5. District-Level Challenges in HB 5 Implementation

5.1 Coordination Challenges: Consistency Within Districts

Districts reported challenges related to their own administration of the implementation process. These include challenges around the middle-to-high school transition, which is an important time as students choose their endorsement. Large suburban and urban districts also reported difficulty unifying their implementation approach across multiple schools. Relatedly, districts encounter transportation challenges when students need to be bused around the district to take specific courses. These administrative challenges may become more severe as districts transition to all students falling under the requirements of HB 5.

Key Findings: District Coordination Challenges in HB 5 Implementation

- Two districts, one urban and one suburban, reported administrative challenges managing student endorsement choices in the middle-to-high school transition.
- Two large urban districts, out of 6 in the study sample, have experienced difficulty unifying their HB 5 implementation approach across all high schools in the district.
- Three districts, two suburban and one urban, reported concerns about the increased busing necessary to give all students in their district access to all endorsement options.

5.1.1 Districts Face Administrative Challenges Around Middle-to-High School Transition

The transition between middle and high school presents administrative challenges for HB 5 implementation. Middle school counselors are often not adequately prepared to advise on high school choices, and may not feel a sense of ownership of students' high school outcomes. In addition, there are logistical barriers to moving student data smoothly from middle schools to high schools. For example, some schools record student endorsement choices and graduation plans on paper, which must be physically moved from place to place, while others use student information systems that are specific to the school and do not connect to other systems within the district. These challenges are compounded by the fact that students may change their choice of endorsement between 8th and 9th grade, so data may not be accurate, even if present.

While HB 5 does not require students to formally select an endorsement until 9th grade, some districts have begun to integrate graduation planning into middle school. One large urban district has moved to a 6-year planning framework for graduation, with academic counseling beginning in 6th grade, but noted that this has placed an additional burden on middle school counselors to have a much wider base of knowledge than was previously required. A suburban district in the Gulf region cited similar concerns, adding that their district had initially had a "rocky" time instilling "more sense of ownership" of high school outcomes in middle school counselors.

Another suburban district in Central Texas noted that middle school counselors have typically not been trained to prepare younger students for college and careers. This district has also moved development of personal graduation plans to the 8th grade year, but has faced administrative challenges with students changing their minds over the summer, since changes to graduation plans must be signed by the parent, in addition to their signature on the original plan.

One large urban district felt that graduation planning should uniformly be moved down to 8th grade rather than 9th, but cited the need to increase family involvement as one of the major challenges to implementing

this change. In addition, the district reported difficulty in getting personal graduation plans to "follow" students from middle school to high school due to the lack of a standardized student information management system that would allow school administrators at all schools in the district to access the same student information. This district also experienced problems with their middle school to high school feeder system, which is geographically based. However, students may attend a high school outside their normal geographic area in order to obtain their chosen pathway.

5.1.2 Large Districts Struggle to Unify Implementation Across Schools

Two large urban districts, representing a third of the urban districts in the sample, cited problems unifying district implementation approaches over multiple high schools. They observed that, even if they are able to offer all endorsements at all high schools in the district, it is nearly impossible to offer every pathway within an endorsement at every high school. This is due to staffing and resource constraints, particularly around CTE courses. Some districts have responded to this challenge by busing students between high schools for particular courses, while in other districts students can only take courses at one high school, and so must choose their high school based on their intended pathway.

Each solution poses its own problems: busing is expensive and time-consuming, while not busing limits student choices. In some cases, busing leads to intra-district school transfers if a student wants to change endorsements partway through high school. Some districts are moving toward further specialization by creating magnet programs or academies, while others are moving the opposite direction and exploring the idea of standardizing their offerings across the district. Overall, the largest districts seem to be in consensus that offering every pathway at every school is an impossible goal.

5.1.3 Busing Students to Expand Course Options May Prove Unsustainable

Transporting students around the district to provide access to courses is costly, both in terms of money and instructional time, and the problem will grow as the number of students affected by HB 5 expands. Three districts mentioned concerns about the cost of transporting students to other schools that offer the courses they need to take for a particular endorsement, or to internships or jobs outside the school. One stated that they can see this issue being a serious problem in the future as they bring all four grades of students into the endorsements, and it is likely that they will have to bus students between campuses to ensure that any student can take the classes needed for their endorsement. One district believes they will be busing approximately 500 students by 2017 for various courses. Another district mentioned that due to the amount of time it takes them to bus a student to another campus or to an industry partner, the student often gets very limited instruction time, making it not worth the cost of the trip. Due to the way the Legislature appropriates transportation dollars, many schools receive little to no funding from the state and have the entire cost of such trips. These problems will be made worse as more students enroll in classes held in venues outside of their home campuses.

5.1.4 Summary

HB 5 has posed administrative challenges for districts. These challenges were reported by urban and suburban districts in the sample. Middle school's importance as a time to plan for high school has become increasingly important under HB 5, since students must be prepared to choose their endorsement in their first year of high school. However, one urban and one suburban district reported administrative challenges around the middle-to-high school transition. Two large urban districts, representing one-third of the urban

districts sampled, said they had difficulty unifying their implementation approach across all schools in the district. Three districts reported concerns about busing students to expand their course options, which they view as potentially unsustainable in the future.

Large districts can address some of these administrative challenges using promising practices that will be discussed in upcoming chapters. For example, a student information management system that connects all schools in the district can facilitate the sharing of student information among schools. A cross-functional administrative team at the district level can help the district coordinate its implementation strategy across multiple schools. However, the problem of busing may not be solved at the district level. If districts are committed to making all courses available to all students using busing within the district, but this strategy is not financially sustainable as the number of students affected by the HB 5 grows, additional funding can only be provided through intervention from legislative policymakers.

5.2 Curriculum Challenges: Coordination and Sequencing

The endorsements introduced by HB 5 imposed new curricular requirements for districts. This has created challenges for districts, who need to coordinate these requirements with the already established Texas Essential Knowledge and Skills (TEKS). The endorsement structure also requires that courses be part of a "coherent sequence," which has led to challenges for both districts offering the courses, and the students who must pass the courses in sequence. A coherent sequence is the timing of the courses that students take in an endorsement strand. For example, a student must take Intro to Welding before they can take Advanced Welding.

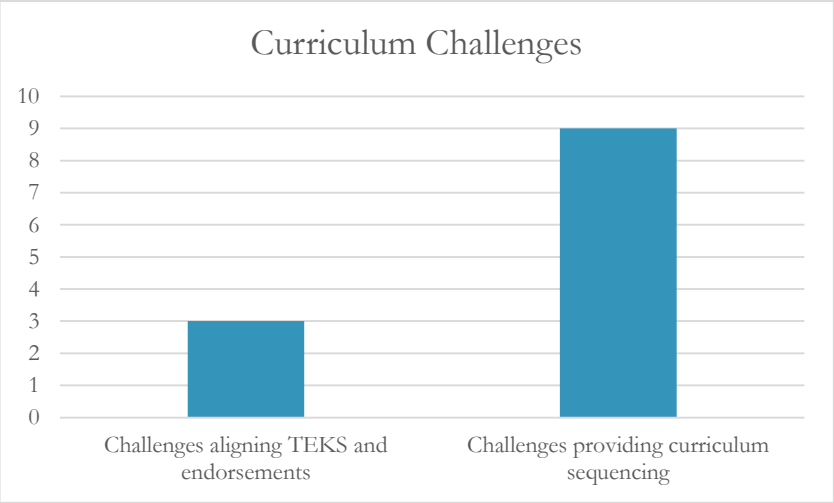

Figure 8: Curriculum Challenges Faced by Districts

5.2.1 Districts are Frustrated by Attempts to Coordinate Between TEKS and Endorsements

Districts expressed frustration at the necessity of working with multiple sets of curriculum standards—those for the endorsements and those for the TEKS. Coordinating them can be burdensome, particularly in the case of Career and Technical Education (CTE) classes, where there may be a mismatch in requirements.

About 20% of districts brought up the relationship between endorsements and the TEKS standards. A small rural school in North Texas expressed frustration that they had to make adjustments to classes within

endorsements because of changes to the TEKS that caused them not to perfectly align with the endorsements. In their words, "they (TEA and the SBOE) keep changing the rules of the game." A large urban district in the same region also mentioned the necessity of converting TEKS requirements to endorsement requirements, although in their case they found it less burdensome because of their previously established curricular structure.

The CTE director at a large Central Texas suburban district feels that the TEKS do not adequately provide for middle school career exploration. This has a negative impact on student awareness of CTE options in high school until it is too late for them to complete a particular pathway. A small rural district in South Texas has experienced intra-district problems with high schools not coding technical courses as "science" by TEKS standards, even though the district feels it has complied with TEA guidelines for developing such courses. The district feels this miscoding has led to problems with college acceptance for affected students.

5.2.2 Districts Face Challenges Sequencing Courses within Endorsements

Language in HB 5 requires that endorsements be composed of a "coherent sequence" of courses. This poses challenges for districts that have limited ability to offer specific courses within pathways, as well as students who fail courses needed to complete endorsements and graduation requirements. About 40% of the districts that participated in this study mentioned problems related to the sequential nature of courses in pathways.

One small rural K-12 school reported limited ability to offer specific courses because of the inflexibility of its master schedule, since the district has such a small number of teachers overall. Neighboring suburban districts in Central Texas take opposite approaches to handling high-demand courses. One limits course enrollments by using aptitude tests, while the other admits students over the capacity of necessary resources (for example, two to three students must share a computer) in order to allow students to take needed courses in the appropriate sequence. The district that limits course enrollments repeatedly emphasized their fear that students will drop out because of course sequencing issues. For example, if they fail a year of foreign language, or if they cannot get into the last class in a sequence, students who may already be at risk may decide to quit school altogether as result of not completing their endorsement. The neighboring district, meanwhile, has almost the opposite concern, feeling that districts have too much flexibility in determining, for example, what constitutes an "advanced course," and that some districts might just "play the game" to force courses into certain sequences that may not actually be coherent or an advanced class.

Another Central Texas suburban district echoed concerns about keeping students on track if they fail a course, particularly in the context of STEM, as courses grow increasingly challenging. In addition to posing challenges for individual students, this causes staffing and scheduling problems if student cohorts in certain endorsements shrink as they progress toward more advanced courses. A small rural district in North Texas experienced a related issue with students who "flip flop" between endorsements, as high schools face pressure to help them complete the required course sequence on a compressed timeline. A large urban district echoed concerns about students failing courses in an established sequence and being unable to remain on track to finish an endorsement. This district has also encountered challenges with some of their early adopter students' course selections, as reflected on transcripts, not aligning with their endorsement or personal graduation plan, sometimes necessitating course changes for current seniors in order to fulfil last-minute graduation requirements.

This same urban district administrator noted particular challenges around their goal for every student to graduate with a Distinguished Level of Achievement, which requires all students to take Algebra 2. This

requires beginning the correct sequence of math courses in middle school, but one district administrator expressed concern that some schools were simply fulfilling this requirement "on paper" with the intention of students changing graduation plans later on.

Finally, a small rural district expressed a particular concern about transfer students and course sequencing. The district noted that they could not be like universities that refused to accept transfer credits, but rather had to "make it work" even if a student had not followed the established course sequence laid out for an endorsement in that district. The challenges expressed by these districts should be examined by stakeholders to determine if solutions can be found.

5.2.3 Summary

Some districts have faced challenges related to the curriculum requirements of HB 5. Three districts, two rural and one suburban, reported frustrations coordinating the requirements of the TEKS with the requirements of endorsements. Nine districts, representing a mix of rural, suburban, and urban, said they faced challenges related to the strict sequencing of courses required by endorsements. One specific concern centered around students who might be at risk of not completing an endorsement or even dropping out because they fail or are not able to take courses in the correct sequence. This challenge may be best addressed by counselors, who should monitor closely students who are at risk of being in such a situation.

5.3 Counseling Challenges: Time, Training & Communication

At the school level, counselors are tasked with the majority of day-to-day activities stemming from district implementation decisions about HB 5. They face multiple, changing demands on their limited time. They are often not specifically trained in career counseling, which is an important element of helping students choose endorsements. There is an increased need for middle and high school counselors to work together, since students must be prepared to choose an endorsement before entry into 9th grade, but the two groups of counselors currently operate in largely separate silos in some districts. Finally, counselors are responsible for communicating with parents about HB 5, but face barriers to reaching all of them effectively. Figure 9, below, illustrates the challenges that counselors face in performing their duties.

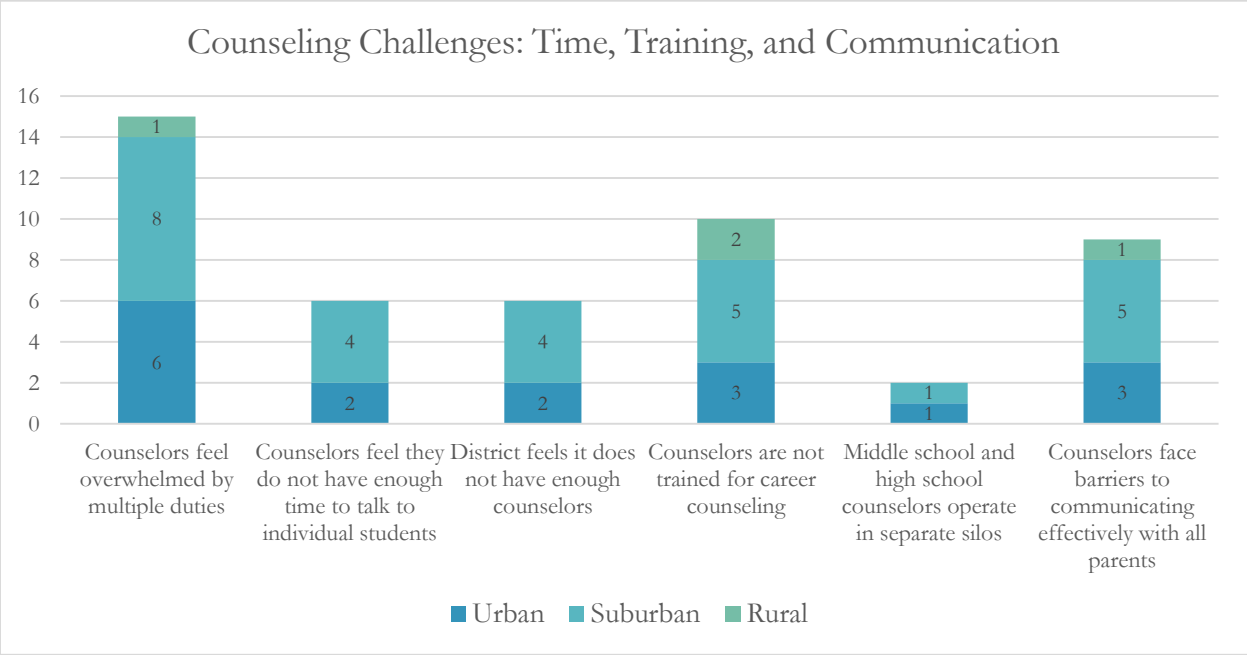

Figure 9: Counseling Challenges Faced by Districts

Counselors have many duties, some of which, such as counseling students in their choice of endorsements, are a direct result of HB 5. Counselors in many districts feel frustrated by their lack of time to effectively serve a large number of students, and some worry that vulnerable students will fall through the cracks.

For some time, the role of school counselors has been evolving. When many people think of counselors, they think of the guidance counselor role that they now play: preparing schedules and working on college admission pieces with upperclassmen. Counselors of old were more focused on student mental health and also did some additional tasks around the school. While the discussion around counselor roles is not new, the advent of HB 5 has tended to muddy the waters further. Today's public school counselors are more likely to adopt the role of "academic advisor meets test administrator, with a splash of lunchroom and bus duty mixed in." They rarely have time to "just counsel" their students.

Discussions with counselors highlight the diversity of their roles in their schools, and while some have seen their load lightened by the removal of additional duties like testing and after school pick up, the most commonly echoed theme in this study is that counselors are overworked and stressed out. Six of the districts surveyed mentioned challenges regarding the numerous duties their counselors must perform in addition to aiding students with course selection. One district gave a snapshot of the duties required of their four counselors at a large suburban high school: "[counselors] effectively have over 750 students each, over 5 different grades, and still have to handle upperclassmen schedules and college admission issues while trying to get 8th graders and [their] freshman and sophomores into the right sequence, while [counselors] still have to fulfil their administrative duties to do lunch duty, ARD (Admission, Review, and Dismissal committees), 504 (a federal statute that requires disability accommodations) meetings, and test administration."

This district's counselors were particularly frustrated with the new policy, stating they were effectively just academic advisors who rarely got to counsel their students. Where in the past they would have regularly

checked on their failing or frequently absent students, they now have no time in which to check on those students. However, another district stated that this bill is really the reason they are employed in school counseling: to help guide students into the careers they might like down the road.

The variations in the role of counselors between schools is wide ranging, and demonstrates the state's localized approach to education by allowing different districts to allocate counselors' time in varying ways. In many ways, this bill has required a philosophical shift for counselors who have been taught, coached, and instructed over the last 10 years that every student must go to college and that college readiness was the school's first priority.

Two districts specifically talked about the challenge their counselors had in adapting to this new mindset, which is an ongoing issue. As a result, their counselors were having a difficult time adjusting to career preparation in addition to college preparation, which may pose problems for some of their more career focused students. Several more schools expressed concern with "forcing" (in their words) their middle school students to choose a career path that would have serious repercussions in 5-8 years, and their stress and anxiety about guiding them down the wrong path.

The limited amount of time counselors were able to provide to individual students, as well as the number of counselors available, is one of the most commonly echoed themes in this study. Twelve district participants expressed this issue as an extreme challenge. From understanding how to transition from the old graduation plan to the new, or just understanding how the new plan even works, counselors frequently used the word "stressed." One head of counseling said her counselors were in "crisis mode," another stated her staff were, "incredibly overwhelmed," and a third cited a "strained" workforce.

In one group discussion with high school counselors at a suburban high school, when asked to describe HB 5 in one word, they used the following descriptors: "overwhelmed, death, change of career, burdensome, and time consuming." The counselors are often asked to take on five different grade levels, working with their middle school counterparts to schedule 8th graders' four year plans. Most districts have taken the approach of meeting with every student at least once in 8th grade, but a handful do not do this, instead opting for small groups of two to three students per counselor at a time, or even large groups of 20 to 30 students in a computer lab with a counselor, creating their own schedules.

The short window in which counselors are to talk with students about their future plans leaves many districts concerned for their students in the future. One district was very concerned about students falling through the cracks. They mentioned children whose parents were not willing, or able, to help or guide their children into the right endorsement path. The district also shared concerns for students who might not have anyone to assist them and could feasibly get left behind, without a counselor to discuss career options with them or talk about what colleges expect. While this parental involvement problem is not a direct result of the bill, it does seem to have the potential to worsen an at-risk child's future potential for college if they opt out of an endorsement or fail to take college-required courses. That 11 schools would state they needed more staff to help in this regard certainly urges more discussion at the state and local level in terms of appropriations for counselors.

5.3.2 Counselors are Not Trained in Career Counseling

Some districts consider their counselors to be more of an academic advisor, while others place more of a focus on the mental health component. Neither of these traditional views includes a focus on counseling

students for future careers. Six districts brought up the 'disconnect' between counselors and career preparation as a major barrier to their implementation of HB 5 and its stated intent.

Career counseling implies that counselors will have experience with different career fields, the necessary requirements to succeed in that profession, and a realistic idea of the socio-economic implications of that field. They should also be aware of the types of industry available locally and the requirements for that field, as well as should have an understanding of state and national labor markets and where future needs may arise. Perhaps most importantly, a counselor should be aware of the tools and resources available locally to their students, including the district's internal course offerings and any outside partnerships available to students to gain future employment.

Four of the districts surveyed discussed the major shortcomings that their counselors face in regard to career counseling. Two districts discussed this issue in terms of life experience. Their counselors were trained as educators, and likely spent a few years teaching, so their only career experience is in the world of teaching. This leaves them at a disadvantage to explain the merits of a career as a plumber or engineer. The district further went on to comment that counselors are under such strain already in terms of their workload that they do not have the time nor inclination to learn about other career fields. These districts stated that their middle school counselors have no knowledge of the course offerings, partnerships, or programs at their district high schools, so they are unable to truly counsel their students on a future four-year plan or help them choose between endorsements or consider future careers. They reported having little knowledge regarding the CTE courses available to students at the high schools, nor had they been educated on the CTE classes and certifications available, as well as how those could prepare a student to leave high school with an industry-recognized credential.

Districts also mentioned the difficulty in certifying their counselors with an additional career counseling certification. However, the districts who mentioned this challenge were concerned that their counselors did not have the appropriate amount of knowledge to counsel students on important life decisions, nor provide them any information on different paths they might take at the high school level to achieve their career aspirations.

Counselors must have a master's degree in a relevant field and numerous professional development hours. Counselors who are already hamstrung by their workload likely do not have the time to obtain an additional certification in career counseling that is not required by the state. This requirement would be in addition their already statutorily required continuing education hours. One head of counseling mentioned that HB 18 (84R) was intended to help with this challenge, but that thus far they have not received any substantial information or updates on how this legislation will help their counselors with career counseling.

5.3.3 Middle School and High School Counselors Operate in Separate Silos

Middle school counselors play various roles in preparing their 8th grade students for high school. In some districts, the middle school counselors are responsible for meeting with each student and helping them formulate their four-year plan. In other districts, high school counselors take on this responsibility. There are inherent flaws in both of these approaches, and five districts brought this specific issue up as a challenge for their districts.

While some schools made a point of having their counselors sit down and meet with students one on one to design their four-year plan, others achieved this idea by having groups of students meet in the computer lab

and selecting their courses. In some cases, students had been given several opportunities to tour the high schools and visit CTE classes, while other students were given handouts and instructed to discuss their plans with their parents.

Various districts had different outreach techniques, but the recurring theme was that there was little overlap or cross-purposing of counselors at the middle and high school levels. As a result, students might not have all the information needed to make a fully informed choice. This issue was also discussed by CTE directors who were concerned that while middle school counselors had personal relationships with the students that engendered a degree of trust, they lacked the experience necessary to talk knowledgeably about high school CTE courses. Meanwhile, high school counselors—who did have this information—did not have a close enough relationship with the 8th graders to be able to make an impact on their decisions.

5.3.4 Counselors Face Barriers to Communicating Effectively with All Parents

Districts reported two types of communication challenge with parents. One challenge was initial communication HB 5 when it first became law. Another ongoing challenge is finding effective ways to reach all parents with necessary communications about student graduation plans. HB 5 requires a parent signature on the initial graduation plan when a student chooses an endorsement and on any changes to the graduation plan thereafter. All districts in the sample reported that this communication is part of counselors' responsibilities, with varying levels of involvement from school and district-level administrators.

Four districts reported early communication challenges related to parent concerns or confusion about HB 5. For one district in West Texas, the main problem was a language barrier. They reported that once they had translated the necessary materials into Spanish, parents were enthusiastic about the changes. Two large urban districts and one suburban district stated that parents initially had concerns about the legislation. One of these districts felt that they had not done a good job communicating the intent of the legislation to parents because they had focused all of their early efforts on compliance with legislative requirements. Another stated that, while parents in their district had a "hard time" at the outset, the responsibility for this lay with the parents and not the way their district had implemented HB 5. The third district faced specific concerns from parents about the impact of endorsements on college admissions.

Eight districts pointed to ongoing challenges counselors face in reaching all parents. Two large urban districts and two suburban districts mentioned demographic challenges, such as large proportions of students from low socioeconomic status families. In particular, they noted that these families face additional barriers to successful communication, such as a lack of transportation or flexible work schedule to attend meetings.

Three large urban districts and one small rural district expressed frustration that no method of communication will reach all parents. For example, not all parents open mail, and not all have social media accounts. They also felt that one-on-one communication was more effective than large assemblies. The small rural district specifically stated that they feel families "need more" than one PowerPoint presentation or one piece of paper in order to understand graduation requirements and help their students choose a pathway. In addition, two suburban districts and one urban district pointed to cost as a communication challenge, particularly when developing printed materials for parents.

Finally, three large districts—two urban and one suburban—expressed a sentiment that communication challenges are not specific to HB 5. They stated that it is impossible to reach all parents when trying to

communicate with them about anything, and there will always be parents who are more involved. They feel that these involved parents are the ones who are most informed about HB 5 because they take the initiative to learn about it. It is important for stakeholders to understand the communication issues that districts and parents face in the implementation and practice of this policy so that efforts may be made to improve upon the challenges.

5.3.5 Summary

Perhaps because counselors are integral to the implementation of HB 5, challenges related to the counseling role were reported by the majority of districts. Fifteen out of 21 districts said that counselors are overwhelmed by multiple duties and limited time. Six districts, all urban and suburban, specifically noted that they feel they do not have enough counselors. Ten districts, representing rural, suburban, and urban, said that counselors are not specifically trained for career counseling, which is problematic if one goal of HB 5 is to promote career readiness. Two large districts with multiple high schools expressed frustration with their current counseling structure, which has middle school and high school counselors operating in silos and creates a barrier to effective high school planning in the middle school years. Finally, nine districts, primarily urban and suburban, reported challenges communicating effectively about HB 5 to all parents.

These challenges can be addressed by several different groups of stakeholders. At the state level, additional funds could be made available to districts to hire more counselors. At the district level, administrators and counseling and guidance specialists should provide additional career counseling training and collect data about the most effective means of communication with parents in their district. Administrators can also consider changing their counseling structure to allow counselors to work with both middle and high school students, which will be further discussed as a promising practice.

5.4 Personnel Challenges: CTE Teachers & the Specter of Staffing Shortages

Districts face current and future staffing shortages related to implementing HB 5. In particular, it is difficult to attract, certify, and retain qualified CTE teachers. These problems will be exacerbated as more student cohorts enter the endorsement program, and districts will have to choose whether to expand teaching staff or reduce course offerings. The first option may be prohibitively expensive, while the second may have negative impacts on students by limiting their course options.

Key Findings: Districts Struggle to Recruit CTE Teachers and Face Future Staffing Shortages

- Seven districts, primarily rural and suburban, reported that they find it difficult to recruit Career and Technical Education teachers.
- Eight districts, also primarily rural and suburban, fear future staffing shortages for courses in popular endorsements, particularly in CTE areas.

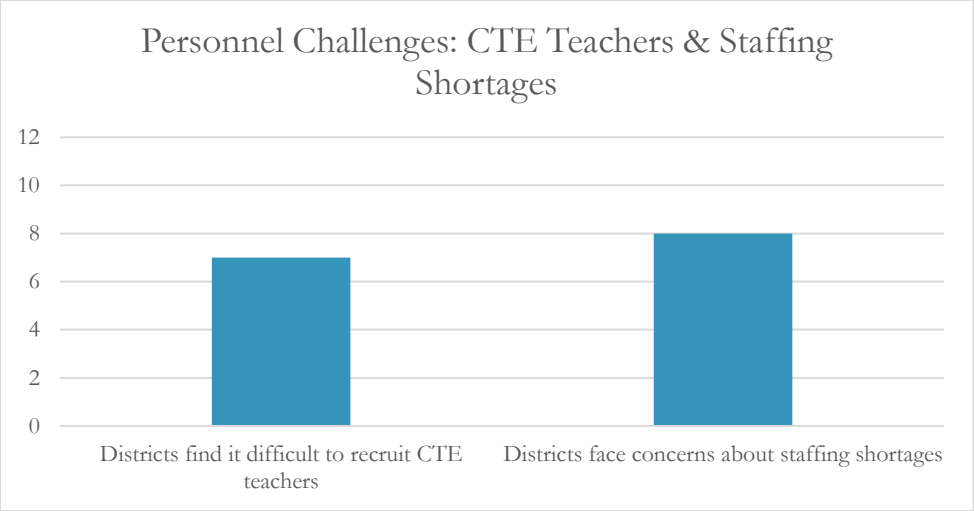

Figure 10: Personnel Challenges Faced by Districts

5.4.1 Recruiting CTE Teachers: An Onerous Process

It is challenging for districts to find qualified CTE teachers. Teacher salaries cannot compete with industry, many teachers who come from industry do not have adequate classroom training and experience, and it is costly and time-consuming for CTE teachers to become certified.

A common theme heard from five of the surveyed districts was how difficult it is to recruit CTE teachers with industry experience. One district stated that "it takes a very special individual" to leave an industry where they are likely making at least twice the salary to come teach and take a pay cut. The same statement was echoed almost word for word from another district. While there are CTE teachers joining the ranks, there are difficulties finding a person to come in and teach, and that problem is compounded in smaller rural areas.

A suburban district painted this picture: if they find an industry professional who decides they would like to come teach students, they must first get certified and then are put into a classroom with very little preparation for the problems that classroom teachers face in the state today. These teachers find themselves only truly teaching their students 50% of the time. The remaining time they are left trying to keep control of their classroom, ensure a safe learning environment, and counsel their students, whether it be a personal matter or class related. One interviewee stated they have a 50/50 chance of that person returning for another school year, when they can go back to their career field and make more money, with less stress and work.

Echoing that problem, three districts mentioned the challenges they face in getting those individuals certified to teach CTE classes in their schools once they find them. It is burdensome for districts to go through the CTE certification process. An interviewee discussed the financial burden placed on the district to pay for someone to get certified, and also shared that classroom teachers who want to get an alternative certification face a similar issue in paying for and attending instruction not in their field of study.

5.4.2 Staffing Shortages Likely to Grow

Eleven districts reported concerns with how they will staff their classes in the future, as they bring more students into endorsement tracks. They are already experiencing issues with how to design their course

sequences and ensure adequate staffing. These districts see this issue becoming a greater challenge as they add additional grade levels. They stated that they will either have to add additional staff for classes or reduce their course offerings. While CTE courses are weighted—receiving additional funding—that does not cover the cost of required equipment or personnel. One district cited their one welding teacher as an example. The individual can make three times the pay as a practicing welder, but chose to teach. They cannot find an additional welding teacher, so they are not able to provide more classes to their students who want to pursue this pathway.

Another district explained their process for capping classes. When they reach a point where they cannot accommodate all the students who want into a high demand class or cluster, they do an aptitude and skills test to see which students should get in. Another district shared how they work around that problem by having two to three students work at one computer together in a high demand class so they do not lose the opportunity to take the class in the necessary sequence. This poses its own problems, as students may not get the full course experience if the class is overcrowded. These issues are important for stakeholders to review as they consider possible solutions to district staffing issues.

5.4.3 Summary

Districts have faced increasing staffing challenges as a result of HB 5, particularly with CTE teachers. Seven out of 21 districts reported that they have difficulty recruiting CTE teachers, and eight districts said they fear future staffing shortages for courses in popular endorsements, particularly in CTE subject areas. These challenges seem especially relevant to rural districts; 4 out of 5 of the rural districts in the sample reported one of these concerns. At the state level, legislative policymakers could address these challenges by improving the CTE funding formula weight to enable districts to offer more attractive salaries to CTE teachers. The TEA could also make the CTE certification process less onerous to help districts attract qualified personnel. At the district level, administrators should closely monitor course enrollments so they can prioritize staffing for popular choices as more students fall under the HB 5 policy. Finally, industry partners could offer grants or incentives to make CTE teacher positions more attractive to qualified industry personnel.

6. COMMUNITY PARTNERSHIP CHALLENGES

6.1 Challenges with Industry Partnerships: Varied and Unique Across Size and Location

While almost all districts have an industry partnership of one form or another, many districts have experienced challenges implementing these partnerships. This, in turn, makes it difficult for schools to improve students' career readiness—a cornerstone of HB 5's stated intent. These challenges vary by district size and location. Rural schools struggle to establish partnerships because they lack available nearby industry. Districts with limited resources do not have enough time and money to devote personnel to developing partnerships, nor to build specialized facilities or purchase equipment to make partnership programs successful. Districts also face liability concerns for students under the age of 18; districts are wary of allowing students to travel to internships, and industry partners are reluctant to allow underage students to work in their businesses.

Key Findings: Industry Partnership Challenges in HB 5 Implementation

- Three of the five rural districts reported a lack of industry partners to work with.
- Two rural districts and one suburban district experienced challenges in allocating district staff to establish industry partnerships.
- Four districts, three rural and one suburban, reported concerns about not having specialized facilities and tools for CTE courses.
- Two rural districts and one urban district expressed that their industry partners had insurance liability concerns for their underage students.

6.1.1 Lack of Industry Causes Unique Challenges for Rural Schools

Two of the surveyed districts commented on the lack of local industry partnerships available to their students. Small, rural districts in Texas are typically distant from major urban areas and are without access to many of the amenities found in suburban and urban areas. These districts are small, both in school population and facilities, compared to their larger peers and face distinctly different challenges.

First, rural districts often face a noticeable lack of industry in their area. There may only be one hospital or healthcare employer in their county or region; one large ranch that employs the majority of their students' parents; or very few employers in general within their job markets. They may also be geographically distant from areas where their students could go for internships or jobs, or not have a local community or junior college close enough to be helpful to their students. While this problem is not a new one for rural districts, it makes it far more difficult for these districts to provide the industry partnership piece of this legislation.

One small rural district noted that the one industry they did have in the area was not an industry he wanted his students entering, as the jobs were not high paying. To counter the lack of industry in the area, he was forming partnerships with industry providers in areas 30-40 minutes away so his students could gain hands on experience in an industry that could be high paying and lucrative in the future. This interviewee wore many hats as the superintendent of a small district, which leads to another challenge that was cited by several districts, in various size categories: a lack of staff to form partnerships with industry.

6.1.2 Lack of District Staff to Pursue Partnerships: Disparate Results Based on Available Personnel

Every district approaches business partnerships slightly differently, but very few have a specific person on their staff whose job it is to go and meet with business and industry partners, local chambers of commerce, and other community organizations to build partnerships. When asked if there are any barriers to partnering, the overwhelming response from interviewees was that districts faced two main barriers: a lack of time and money at the administrative level.

Six school districts pointed to this as a major challenge for their district. They ranged from areas of the state with an abundance of industry to places where there was only one or two established industries. Both types of schools agreed that without a full-time staff member who could act as a liaison with outside partners, they had very little interaction with the industry in their area. In fact, one district talked about a common experience he had when reaching out to local business and industry professionals—many of the business owners expressed their anger and frustration that Texas public school students were not being educated to take jobs in their industry. The interviewee would quickly explain to them the intent of the new legislation is to counteract that problem and that his district is trying to give their students practical skills, but needed their help to do so.

Business and industry leaders may not know about the legislation, and also may not have the ability to delegate staff to work on partnerships due to fiscal or personnel restraints. From large to small districts, this lack of a designated person to establish connections remains a significant challenge to the effectiveness of this legislation. For districts who are struggling with their bottom line, the choice to add a person who is not involved in the day to day education of students is likely not something they can pursue. Likewise, a district without any notable industry nearby has little opportunity to achieve the stated intent of the legislation. Both these challenges merit further discussion.

6.1.3 Lack of Specialized Facilities and CTE Course Necessities: Creating a Potential for Equity in the Future

One district mentioned the need for specialized facilities to accommodate industry partnerships. This was echoed by other districts in regard to the special tools or programs that some CTE classes need, to fulfill certificate requirements. The district that mentioned this challenge specifically noted they had a willing industry partner, but did not have a space in which they could house the class, nor the needed inputs with which to teach students. One district expressed issues with the cost to maintain some CTE tools and programs, in order to stay current with industry best practices.

Another district discussed the lack of funding for the overhead that comes with the maintenance and purchase of the necessary tools. The funding for these requirements typically comes from the school, who can then establish a partnership with industry. Other than one promising practice discussed later, this study did not find evidence of outside partners offering to help financially with CTE requirements. Industry partners are first and foremost concerned with their bottom line profits, and may not be able to assist their local districts in paying the bills for classroom equipment or specialized space. School districts are left to decide how to fund these programs.

6.1.4 Insurance and Liability Issues for Students under 18: Preventing Future Partnerships

Three districts mentioned partnership challenges that revolved around liability issues for their students. In one case, the industry partner was concerned with their liability, and in the other, the district had concerns with their liability. The district was also concerned that allowing students to drive back and forth to

internships that were remotely located would be a significant liability problem. The industry partner was concerned that having students under the age of 18 at their job site could pose a liability to them. These challenges with industry partnership should be addressed by stakeholders to better achieve the stated intent of career readiness and allow students to experience career options while in high school.

6.1.5 Summary

Districts, particularly rural ones, face challenges to establishing successful industry partnerships. Three rural districts said they lack available industry to partner with. Three districts, two of them rural, reported that they do not have available staff to pursue new partnerships. Four districts, three of them rural, said that a lack of specialized facilities and equipment for CTE courses raised a barrier to partnerships. Finally, three districts, two of them rural, noted insurance and liability concerns for underage students that prevented successful partnerships.

Industry partners have a role in addressing these challenges. They should not focus only on urban and suburban districts, but reach out to districts in their surrounding rural areas to establish partnerships. Industry partners could also loan staff time or provide a grant for districts to hire a dedicated staff member to manage partnerships. Finally, they could loan or fund the purchase of the equipment and facilities districts need to implement CTE courses that align with industry partnerships to make these feasible.

6.2 Vertical Integration Challenges: Connecting to the Higher Education Pipeline

College readiness is a goal of HB 5, and some districts are concerned about how certain aspects of implementation align with the expectations of institutions of higher education. Some districts are concerned about the implications of students specializing before college through endorsements, and how this will affect their college experience. Others worry that institutions of higher education do not understand or agree with the intent of endorsements, and that certain endorsements will leave students unprepared for, or at risk for, not being accepted into college. Small, rural districts may not have the opportunity to work closely with institutions of higher education to address these concerns because they are geographically isolated.

Key Findings: Vertical Integration Challenges with Higher Education in HB 5 Implementation

- Three districts, one urban and two suburban, shared concerns regarding the possible repercussions of early specialization in high school.
- Five districts—one rural, one urban, and three suburban—expressed worries with the alignment of endorsements and higher education expectations.
- Two small rural districts felt geographically isolated from higher education institutions.

6.2.1 Districts are Concerned about Repercussions of Early Specialization

One large Central Texas suburban district feels that it is a mistake to push students to specialize in high school, and that it will have real monetary costs for these students later if they change majors in college because they did not do enough exploration early on. Another nearby suburban district echoed this concern, saying that high school is typically when students try several things before settling down in college, and they worry this new system will have students "bouncing around" between college majors.

6.2.2 Districts Worry About Alignment of Endorsements with Higher Education Expectations

The Career and Technical Education (CTE) director in a large suburban district in Central Texas expressed concerns particular to CTE, saying that the CTE pipeline works well in high school, but breaks down as it leads to higher education. The source pointed to the duplication of course content between high school and junior college courses, or when information and techniques do not align between high school and college. For example, this district teaches an engineering computer program that they feel is more up-to-date than one taught at the local university.

This district also had early problems with colleges not understanding the new graduation plans and how they are reflected on transcripts. A large East Texas suburban district faced a challenge early on in implementation with end-of-course exam results and transcripts not being ready for juniors and seniors who were preparing to graduate.

The issue of transcripts was also brought up by a Gulf region suburban district, who feels that GPA weighting for honors and AP courses gives students who take the traditional 4x4 program—four years each of English, math, science, and social studies—a potentially unfair advantage over students on the new Foundation plan who must graduate with a Distinguished Level of Achievement in order to be eligible for automatic admission to Texas public universities under the State's top 10% rule. However, since the Distinguished Level of Achievement requires four years of courses in each of these subjects, this concern may reflect a misperception on the part of the district.

This brings up a perception among several districts that colleges will not look favorably on some endorsements, or the Foundation High School Plan in general. A large Central Texas suburban district feels it must counsel its students and parents that some endorsements are not "college friendly" and that it is necessary for students to take four years of social studies, as well as Algebra 2, in order to be college ready. Another suburban district in the same region does not feel that any one endorsement is better than another for college admissions, but have fielded concerns from parents who question which endorsement is best for admissions. A Central Texas suburban district feels that the higher education community is not talking to the K-12 public education community about Algebra 2 requirements, and that the two do not see eye to eye.

An administrator at a fourth large suburban district, this one in the Gulf region, sees a persistent thread of misinformation in the media and the general public that HB 5 constituted a "dumbing down" of education. She feels that public universities are not receptive to the new graduation plan and are not interested in students who do not have the traditional 4x4 graduation plan with two years of foreign language. This administrator thinks the Texas Higher Education Coordinating Board (THECB) should be doing more to force universities to treat students graduating under the Foundation Plan equally with 4x4 students. Another large urban district chose to retain Algebra 2 as a graduation requirement because of organized public pressure from local advocacy groups, fueled by media coverage of HB 5. These troubles are not unique to large districts.

6.2.3 Small, Rural Districts Struggle to Establish Partnerships with Geographically Distant Institutions of Higher Education

A small rural district in South Texas expressed frustration that some of their technical courses were not being accepted for college credit at institutions of higher education, even though they felt they had

completed all the requirements regarding teacher training, lab hours, etc. The district feels that they would have an easier time developing partnerships if it were not so geographically remote from colleges and universities.

A small rural district in South Texas reported a great deal of confusion and difficulty developing college readiness courses in math and English in partnership with an institution of higher education. In addition to feeling that the requirements were "complex and convoluted," the district feels that it is too geographically isolated from colleges to develop a solid working relationship with one, which has hampered their development of the required courses. They also cited distance as an issue when developing industry partnerships. They also faced issues related to their small size when choosing what pathways to offer. They feel pressure to offer as many pathways as possible because they do not want students' options to be limited. However, there are high costs associated with offering courses that not many students enroll in, particularly the cost of teachers.

6.2.4 Summary

Districts face various challenges to successfully align with higher education. Three districts reported concerns that the early specialization imposed on students by HB 5 will have negative repercussions for them in higher education. Five districts said they are concerned that endorsements do not align with higher education expectations, and worry that this will impact students' chances of college acceptance and success. Finally, two small rural districts reported challenges establishing partnerships with institutions of higher education because of their geographical remoteness.

Districts can address the last challenge (geographical remoteness) by pursuing partnerships with institutions of higher education to offer dual-credit online courses. Higher education partners can alleviate concerns about alignment by working with districts to improve the match between K-12 and higher education standards. District concerns about the long-term impact of HB 5 on students' success in higher education should be kept in mind and closely monitored as the policy matures.

7. PROMISING PRACTICES

The following section provides details of several 'promising practices' described by individual district administrators during the course of this study. Since no high school class has graduated, having completed the current HB 5 model, no conclusive outcome data exists. Thus, these exemplars have not been formally evaluated, but through their description, do provide examples of promising approaches to some of the most frequently mentioned challenges expressed across districts.

They are also noteworthy in their innovative nature, representing the crafting of solutions beyond the traditional bounds of operations. They also represent low-cost, scalable and sustainable options that are feasible for a range of district types—from small, rural, and low income areas to large, urban districts. Examples include solutions through administrative, counseling, and partnership mechanisms. Of note, promising practices which have proven helpful to districts as they continue to implement this policy include:

- the use of cross-functional teams to ensure all programs and divisions are communicating regularly
- the use of post-graduate surveys to better understand what students are doing upon graduation
- innovative counseling structures to better serve students; and
- dedicated staff to build partnerships with stakeholders and industry actors.

7.1 Administration

7.1.1 Cross-functional Teams

When HB 5 became law, one district's first action was to form a "cross-functional team" to oversee its implementation. This team includes district-level administrators from a variety of departments, including Counseling & Guidance, Career & Technical Education (CTE), Curriculum, Research & Development, and Federal & State Compliance. The district felt that, while many other districts were allowing their CTE department to take the lead on implementation, the effort needed to involve everyone in the district who played a role in educating, counseling, and preparing students for graduation. Worth noting, the Assistant Superintendent for Counseling & Guidance expressed pride that the district's implementation effort has been headed by highly respected student support personnel, and was not just "dumped on" someone.

In the course of the interview, the staff highlighted several advantages they see in using this cross-functional team. First, having the implementation team situated in the district's central administration helps the district plan for personnel turnover. For example, this Assistant Superintendent was not hired until the implementation effort had been underway for a year, and thus "inherited" the effort from his predecessors, but indicated that the transition was smooth. Second, having all relevant departments in regular communication has helped the district make implementation processes part of the system, with departments gradually becoming more autonomous. Since the beginning of HB 5 implementation, the cross-functional team has moved from monthly to quarterly meetings, which the Assistant Superintendent feels demonstrates the team's progress at embedding practices in the system. This structure encouraged communication amongst all parties who play important roles in the lives of students and ensured that each office and program was supported by the central administration and front line issues were made apparent to the leaders who could suggest solutions. This practice was successful because it allowed everyone to be on the same page and focused on the same issues and challenges experienced in the implementation of the policy.

7.1.2 Post-graduation Surveys

One of the difficulties in assessing the effects of changes to the high school curriculum and graduation requirements is that many schools lack data at the local level on student outcomes following graduation. However, some districts have put systems into place that allow them to understand where their students are going after high school and what sorts of careers they are pursuing, giving them much better insight into how well their schools are preparing their graduates for adulthood. A small rural school in North Texas has instituted a system whereby they conduct a survey of each cohort of recent graduates every 18 months for five years following graduation. The survey asks these former students to describe what they are doing, whether and where they are employed, or if pursuing post-secondary education, or both. The district has seen a high response rate to these surveys, and it has helped them to adjust their programs in accordance with feedback from their graduates. With the advent of HB 5, the district sees this pre-existing survey system as an invaluable asset, as it will allow them to understand how the new curriculum is affecting their students in college and the workforce.

Similarly, a large suburban school district in the Gulf region implemented a post-graduation survey system prior to HB 5 passage, which ties into their 5 year plan (called T-2-4) to double the number of students who go on to graduate with a technical certification, 2 year degree, or 4 year degree. The survey is designed to understand how many of their graduates are going on to these programs and how many of them are actually graduating. This outcome data is vital in helping the district understand whether or not it is doing a good job in preparing students for life after graduation.

In light of the wave of students embarking upon a new high school curriculum as a result of HB 5, districts across the state should seek to implement similar survey programs in order to begin assessing their effectiveness in accomplishing their assigned mission of ensuring that all Texas high school students graduate ready for college or a career.

7.2 Counseling

7.2.1 Innovative Counseling Structures

Several districts have adopted innovative methods for structuring school counseling systems. A small rural district in North Texas maintains a guidance counselor who works with both 8th- and 9th- graders. This counselor spends half of her week at the Middle School and the remainder of the week at the High School. This allows her to shepherd these students through the transition to high school and respond quickly to their needs. Given the significant changes that accompany students' transition to high school and the fact that several districts noted that the highest volume of requests from students to alter their individual graduation plans occurred between 8th and 9th grades, the practice of maintaining continuity in guidance counselors during these years shows promise for helping students more effectively embark upon their high school careers.

Similarly, a large urban district in North Texas has adopted the practice of having their guidance counselors move with each student cohort through high school. Rather than apportioning the entire student body alphabetically or through some other arbitrary criteria, each counselor works with a single cohort from 9th through 12 grade. Once their assigned cohort graduates, that counselor then rotates back and picks up the incoming freshman class. By working with the same group of students through all four years of high school, these counselors are able to forge the close relationships necessary to become effective mentors to their

students. Moreover, the continuity produced by such a system ensures that fewer students fall through the cracks, as they now have a single individual who is responsible for guiding them through their high school career.

Given the success that these districts have experienced with these counseling structures, districts should examine ways to implement a combination of the two systems. An ideal system would be one wherein students are assigned a counselor in 7th or 8th grade, who moves with that student cohort through graduation. This would benefit students by creating a source of continuity throughout their middle and high school education, helping them transition to high school, and improving the likelihood that they will successfully complete an endorsement track and graduate. This system would also benefit counselors by ensuring that they avoid becoming too narrowly focused on a small portion of a student's career.

7.2.2 Resources for Parents

Parents are important decision-makers in their children's educational pathways and course electives during secondary school. They frequently take part in the discussion of post-secondary education and career choices for their students. Tools made available by the districts to help parents gauge the potential advantages of endorsements, various levels of education, and certifications for their student can have a large impact. These resources include employment opportunities for students and information about the current labor market needs and possible earnings.

Parents can access free career and post-secondary information available through public agency websites. Several districts mentioned the advantage of the Texas Workforce Commission's website titled Texas CARES (Career Alternative Resource Evaluation System) available at http://www.texascaresonline.com (Texas Workforce Commission N.d.). Texas CARES provides information on employment projections, work options, necessary skills, and general workforce occupations. What is unique about Texas CARES is that it is an interactive website where both parents and students can explore and learn about educational requirements and certifications that students will need to be competitive in and reach their desired career goals (see also http://www.lmci.state.tx.us/parents/parents.asp). The learning management system provided by Texas CARES lists the current HB 5 graduation plans as well.

Districts can consider ways in which they can involve parents, or parent liaisons, in discussions with the business community, to provide greater clarity among parents regarding local business needs. A district spoke of their experience and outcomes from getting parents directly involved, in what was referred to as "Community Discussions and Conversations" with employers, business leaders, and teachers, and other school administrators. These comprehensive community discussions came about after the district discovered that some of their most prized certifications offered at the high school held little value in the eyes of local employers.

One example given was the Occupational Safety and Health Administration (OSHA) certification. For much time, the district had promoted the OSHA certification as something that was greatly valued by industry. By taking the time to earn the certification in high school, it was believed that students would gain an advantage for local employment. However, after reaching out to local industries, the districts were informed that even if a high school graduate obtained this certification through the school, they would still be required to retake the training, due to the complexities of the local jobs and strict requirements for adherence to OSHA standards. Thus, the valuable tool that this district provided to parents was the ability

to participate in these discussions and learn directly from local industry leaders about the benefits of each certification and CTE course.

For example, the ability to effectively use and operate Microsoft Office was one of the main "skills" requested by local industries. Industry leaders were able to point out to the district and parents that even though many of the desired skills were "hands-on", each job still requires a computer component for reports and data. Having this information not only helped the school district tailor their certification choices, but also gave their parents a better understanding of how best to support their student's choices when making decisions about which courses to take, and which certifications to obtain.

Districts can combine resources with local universities/colleges to create informational visuals that can guide parents who are not familiar with opportunities provided by obtaining a higher education. This idea was presented by a district that spoke of communication and recruitment materials that were created, in coordination with local two and four year colleges, to help parents understand the advantages or disadvantages their students can face at each "stopping point"—each career or educational stage or milestone in a student's life. For example, the pamphlet shows what types of jobs or salary a student can expect to earn if the student fails to complete high school or enters the workforce directly out of high school, with no other qualifications. The same information is displayed for a High School Diploma + certifications, or High School Diploma + two-year associate's degree, High School Diploma + bachelor's degree, and so forth. This particular district felt that this approach speaks directly to the parents and students because they can see what each step will lead to and are able to visualize the benefits of remaining in school. Families can thus make decisions based on what their end goals are. These materials are used not only at the local community colleges, but at the school district as well.

Another district spoke of the importance of holding frequent meetings with parents and students regarding the endorsements and CTE courses. This particular district stated the following in regards to communicating with parents the potential outcomes of endorsements and advanced educational opportunities:

> "We realized that one meeting is not sufficient to cover the information, as it is complex for these families. We also think it is better when teachers (not just counselors) have a good understanding of guided pathways, because they can also be ambassadors and have conversations with the parents. We found that teachers can also speak intelligently about it [endorsements], and for us it has been best not to have 'one-stop-shopping' Our families need more than one PowerPoint or one piece of paper."

If parents are not able to get the information they need from the local school administration, they can seek further help from community resources, such as local career centers which are open to the public. The Texas Workforce Commission (as explained earlier) and the Bureau of Labor Statistics (bls.gov) likewise have updated information on current and future employment trends and forecasts, wages by occupation and subject areas, and parent/student resources for career information.

7.3 Partnerships

7.3.1 Partnering with the Chamber of Commerce

One interview with a large suburban school district provided insight on a promising practice regarding how to establish partnerships in the community. The district revealed that they offer all five endorsements at their five high schools, with numerous pathways at each school. To ensure their "academies" are producing industry appropriate skills, they have advisory boards for the vast majority of their pathways, which help with the curriculum and sequencing of courses. The industry advisory board members are professionals in their chosen industry, who provide relevant and timely advice, information, and expertise to the cluster with which they serve.

This district has experienced great success with their CTE programs, with their students earning 3,122 industry certifications in 2014. One explanation for their success is the district's clear commitment to employ specific personnel to develop career preparation and education. This is evidenced by the employment of several staff members in their Community Partnerships and CTE offices.

The staff also works in close partnership with their local Chamber of Commerce, who were also interviewed. The chamber has a dedicated staff person who is responsible for community enhancement. In this role, the staff member interfaces with various aspects of the community and looks for ways to further improve the community the chamber serves. Interviewees explained that this chamber realizes the feedback loop that education plays in the future economic and social success of the community. The chamber has demonstrated their commitment to working closely with the school district to provide industry resources by informing the district and students of the hard and soft skills their chamber members need (solicited by a member of the chamber staff), identifying workforce trends for the area, and finding innovative programs for students and teachers.

While the district uses Texas Workforce Commission data for research on future trends, they also rely heavily on their partnership with the chamber, who have a robust understanding of the local workforce needs in their community. Both the district and the chamber share a common goal of graduating students who are both college and career ready, and have a rich understanding of the types of industries and careers that are available to them in their community. Both actors maintain optimism that the students will return to their community post-college. Of note, they came to this goal independently and organically, without the other, and then realized they were moving in the same direction. Their goal of preventing this "local brain drain" effect is important to their industry partners and creates a shared vision and goal for the district and chamber.

They also partner to educate their students on the high paying careers that are available to them locally, which do not require a college degree. The chamber has embarked on a campaign to destigmatize these career fields so they can work with the district to disseminate this information to students and parents alike. For example, they hope to show that a career as a plumber is a lucrative career choice, with excellent longevity for the future. The commitment to work closely together to identify needs and educate students is not novel, per se. However, the fact that the chamber has chosen to invest in the appropriate staff to pursue partnerships is promising.

The large suburban district has four full time administrative staff to assist their CTE teachers and counselors to better understand the promise of HB 5, while also building lasting bridges into their community. Investing

in these staff roles was a choice made by the district to provide further support for their teachers and students. In interviews with the chamber staff, they indicated the relevance and importance of investing in their local school district, both to ensure that future companies would want to relocate their employees to a district with excellent schools, but also to produce a skilled workforce for the future. This partnership is successful because both entities see the value and need for the other.

7.3.2 Partnerships Take Priority

While interviewing administrators at another district, researchers were struck with how important industry partnerships are to successful implementation of HB 5 recommendations. One small rural district has an exemplary "Early College/STEM Academy" and is a P-20 Systemic Model for 21st Century School Transformation in Texas and the United States. Partnerships with institutions of higher education across the district are prevalent, with six different higher education entities involved in course development and delivery. Local and regional industry partnerships exist with four different providers and an additional partnership in the works.

When HB 5 was enacted, many of the legislative requirements were already in place in this district, and they had been working to redesign their model and method of education for over a decade. Most of the requirements and expectations for HB 5 were in place, and there was no need for an implementation strategy or new policy. As a result, the district was able to focus much of their time and energy on developing additional industry partnerships to the number of agreements that had already been finalized in association with their early college initiatives that were built before the passage of HB 5.

When considering which endorsements to offer district wide, the district made an interesting decision. They determined which endorsements would be available to students, based solely on the requirement of having an existing partnership with local and regional industries. The district has a number of partnerships with both higher education entities and private companies. These aid in developing apprenticeship opportunities that connect high school students to future career opportunities, while students simultaneously work to complete both high school and associate's degree requirements. Without this type of partnership to connect current students to industry opportunities, the district would not expand endorsement offerings.

The interviewee felt that the benefits of industry partnerships were of the utmost importance, and the district did not wish to provide an endorsement unless they knew that they could provide students with a corresponding industry partnership to help students develop practical skills to develop in the field. In the future, districts could consider this model when thinking about expanding their offerings. This example demonstrates that having a dedicated partner to work with is important, to provide tangible expertise on endorsement offerings and the pathways that students can take. The shared goals that the district and industry partners have provides their students with well thought out, thorough, and in-depth courses, and should be a model for other districts to follow when considering the development of partnerships.

SECTION III: CONCLUSIONS & DIRECTIONS FOR FUTURE RESEARCH

By speaking directly with district leaders, this research provides an important new perspective to the policy dialogue on HB 5. By studying the experiences of front-line staff, an in-depth perspective of the major trends and challenges that Texas schools face as they work to implement the policy of HB 5 has emerged, as have several exemplars of promising approaches that might hold relevance across the state. This research fills an important gap in knowledge, as there will be no outcome data on this policy until at least July of 2018, when the first cohort class graduates. Thus, this exploratory research has captured a snapshot of district perceptions that are an important tool for policymakers and education stakeholders to understand how this policy is currently being deciphered and applied by district. These findings provide an opportunity for further research on adjustments or changes in advance of the 85th Legislative Session.

This research suggests that districts have many continuing challenges that should be addressed quickly by stakeholders, including the Texas Legislature, to ensure that HB 5 implementation continues to unfold in line with the original intent of the legislation. The following provides a summary of key findings stemming from the interview data, grouped by relevant stakeholders, followed by recommendations based on study findings. It is important to note that given the current budgetary constraints faced by the state government and local school districts, all recommendations were designed to be low-cost or revenue-neutral.

Key stakeholders include:

- legislative policymakers,
- the Texas Education Agency,
- school district administrators,
- curriculum specialists,
- counseling and guidance specialists,
- industry and chambers of commerce,
- the higher education community,
- parents and students.

State actors, which include legislative policymakers and the Texas Education Agency, can respond to district concerns about state guidance and regulations that affect HB 5 implementation. They can also learn from the challenges school districts have encountered and apply those lessons in future education reform legislation and implementation.

School district administrators and personnel can learn from the challenges encountered by the districts that participated in this study, and will likely see their own concerns reflected here. They can also look to promising implementation practices identified by some districts for guidance in meeting these challenges.

Community partners, which include industry and chambers of commerce, the higher education community, and parents, have an integral role to play in meeting the challenges faced by school districts in HB 5 implementation. Industry and higher education partners have specialized knowledge and resources they can bring to partnerships with school districts to help them meet implementation needs. Parents must be aware of the challenges districts face so they can be effective advocates for their students. They can also advocate for changes within their district to better address these challenges.

9. Key Findings & Recommendations for Stakeholders

9.1 Legislative Policymakers

Policymakers should be aware of districts' concerns as they consider future education reform legislation. A majority of districts expressed confusion about the legislative intent of HB 5 and a lack of specific guidance for implementation. Another concern centered on the relatively short implementation timeline, which some districts felt was not in alignment with the academic year, and therefore increased the difficulty of implementing the policy.

Relevant Research Findings	Recommendations
Districts are frustrated by short policy implementation timeline.	Allow additional time for implementation in future education legislation and align timeline with school calendar.
Districts feel they do not have enough counselors to serve all students.	Make additional funds available for districts to expand counseling program.
Districts struggle to recruit Career and Technical Education teachers.	Improve CTE funding weight to make more attractive salaries possible.
Districts are concerned that increased busing to meet student course needs may prove unsustainable.	Improve transportation funding allotment to cover cost of increased busing.
Districts perceive a lack of state guidance.	Be aware of concerns for future education legislation.

9.2 Texas Education Agency

Some of the challenges districts have faced in implementing HB 5 could be alleviated with more guidance from the state level. In particular, several districts expressed frustration at the perceived lack of a central resource to which they could direct their implementation questions. The TEA could fill this role. The study also highlights promising practices some districts are engaging in that could be replicated by other districts. The TEA is the appropriate actor to play a role in disseminating these practices.

Relevant Research Findings	Recommendations
Districts wish for a centralized resource at the state level.	Designate staff member or team as HB 5 resource and make point of contact clear to districts.
Districts are frustrated by the need to coordinate TEKS and endorsements.	Provide crosswalk between TEKS and endorsement course requirements to assist districts in course planning.
Districts face barriers to certifying Career and Technical Education teachers.	Make CTE teacher certification process easier to help districts attract qualified teachers.

9.3 School District Administrators

This report provides a lens into a sample of district experiences with HB 5 implementation. Other districts may find their own concerns reflected here, as well as some promising practices they can replicate.

Relevant Research Findings	Recommendations
Districts face administrative challenges around middle-to-high school transition.	Develop a district-wide student information management system that tracks student endorsement and graduation plan progress through middle and high school.
Large districts struggle to unify approach across all schools.	Form cross-functional team of personnel from all relevant departments to unify implementation strategy and communicate with schools.
Districts worry about future staffing shortages for popular endorsements.	Closely monitor course enrollments and prioritize popular choices.
Districts are concerned about repercussions on students of early specialization.	Closely monitor student outcome data as first cohorts graduate under HB 5.

9.4 Curriculum Specialists

The course sequencing requirements within endorsements have caused concern for some district administrators, who worry that students who fail courses or change endorsements during high school may fall behind or not graduate. Curriculum specialists should communicate clearly with counselors about these sequencing issues and work with them to identify students at risk of facing these challenges.

Relevant Research Findings	Recommendations
Districts worry about student challenges arising from strict sequencing of courses in endorsements.	Work with counselors for early identification of students at risk of failing a course or thinking of changing endorsements to minimize challenges.

9.5 Counseling and Guidance Specialists

Counselors are integral to carrying out the requirements of HB 5, but most districts report that counselors have limited time and multiple responsibilities. Many districts feel they do not have enough counselors. This study gives insight into the barriers counselors face and highlights several promising practices some districts are using to address these challenges.

Relevant Research Findings	Recommendations
Counselors face multiple responsibilities and limited time.	Supplement counseling personnel by hiring more counselors or recruiting volunteer mentors.
Counselors are not specifically trained in career counseling.	Offer additional counselor training.
Middle and high school counselors operate in silos.	Revise counseling structure to allow counselors to rotate with student cohorts, starting in middle school.

Counselors face barriers to communicating with all parents.	Collect data about how parents prefer to receive information and adjust strategies.

9.6 Industry and Chambers of Commerce

This study demonstrates that there are school districts who have developed successful and innovative partnerships with industry. Several promising practices offer a guide for others seeking to replicate these efforts. Equally important, the challenges highlighted by some districts can give industry leaders insight into the barriers districts face to successful collaborations. Some of these barriers may stem from a lack of understanding between industry and school districts, of each party's unique needs.

Relevant Research Findings	Recommendations
Rural districts lack available industry partners.	Reach out to districts in surrounding rural areas to offer opportunities to partner.
Districts face difficulties recruiting and certifying CTE teachers.	Provide grants or incentives to help districts recruit CTE teachers.
Districts without dedicated staff face challenges establishing partnerships.	Provide grants to hire staff or loan employee time to help schools develop partnerships.
Districts lack specialized facilities and equipment.	Loan space or equipment or provide grants to make new partnerships feasible.

9.7 Higher Education Community

The changes in graduation requirements introduced by HB 5 have created concerns for students, parents, and districts. Some of these concerns stem from a perceived mismatch between the expectations of institutions of higher education and the new graduation plans. Colleges and universities should be aware of these concerns, which may inform how they communicate their admissions standards in the language of the new endorsements.

Relevant Research Findings	Recommendations
Districts worry about alignment of endorsements with higher education expectations.	Work with districts to improve alignment of K-12 and higher education standards.
Small, rural districts struggle to establish partnerships with geographically distant institutions of higher education.	Work to establish partnerships with online institutions of higher education.

9.8 Parents and Students

This report will give parents and students a better understanding of HB 5 as a policy and the variety of ways in which districts have interpreted and implemented it. A better awareness of the challenges districts have

faced, particularly in the area of alignment with higher education expectations, will prepare parents and students to advocate for themselves as they select an endorsement and graduation plan. Knowledge of the promising practices some districts have engaged in may inspire parents and students to suggest changes within their own district.

Relevant Research Findings	Recommendations
Districts worry about alignment of endorsements with higher education expectations.	Talk to your student's counselor to verify that their endorsement, graduation plan, and course choices align with college admissions requirements.
Counselors face barriers to communicating effectively with all parents.	Be proactive in seeking information about your student's endorsement choices and graduation plan, beginning in the 8th grade.
Some districts are developing promising practices to provide resources to parents.	Advocate with your district to adopt promising communication practices and parent resources.

11. Questions & Directions for Future Research

While collecting field data, several questions were left unanswered as a result of there not being baseline data related to current implementation practices, nor a graduating class cohort to measure outcomes of this research. Thus, stakeholders will need further quantitative data on outcomes to best drive practices in the coming years, as cohorts graduate and workforce and college entry can be documented.

For now, questions of process continue to dominate the implementation landscape and are a direct result of concerns that were expressed throughout interviews with district administrators, on issues they continue to grapple with now, and expect to into the future, as more cohorts come under the new plan. Additional qualitative study of these processes could add further insight to the challenges and opportunities that currently exist for HB 5 implementation:

- Will counselors continue to be overwhelmed by their multiple duties, or will districts find ways to address their concerns?
- Will a lack of mandatory Algebra 2 in some districts hinder higher education admission for students?
- How will districts sustain popular pathways if they do not have the physical resources or teachers to offer them?
- How much switching of endorsements will occur for freshman and sophomores, and how will districts handle that in terms of infrastructure and class scheduling?
- Do resource shortages contribute to the tracking of students into certain endorsements, and how will resource shortages affect equity between districts?
- Do endorsements and certifications improve student outcomes after high school graduation?

Texas school districts maintain a sense of cautious optimism regarding this policy. While much remains to be seen regarding the long term effects of HB 5, at this time, Texas school districts are doing their best to comply with the policy and provide their students an education that will prepare them for college and/or a career. The supporting actors that work with districts in this endeavor, including business and industry partners and chambers of commerce, government partners, and other stakeholders, have an important, if not urgent, opportunity to support this initiative. It is hoped this report provides the necessary exploratory data to help these stakeholders continue to monitor and work with school districts to address the challenges discovered in this report.

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APPENDIX A: FINDINGS SUMMARY

Guided Pathways: The New Shape of Texas High School Education

Findings Summary	Total	Rural		Suburban		Urban	
Key Findings: The Hows and Whys of Guided Pathways Implementation							
Endorsement offerings based on what courses were already available	12	2	40%	8	80%	2	33%
Specific mention that career clusters/academies or pathways existed before HB 5	10	3	60%	5	50%	2	33%
Number of endorsements offered by district overall:							
1	1	1	20%		0%		0%
2	0		0%		0%		0%
3	1	1	20%		0%		0%
4	1	1	20%		0%		0%
5	17	2	40%	9	90%	6	100%
Not all pathways are offered at all schools	11	1	20%	5	50%	5	83%
District has at least one industry partnership	20	4	80%	10	100%	6	100%
District Perceptions of the State's Role in Guided Pathways Implementation							
Districts perceive a lack of state guidance	10	3	60%	3	30%	4	67%
Districts express wish for centralized resource at state level	5	1	20%	2	20%	2	33%
Districts express frustration with short implementation timeline	10	1	20%	4	40%	5	83%
District-Level Administrative Challenges in Guided Pathways Implementation							
Coordination Challenges: Consistency Within Districts							
Districts cite challenges around middle-to-high school transition	2	0	0%	1	10%	1	17%
Large districts struggle to unify implementation across schools	2	0	0%	0	0%	2	33%
Districts express concerns about busing and transportation	3	0	0%	2	20%	1	17%
Curriculum Challenges: Coordination and Sequencing							
Districts are frustrated by attempts to coordinate TEKS and endorsements	3	2	40%	1	10%	0	0%
Districts face challenges sequencing courses within endorsements	9	2	40%	5	50%	2	33%
Counseling Challenges: Time, Training, and Communication							
Counselors feel overwhelmed by multiple duties	15	1	20%	8	80%	6	100%
Counselors feel they do not have enough time to talk to individual students	6	0	0%	4	40%	2	33%
District feels it does not have enough counselors	6	0	0%	4	40%	2	33%
Counselors are not trained for career counseling	10	2	40%	5	50%	3	50%
Middle school and high school counselors operate in separate silos	2	0	0%	1	10%	1	17%
Counselors face barriers to communicating effectively with all parents	9	1	20%	5	50%	3	50%
Personnel Challenges: CTE Teachers and Staffing Shortages							
Districts find it difficult to recruit CTE teachers	7	3	60%	3	30%	1	17%
Districts face concerns about staffing shortages	8	3	60%	4	40%	1	17%
Community Partnership Challenges							
Industry Partnership Challenges							
Rural schools face a lack of industry to partner with	3	3	60%	0	0%	0	0%
District feels it lacks available staff to pursue industry partnerships	3	2	40%	1	10%	0	0%
District lacks specialized facilities and materials for CTE courses	4	3	60%	1	10%	0	0%
District faces insurance/liability concerns for underage students	3	2	40%	1	10%	0	0%
Vertical Integration Challenges: Higher Education							
Districts are concerned about repercussions of early specialization	3	0	0%	2	20%	1	17%
Districts worry about alignment of endorsements with higher education expectations	5	1	20%	3	30%	1	17%
Small, rural districts feel geographically isolated from higher ed institutions	2	2	40%	0	0%	0	0%

Total Urban	6
Total Suburban	10
Total Rural	5
Total School Districts	21

Statewide Breakdown of Student Population	
Rural	19%
Suburban	64%
Urban	17%

Texas Education Grantmakers Advocacy Consortium

A study commissioned by the Texas Education Grantmakers Advocacy Consortium and
The George Bush School of Government & Public Service
Texas A&M University
IRB REF #IRB2015-0861D

APPENDIX B: CONSENT FORM

IRB NUMBER: IRB2015-0861D
IRB APPROVAL DATE: 01/12/2016
IRB EXPIRATION DATE: 01/01/2017

The Bush School
OF GOVERNMENT & PUBLIC SERVICE
TEXAS A&M UNIVERSITY

Consent for Participation in Research

Study Title: "Implementing Guided Pathways: A Bush School of Government and Public Service Capstone Study of HB 5 (83rd Legislature)"

Introduction:
The purpose of this form is to provide you with information that may affect your decision as to whether or not to participate in this capstone project in association with TAMU's The Bush School of Government and Public Service and the Texas Education Grantmakers Advocacy Consortium (TEGAC). Read the information below and ask any questions you might have before deciding whether or not to take part. If you decide to be involved in this study, this form will be used to record your consent.

Purpose of the Study:
The purpose of this Bush School capstone is to conduct a yearlong qualitative study on how Texas high schools are implementing House Bill 5 (Guided Pathways). The capstone is specifically attempting to understand barriers to success as well as any best practices that can be replicated in schools across the state.

If you agree to participate in this study, you will be asked to participate in a professional dialogue with Texas A&M graduate students (no more than four students) for no more than about 45 minutes in a private setting at your convenience. During this exchange, the students will ask you general questions about your experience in implementing HB 5 (Guided Pathways). These exchanges are meant to build the current context surrounding Guided Pathways across Texas. Your responses will aid the students in developing a policy report for TEGAC to disseminate to members of the Texas Legislature with the goal of addressing public education issues in advance of and during the 85th Legislature.

This capstone project will involve input from education professionals, Texas Legislators, as well as educational stakeholders across the state of Texas. Your input will aid in deepening the understanding of how Guided Pathways has been received across Texas since its formal passing. In turn, this project will provide practical guidance for other Texas schools to improve their adaptation and implementation of Guided Pathways.

Risks and Benefits of Participation:
There are no foreseeable risks to participating in this study. You will not receive any type of payment for participating in this study. You will receive no direct benefit from participating in this study, however this study hopes to provide a much needed evidence base for best practice recommendations to ensure Texas Legislators and educational stakeholders – community leaders, industry leaders, school professionals, parents, and

students - have the information needed to further improve the state of education across the state of Texas.

Your participation in this study is voluntary. You may decide not to participate at all or, if you start the study, you may withdraw at any time without penalty. If you agree to participate, you may skip any questions you would prefer not to answer with no penalty.

Data Privacy and Security:
In all cases, specific utterances will not be associated with specific individuals unless critical to reporting. In all cases, the respondent will be contacted by the capstone team to confirm their permission for usage of their quote and inclusion of identifying information in the final report. Each respondent will have an opportunity to keep his or her responses 'off the record.' For further reassurance, a draft of the policy report will be sent to each participant to ensure all mentions and quotes can be confirmed before final publication.

All data will be kept confidentially in the hard drives of the capstone team and on a shared folder inbox, which one needs both a password and a personal invitation to access. All data will be retained in this secure manner. The data resulting from your participation may be made available to future researchers for research purposes not detailed within this consent form. In these cases, the data will contain no identifying information that could associate it with you, or with your participation in this study. Despite a careful regard for the confidentiality of all participants, we do not believe the questions posed will reveal particularly sensitive insights for which respondents would be at risk for disclosing.

If it becomes necessary for the Texas A&M Institutional Review Board to review the study records, information that can be linked to you will be protected to the extent permitted by law. Your research records will not be released without your consent unless required by law or a court order.

Questions about this Study:
Prior, during or after your participation you can contact the Primary Investigator, Dr. Jenny Morrison, at 682-444-1880 or send an email to jnk59@tamu.edu.

This study has been reviewed and received ethical approval by The Texas A&M Institutional Review Board, study number IRB2015-0861D. For questions about your rights or any dissatisfaction with any part of this study, you can contact, anonymously if you wish, the A & M Institutional Review Board by phone at 979-458-4117 or clhiggins@tamu.edu to reach Catherine Higgins, Research Compliance Manager.

Participation:
If you would like to participate in this research you must sign this form, and return it to the researcher. You will receive an information sheet that duplicates what is on this form.

Signature:
By signing below, you indicate that you have been informed about this study's purpose, procedures, possible benefits and risks, have been given the opportunity to ask questions,

and have had your questions answered to your satisfaction. You voluntarily agree to participate in this study. By signing this form, you are not waiving any of your legal rights.

_____

Printed Name

_____

Signature

_____

Date

As a representative of this project, I have explained the purpose, procedures, benefits, and risks of participating.

_____

Printed Name of Person Obtaining Consent

_____

Signature of Person Obtaining Consent

_____

Date

APPENDIX C: INTERVIEW PROTOCOL

Formal discussion questions for educational leaders/district administrators will include:

FIVE GUIDING RESEARCH QUESTIONS

1. What endorsements are you currently offering?
    1.1. Why?
2. What partnerships exist with your institution and local industry?
3. What specific role does the school counselor play in the implementation of HB 5?
4. On a scale 1-5 how comfortable are you with the intention and implementation of HB 5?
5. Could you identify one word to describe your experience with HB 5?

LINE OF QUESTIONING

1. What are you **initial views of school reform** before the implementation of HB 5?
2. Once HB 5 became law, what were the **first steps taken by you and your staff to prepare to transition** to this new educational model?
    2.1. What challenges were incurred?
3. Which endorsements are **being offered at this time** at your school?
    3.1. What is your rationale for providing those endorsements?
    3.2. How/when/under what circumstances will future endorsements be decided/developed?
4. Follow Up: What process was followed in **evaluating each endorsement** and selecting one, over the other? (Another wording: What was the overall process used, cost-benefit analysis, or a different methodology?)
5. Did your district/school **communicate with any other districts** when considering which endorsements to offer?
    5.1. If yes, what answers, information were you seeking to better inform your response to HB 5?
    5.2. If no, why information did you rely on here within your own school/district?
6. In terms of **collaboration**, has there been any outreach from industry to your school, or vis versa?
    6.1. If no steps have been taken on behalf of the school, what was the rationale to not collaborate with local industry?
7. Follow Up: What **barriers** currently exists that hinder better collaboration with local industry?
8. Other than local industry, **who else have you (or your staff) involved in assessing** the HB 5 endorsements, and which endorsements fit best in your school?

9. How are students/families **receiving information** regarding the endorsements your district/school offers?

    9.1. Were **other methods of dissemination considered?**

        9.1.1. If yes, what were those methods,

        9.1.2. If no, why not?

10. What **barriers exists that hinder students/families from understanding the structure** and purpose of HB 5?

    10.1. Could any of these barriers be prevented in the original legislation?

11. What **services are available to students who are uncertain** as to which endorsement is right for him/her?

    11.1. If none are available, why not? Is there a specific barrier to providing those resources?

12. What **impact** have you noticed this legislation has had on your **school's counselors,** and their role in your school?

13. What **unexpected costs have been accrued** since the implementation of HB 5? Were **costs a factor in determining which endorsements to offer?**

    13.1. In what way specifically?

14. What policies are in place to **aid transfer students** in remaining on track with their endorsements?

15. Do you have any additional comments about the implementation of HB 5, or any additional thoughts in general?

APPENDIX D: COMPARISON OF GRADUATION PROGRAMS

Side-by-Side Comparison: Graduation Program Options to be Implemented Beginning in 2014-2015

Discipline	Foundation HSP	*MHSP	*RHSP	*DAP
English Language Arts	**Four credits:** • English I • English II • English III • An advanced English course	**Four credits:** • English I • English II • English III • English IV or approved alternate course	**Four credits:** • English I • English II • English III • English IV	**Four credits:** • English I • English II • English III • English IV
Mathematics	**Three credits:** • Algebra I • Geometry • An advanced math course	**Three credits:** • Algebra I • Geometry • SBOE approved math course	**Four credits:** • Algebra I • Algebra II • Geometry • An additional math credit	**Four credits:** • Algebra I • Algebra II • Geometry • An additional math credit
Science	**Three credits:** • Biology • IPC or an advanced science course • An advanced science course	**Two credits:** • Biology • IPC or Chemistry and Physics (one of the two serves as an academic elective)	**Four credits:** • Biology • Chemistry • Physics • An additional science credit	**Four credits:** • Biology • Chemistry • Physics • An additional science credit
Social Studies	**Three credits** • U.S. History • U.S. Government (one-half credit) • Economics (one-half credit) • World History or World Geography	**Three credits:** • U.S. History (one credit) • U.S. Government (one-half credit) • Economics (one-half credit) • World History (one credit) or World Geography (one credit)	**Four credits:** • U.S. History (one credit) • U.S. Government (one-half credit) • Economics (one-half credit) • World History (one credit) • World Geography (one credit)	**Four credits:** • U.S. History (one credit) • U.S. Government (one-half credit) • Economics (one-half credit) • World History (one credit) • World Geography (one credit)
Physical Education	**One credit**	**One credit**	**One credit**	**One credit**
Languages Other Than English	**Two credits in the same language** Two credits from Computer Science I, II, and III (other substitutions)	**None**	**Two credits in the same language**	**Three credits in the same language**
Fine Arts	**One credit**	**One credit**	**One credit**	**One credit**
Speech	**Demonstrated proficiency in speech skills**	**One-half credit from either of the following:** • Communication Applications • Professional Communications (CTE)	**One-half credit from either of the following:** • Communication Applications • Professional Communications (CTE)	**One-half credit from either of the following:** • Communication Applications • Professional Communications (CTE)
Electives	**Five credits**	**Seven and one half credits (one must be an academic elective)**	**Five and one-half credits**	**Four and one-half credits**
Total Credits	22	22	26	26

* Only available for students who entered grade 9 before the 2014-2015 school year

Side-by-Side Comparison: Graduation Program Options to be Implemented Beginning in 2014-2015

Endorsements	**A student may earn an endorsement by successfully completing** • **curriculum requirements for the endorsement** • **a total of four credits in mathematics** • **a total of four credits in science** • **two additional elective credits**
STEM	A coherent sequence or series of courses selected from one of the following: • CTE courses with a final course from the STEM career cluster • Computer science • Mathematics • Science • A combination of no more than two of the categories listed above
Business and Industry	A coherent sequence or series of courses selected from one of the following: • CTE courses with a final course from the Agriculture, Food, & Natural Resources; Architecture & Construction; Arts, Audio/Video, Technology & Communications; Business Management & Administration; Finance; Hospitality & Tourism; Information Technology; Manufacturing, Marketing; Transportation, or Distribution & Logistics CTE career cluster • The following English electives: public speaking, debate, advanced broadcast journalism including newspaper and yearbook • Technology applications • A combination of credits from the categories listed above
Public Services	A coherent sequence or series of courses selected from one of the following: • CTE courses with a final course from the Education & Training; Government & Public Administration; Health Science, Human Services; or Law, Public Safety, Corrections, and Security career cluster • JROTC
Arts and Humanities	A coherent sequence or series of courses selected from one of the following: • Social studies • The same language in Languages Other Than English • Two levels in each of two language in Languages Other Than English • American Sign Language (ASL) • Courses from one or two categories (art, dance, music, and theater) in fine arts • English electives that are not part of Business and Industry
Multidisciplinary Studies	A coherent sequence or series of courses selected from one of the following: • Four advanced courses that prepare a student to enter the workforce successfully or postsecondary education without remediation from within one endorsement area or among endorsement areas that are not in a coherent sequence • Four credits in each of the four foundation subject areas to include English IV and chemistry and/or physics • Four credits in AP, IB, or dual credit selected from English, mathematics, science, social studies, economics, languages other than English, or fine arts
	Total Credits w/endorsement - 26
Distinguished Level of Achievement	• A total of four credits in math, including credit in Algebra II • A total of four credits in science • Completion of curriculum requirements for at least one endorsement

Performance Acknowledgments	▪ For outstanding performance
	  • in a dual credit course
	  • in bilingualism and biliteracy
	  • on an AP test or IB exam
	  • on the PSAT, the ACT-Plan, the SAT, or the ACT
	▪ For earning a nationally or internationally recognized business or industry certification or license

APPENDIX E: TEXAS HIGH SCHOOL CURRICULUM

From Title 19, Part II, Texas Administrative Code, Chapter 74, Subchapter B

§74.11. High School Graduation Requirements.

(a) To receive a high school diploma, a student entering Grade 9 in the 2014-2015 school year and thereafter must complete the following:

(1) in accordance with subsection (c) of this section, requirements of the Foundation High School Program specified in §74.12 of this title (relating to Foundation High School Program);

(2) testing requirements for graduation as specified in Chapter 101 of this title (relating to Assessment); and

(3) demonstrated proficiency, as determined by the district in which the student is enrolled, in delivering clear verbal messages; choosing effective nonverbal behaviors; listening for desired results; applying valid critical-thinking and problem-solving processes; and identifying, analyzing, developing, and evaluating communication skills needed for professional and social success in interpersonal situations, group interactions, and personal and professional presentations.

(b) A school district shall clearly indicate the distinguished level of achievement under the Foundation High School Program, an endorsement, and a performance acknowledgment on the diploma and transcript or academic achievement record (AAR) of a student who satisfies the applicable requirements.

(c) A student entering Grade 9 in the 2014-2015 school year and thereafter shall enroll in the courses necessary to complete the curriculum requirements for the Foundation High School Program specified in §74.12 of this title and the curriculum requirements for at least one endorsement specified in §74.13 of this title (relating to Endorsements).

(d) A student may graduate under the Foundation High School Program without earning an endorsement if, after the student's sophomore year:

(1) the student and the student's parent or person standing in parental relation to the student are advised by a school counselor of the specific benefits of graduating from high school with one or more endorsements; and

(2) the student's parent or person standing in parental relation to the student files with a school counselor written permission, on a form adopted by the Texas Education Agency (TEA), allowing the student to graduate under the Foundation High School Program without earning an endorsement.

(e) A student may earn a distinguished level of achievement by successfully completing the curriculum requirements for the Foundation High School Program and the curriculum requirements for at least one endorsement required by the Texas Education Code (TEC), §28.025(b-15), including four credits in science and four credits in mathematics to include Algebra II.

(f) An out-of-state or out-of-country transfer student (including foreign exchange students) or a transfer student from a Texas nonpublic school is eligible to receive a Texas diploma, but must complete all

requirements of this section to satisfy state graduation requirements. Any course credit required in this section that is not completed by the student before he or she enrolls in a Texas school district may be satisfied through the provisions of §74.23 of this title (relating to Correspondence Courses and Distance Learning) and §74.24 of this title (relating to Credit by Examination) or by completing the course or courses according to the provisions of §74.26 of this title (relating to Award of Credit).

(g) Elective credits may be selected from the following:

(1) high school courses not required for graduation that are listed in the following chapters of this title:

(A) Chapter 110 of this title (relating to Texas Essential Knowledge and Skills for English Language Arts and Reading);

(B) Chapter 111 of this title (relating to Texas Essential Knowledge and Skills for Mathematics);

(C) Chapter 112 of this title (relating to Texas Essential Knowledge and Skills for Science);

(D) Chapter 113 of this title (relating to Texas Essential Knowledge and Skills for Social Studies);

(E) Chapter 114 of this title (relating to Texas Essential Knowledge and Skills for Languages Other Than English);

(F) Chapter 115 of this title (relating to Texas Essential Knowledge and Skills for Health Education);

(G) Chapter 116 of this title (relating to Texas Essential Knowledge and Skills for Physical Education);

(H) Chapter 117 of this title (relating to Texas Essential Knowledge and Skills for Fine Arts);

(I) Chapter 118 of this title (relating to Texas Essential Knowledge and Skills for Economics with Emphasis on the Free Enterprise System and Its Benefits);

(J) Chapter 126 of this title (relating to Texas Essential Knowledge and Skills for Technology Applications);

(K) Chapter 127 of this title (relating to Texas Essential Knowledge and Skills for Career Development); and

(L) Chapter 130 of this title (relating to Texas Essential Knowledge and Skills for Career and Technical Education);

(2) state-approved innovative courses as specified in §74.27 of this title (relating to Innovative Courses and Programs);

(3) Junior Reserve Officer Training Corps (JROTC)--one to four credits; and

(4) Driver Education--one-half credit.

(h) College Board Advanced Placement and International Baccalaureate courses may be substituted as appropriate for required courses. A single College Board Advanced Placement or International Baccalaureate course may not count toward more than one credit required for graduation. If a College Board Advanced Placement or International Baccalaureate course is substituted for a required course, that course may not satisfy a requirement for an advanced course, but may count toward both a required course and an endorsement. College Board Advanced Placement and International Baccalaureate courses may satisfy elective credit requirements.

(i) Courses offered for dual credit at or in conjunction with an institution of higher education that provide advanced academic instruction beyond, or in greater depth than, the essential knowledge and skills for the equivalent high school course required for graduation may satisfy graduation requirements, including requirements for required courses, advanced courses, and courses for elective credit as well as requirements for endorsements.

(j) A student may not be enrolled in a course that has a required prerequisite unless:

(1) the student has successfully completed the prerequisite course(s);

(2) the student has demonstrated equivalent knowledge as determined by the school district; or

(3) the student was already enrolled in the course in an out-of-state, an out-of-country, or a Texas nonpublic school and transferred to a Texas public school prior to successfully completing the course.

(k) A district may award credit for a course a student completed without meeting the prerequisites if the student completed the course in an out-of-state, an out-of-country, or a Texas nonpublic school where there was not a prerequisite.

(l) Each school district shall annually report to the TEA the names of the locally developed courses, programs, institutions of higher education, and internships in which the district's students have enrolled as authorized by the TEC, §28.002(g-1). The TEA shall make available information provided under this subsection to other districts. If a district chooses, it may submit any locally developed course for approval under §74.27 of this title as an innovative course.

Source: The provisions of this §74.11 adopted to be effective July 8, 2014, 39 TexReg 5149.

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§74.12. Foundation High School Program.

(a) Credits. A student must earn at least 22 credits to complete the Foundation High School Program.

(b) Core courses. A student must demonstrate proficiency in the following.

(1) English language arts--four credits. Three of the credits must consist of English I, II, and III. (Students with limited English proficiency who are at the beginning or intermediate level of English language proficiency, as defined by §74.4(d) of this title (relating to English Language Proficiency Standards), may satisfy the English I and English II graduation requirements by successfully completing English I for Speakers of Other Languages and English II for Speakers of Other Languages.) The additional credit may be selected from one full credit or a combination of two half credits from two different courses, subject to prerequisite requirements, from the following courses:

(A) English IV;

(B) Independent Study in English;

(C) Literary Genres;

(D) Creative Writing;

(E) Research and Technical Writing;

(F) Humanities;

(G) Public Speaking III;

(H) Communication Applications, which must be combined with another half credit from the other courses listed in subparagraphs (A)-(G) and (I)-(T) of this paragraph;

(I) Oral Interpretation III;

(J) Debate III;

(K) Independent Study in Speech;

(L) Independent Study in Journalism;

(M) Advanced Broadcast Journalism III;

(N) Advanced Journalism: Newspaper III;

(O) Advanced Journalism: Yearbook III;

(P) Advanced Placement (AP) English Literature and Composition;

(Q) International Baccalaureate (IB) Language Studies A1 Higher Level;

(R) after the successful completion of English I, II, and III, a locally developed English language arts course or other activity, including an apprenticeship or training hours needed to obtain an industry-recognized credential or certificate that is developed pursuant to the Texas Education Code (TEC), §28.002(g-1);

(S) Business English; and

(T) a college preparatory English language arts course that is developed pursuant to the TEC, §28.014.

(2) Mathematics--three credits. Two of the credits must consist of Algebra I and Geometry.

(A) The additional credit may be selected from one full credit or a combination of two half credits from two different courses, subject to prerequisite requirements, from the following courses or a credit selected from the courses listed in subparagraph (B) of this paragraph:

(i) Mathematical Models with Applications;

(ii) Mathematical Applications in Agriculture, Food, and Natural Resources;

(iii) Digital Electronics; and

(iv) Robotics Programming and Design.

(B) The additional credit may be selected from one full credit or a combination of two half credits from two different courses, subject to prerequisite requirements, from the following courses:

(i) Algebra II;

(ii) Precalculus;

(iii) Advanced Quantitative Reasoning;

(iv) Independent Study in Mathematics;

(v) Discrete Mathematics for Problem Solving;

(vi) Algebraic Reasoning;

(vii) Statistics;

(viii) AP Statistics;

(ix) AP Calculus AB;

(x) AP Calculus BC;

(xi) AP Computer Science;

(xii) IB Mathematical Studies Standard Level;

(xiii) IB Mathematics Standard Level;

(xiv) IB Mathematics Higher Level;

(xv) IB Further Mathematics Higher Level;

(xvi) Engineering Mathematics;

(xvii) Statistics and Risk Management;

(xviii) Discrete Mathematics for Computer Science;

(xix) pursuant to the TEC, §28.025(b-5), after the successful completion of Algebra II, a mathematics course endorsed by an institution of higher education as a course for which the institution would award course credit or as a prerequisite for a course for which the institution would award course credit. The Texas Education Agency (TEA) shall maintain a current list of courses offered under this subparagraph; and

(xx) after the successful completion of Algebra I and Geometry, a locally developed mathematics course or other activity, including an apprenticeship or training hours needed to obtain an industry-recognized credential or certificate that is developed pursuant to the TEC, §28.002(g-1).

(3) Science--three credits. One credit must consist of Biology, AP Biology, or IB Biology.

(A) One credit must be selected from the following laboratory-based courses:

(i) Integrated Physics and Chemistry;

(ii) Chemistry;

(iii) AP Chemistry;

(iv) IB Chemistry;

(v) Physics;

(vi) Principles of Technology;

(vii) AP Physics 1: Algebra-Based; and

(viii) IB Physics.

(B) The additional credit may be selected from one full credit or a combination of two half credits from two different courses, subject to prerequisite requirements, from the following laboratory-based courses:

(i) Chemistry;

(ii) Physics;

(iii) Aquatic Science;

(iv) Astronomy;

(v) Earth and Space Science;

(vi) Environmental Systems;

(vii) AP Biology;

(viii) AP Chemistry;

(ix) AP Physics 1: Algebra-Based;

(x) AP Physics 2: Algebra-Based;

(xi) AP Physics C;

(xii) AP Environmental Science;

(xiii) IB Biology;

(xiv) IB Chemistry;

(xv) IB Physics;

(xvi) IB Environmental Systems;

(xvii) Advanced Animal Science;

(xviii) Advanced Plant and Soil Science;

(xix) Anatomy and Physiology;

(xx) Medical Microbiology;

(xxi) Pathophysiology;

(xxii) Food Science;

(xxiii) Forensic Science;

(xxiv) Advanced Biotechnology;

(xxv) Principles of Technology;

(xxvi) Scientific Research and Design;

(xxvii) Engineering Design and Problem Solving;

(xxviii) Principles of Engineering;

(xxix) pursuant to the TEC, §28.025(b-5), after the successful completion of physics, a science course endorsed by an institution of higher education as a course for which the institution would award course credit or as a prerequisite for a course for which the institution would award course credit. The TEA shall maintain a current list of courses offered under this clause; and

(xxx) a locally developed science course or other activity, including an apprenticeship or training hours needed to obtain an industry-recognized credential or certificate that is developed pursuant to the TEC, §28.002(g-1).

(C) Credit may not be earned for both physics and Principles of Technology to satisfy science credit requirements.

(4) Social studies--three credits. Two of the credits must consist of United States History Studies Since 1877 (one credit), United States Government (one-half credit), and Economics with Emphasis on the Free Enterprise System and Its Benefits (one-half credit). The additional credit may be selected from the following courses:

(A) World History Studies;

(B) World Geography Studies; and

(C) Combined World History/World Geography.

(5) Languages other than English (LOTE)--two credits.

(A) The credits may be selected from the following:

(i) any two levels in the same language; or

(ii) two credits in computer programming languages selected from Computer Science, I, II, and III.

(iii) The provision relating to Computer Science I, II, and III in clause (ii) of this subparagraph applies to credits earned before September 1, 2016. Credits earned for Computer Science I, II, and III may not satisfy LOTE credit requirements on or after September 1, 2016, and may not be used to comply with this paragraph. The provision relating to Computer Science I, II, and III in clause (ii) of this subparagraph expires September 1, 2017.

(B) If a student, in completing the first credit of LOTE, demonstrates that the student is unlikely to be able to complete the second credit, the student may substitute another appropriate course as follows:

(i) Special Topics in Language and Culture;

(ii) World History Studies or World Geography Studies for a student who is not required to complete both by the local district;

(iii) another credit selected from Chapter 114 of this title (relating to Texas Essential Knowledge and Skills for Languages Other Than English); or

(iv) computer programming languages.

(C) The determination regarding a student's ability to complete the second credit of LOTE must be agreed to by:

(i) the teacher of the first LOTE credit course, the principal or designee, and the student's parent or person standing in parental relation;

(ii) the student's admission, review, and dismissal (ARD) committee if the student receives special education services under the TEC, Chapter 29, Subchapter A; or

(iii) the committee established for the student under Section 504, Rehabilitation Act of 1973 (29 United States Code, Section 794) if the student does not receive special education services under the TEC, Chapter 29, Subchapter A, but is covered by the Rehabilitation Act of 1973.

(D) A student, who due to a disability, is unable to complete two credits in the same language in a language other than English, may substitute a combination of two credits from English language arts, mathematics, science, or social studies or two credits in career and technical education or technology applications for the LOTE credit requirements. The determination regarding a student's ability to complete the LOTE credit requirements will be made by:

(i) the student's ARD committee if the student receives special education services under the TEC, Chapter 29, Subchapter A; or

(ii) the committee established for the student under Section 504, Rehabilitation Act of 1973 (29 United States Code (USC), §794) if the student does not receive special education services under the TEC, Chapter 29, Subchapter A, but is covered by the Rehabilitation Act of 1973.

(6) Physical education--one credit.

(A) The required credit may be selected from any combination of the following one-half to one credit courses:

(i) Foundations of Personal Fitness;

(ii) Adventure/Outdoor Education;

(iii) Aerobic Activities; and

(iv) Team or Individual Sports.

(B) In accordance with local district policy, the required credit may be earned through completion of any Texas essential knowledge and skills-based course that meets the requirement in subparagraph (E) of this paragraph for 100 minutes of moderate to vigorous physical activity per five-day school week and that is not being used to satisfy another specific graduation requirement.

(C) In accordance with local district policy, credit for any of the courses listed in subparagraph (A) of this paragraph may be earned through participation in the following activities:

(i) Athletics;

(ii) Junior Reserve Officer Training Corps (JROTC); and

(iii) appropriate private or commercially sponsored physical activity programs conducted on or off campus. The district must apply to the commissioner of education for approval of such programs, which may be substituted for state graduation credit in physical education. Such approval may be granted under the following conditions.

(I) Olympic-level participation and/or competition includes a minimum of 15 hours per week of highly intensive, professional, supervised training. The training facility, instructors, and the activities involved in the program must be certified by the superintendent to be of exceptional quality. Students qualifying and participating at this level may be dismissed from school one hour per day. Students dismissed may not miss any class other than physical education.

(II) Private or commercially sponsored physical activities include those certified by the superintendent to be of high quality and well supervised by appropriately trained instructors. Student participation of at least five hours per week must be required. Students certified to participate at this level may not be dismissed from any part of the regular school day.

(D) In accordance with local district policy, up to one credit for any one of the courses listed in subparagraph (A) of this paragraph may be earned through participation in any of the following activities:

(i) Drill Team;

(ii) Marching Band; and

(iii) Cheerleading.

(E) All substitution activities allowed in subparagraphs (B)-(D) of this paragraph must include at least 100 minutes per five-day school week of moderate to vigorous physical activity.

(F) Credit may not be earned more than once for any course identified in subparagraph (A) of this paragraph. No more than four substitution credits may be earned through any combination of substitutions allowed in subparagraphs (B)-(D) of this paragraph.

(G) A student who is unable to participate in physical activity due to disability or illness may substitute an academic elective credit (English language arts, mathematics, science, or social studies) or a course that is offered for credit as provided by the TEC, §28.002(g-1), for the physical education credit requirement. The determination regarding a student's ability to participate in physical activity will be made by:

(i) the student's ARD committee if the student receives special education services under the TEC, Chapter 29, Subchapter A;

(ii) the committee established for the student under Section 504, Rehabilitation Act of 1973 (29 USC, §794) if the student does not receive special education services under the TEC, Chapter 29, Subchapter A, but is covered by the Rehabilitation Act of 1973; or

(iii) a committee established by the school district of persons with appropriate knowledge regarding the student if each of the committees described by clauses (i) and (ii) of this subparagraph is inapplicable. This committee shall follow the same procedures required of an ARD or a Section 504 committee.

(7) Fine arts--one credit.

(A) The credit may be selected from the following courses subject to prerequisite requirements:

(i) Art, Level I, II, III, or IV;

(ii) Dance, Level I, II, III, or IV;

(iii) Music, Level I, II, III, or IV;

(iv) Theatre, Level I, II, III, or IV;

(v) Principles and Elements of Floral Design;

(vi) Digital Art and Animation; and

(vii) 3-D Modeling and Animation.

(B) In accordance with local district policy, credit may be earned through participation in a community-based fine arts program not provided by the school district in which the student is enrolled. The district must apply to the commissioner of education for approval of such programs, which may be substituted for state graduation credit in fine arts. Approval may be granted if the fine arts program provides instruction in the essential knowledge and skills identified for a fine arts course as defined by Chapter 117, Subchapter C, of this title (relating to High School).

(c) Elective courses--five credits. The credits must be selected from the list of courses specified in §74.11(g), (h), or (i) of this title (relating to High School Graduation Requirements) or from a locally developed course or activity developed pursuant to the TEC, §28.002(g-1), for which a student may receive credit and that does not satisfy a specific course requirement.

(d) Substitutions. No substitutions are allowed in the Foundation High School Program, except as specified in this chapter.

Source: The provisions of this §74.12 adopted to be effective July 8, 2014, 39 TexReg 5149.

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§74.13. Endorsements.

(a) A student shall specify in writing an endorsement the student intends to earn upon entering Grade 9.

(b) A district shall permit a student to enroll in courses under more than one endorsement before the student's junior year and to choose, at any time, to earn an endorsement other than the endorsement the student previously indicated. This section does not entitle a student to remain enrolled to earn more than 26 credits.

(c) A student must earn at least 26 credits to earn an endorsement.

(d) A school district may define advanced courses and determine a coherent sequence of courses for an endorsement area, provided that prerequisites in Chapters 110-118, 126, 127, and 130 of this title are followed.

(e) To earn an endorsement a student must demonstrate proficiency in the following.

(1) The curriculum requirements for the Foundation High School Program as defined by §74.12 of this title (relating to Foundation High School Program).

(2) A fourth credit in mathematics that may be selected from one full credit or a combination of two half credits from two different courses, subject to prerequisite requirements, from the following courses:

(A) Algebra II;

(B) Precalculus;

(C) Advanced Quantitative Reasoning;

(D) Independent Study in Mathematics;

(E) Discrete Mathematics for Problem Solving;

(F) Algebraic Reasoning;

(G) Statistics;

(H) Advanced Placement (AP) Statistics;

(I) AP Calculus AB;

(J) AP Calculus BC;

(K) AP Computer Science;

(L) International Baccalaureate (IB) Mathematical Studies Standard Level;

(M) IB Mathematics Standard Level;

(N) IB Mathematics Higher Level;

(O) IB Further Mathematics Higher Level;

(P) Engineering Mathematics;

(Q) Statistics and Risk Management;

(R) Discrete Mathematics for Computer Science;

(S) pursuant to the Texas Education Code (TEC), §28.025(b-5), after the successful completion of Algebra II, a mathematics course endorsed by an institution of higher education as a course for which the institution would award course credit or as a prerequisite for a course for which the institution would award course credit. The Texas Education Agency (TEA) shall maintain a current list of courses offered under this subparagraph;

(T) after the successful completion of Algebra I and Geometry, a locally developed mathematics course or other activity, including an apprenticeship or training hours needed to obtain an industry-recognized credential or certificate that is developed pursuant to the TEC, §28.002(g-1); and

(U) Mathematical Models with Applications, if credit is earned prior to September 1, 2015, or September 1 of a subsequent year in which either of the courses listed in subparagraph (F) or (G) of this paragraph has been developed and approved by the State Board of Education, whichever is later.

(3) A student may complete a course listed in paragraph (2) of this subsection before or after completing a course listed in §74.12(b)(2)(A) of this title.

(4) The fourth mathematics credit may be a college preparatory mathematics course that is developed and offered pursuant to the TEC, §28.014.

(5) An additional credit in science that may be selected from one full credit or a combination of two half credits from two different courses, subject to prerequisite requirements, from the following courses:

(A) Chemistry;

(B) Physics;

(C) Aquatic Science;

(D) Astronomy;

(E) Earth and Space Science;

(F) Environmental Systems;

(G) AP Biology;

(H) AP Chemistry;

(I) AP Physics 1: Algebra-Based;

(J) AP Physics 2: Algebra-Based;

(K) AP Physics C;

(L) AP Environmental Science;

(M) IB Biology;

(N) IB Chemistry;

(O) IB Physics;

(P) IB Environmental Systems;

(Q) Advanced Animal Science;

(R) Advanced Plant and Soil Science;

(S) Anatomy and Physiology;

(T) Medical Microbiology;

(U) Pathophysiology;

(V) Food Science;

(W) Forensic Science;

(X) Advanced Biotechnology;

(Y) Principles of Technology;

(Z) Scientific Research and Design;

(AA) Engineering Design and Problem Solving;

(BB) Principles of Engineering;

(CC) pursuant to the TEC, §28.025(b-5), after the successful completion of physics, a science course endorsed by an institution of higher education as a course for which the institution would award course credit or as a prerequisite for a course for which the institution would award course credit. The TEA shall maintain a current list of courses offered under this subparagraph;

(DD) a locally developed science course or other activity, including an apprenticeship or training hours needed to obtain an industry-recognized credential or certificate that is developed pursuant to the TEC, §28.002(g-1);

(EE) pursuant to the TEC, §28.025(c-3), a student pursuing an arts and humanities endorsement who has the written permission of the student's parent or a person standing in parental relation to the student may substitute a course selected from:

(i) Chapter 110 of this title (relating to Texas Essential Knowledge and Skills for English Language Arts and Reading);

(ii) Chapter 113 of this title (relating to Texas Essential Knowledge and Skills for Social Studies) or Chapter 118 of this title (relating to Texas Essential Knowledge and Skills for Economics with Emphasis on the Free Enterprise System and Its Benefits);

(iii) Chapter 114 of this title (relating to Texas Essential Knowledge and Skills for Languages Other Than English); or

(iv) Chapter 117 of this title (relating to Texas Essential Knowledge and Skills for Fine Arts); and

(FF) credit may not be earned for both physics and Principles of Technology to satisfy science credit requirements.

(6) Two additional elective credits that may be selected from the list of courses specified in §74.11(g), (h), or (i) of this title (relating to High School Graduation Requirements).

(f) A student may earn any of the following endorsements.

(1) Science, technology, engineering, and mathematics (STEM). A student may earn a STEM endorsement by completing the requirements specified in subsection (e) of this section, including Algebra II, chemistry, and physics and:

(A) a coherent sequence of courses for four or more credits in career and technical education (CTE) that consists of at least two courses in the same career cluster, including at least one advanced CTE course, which includes any course that is the third or higher course in a sequence. The courses may be selected from Chapter 130 of this title (relating to Texas Essential Knowledge and Skills for Career and Technical Education), Chapter 127 of this title (relating to Texas Essential Knowledge and Skills for Career Development), or CTE innovative courses approved by the commissioner of education. The final course in the sequence must be obtained from one of the CTE career clusters listed in Chapter 130, Subchapter O, of this title (relating to Science, Technology, Engineering, and Mathematics); or

(B) a coherent sequence of four credits in computer science selected from the following:

(i) Fundamentals of Computer Science; or

(ii) Computer Science I; or

(iii) Computer Science II; or

(iv) Computer Science III; or

(v) Digital Forensics; or

(vi) Discrete Mathematics for Computer Science; or

(vii) Game Programming and Design; or

(viii) Mobile Application Development; or

(ix) Robotics Programming and Design; or

(x) Independent Studies in Technology Applications; or

(xi) AP Computer Science; or

(xii) IB Computer Science, Standard Level; or

(xiii) IB Computer Science, Higher Level; or

(C) three credits in mathematics by successfully completing Algebra II and two additional mathematics courses for which Algebra II is a prerequisite by selecting courses from subsection (e)(2) of this section; or

(D) four credits in science by successfully completing chemistry, physics, and two additional science courses by selecting courses from subsection (e)(5) of this section; or

(E) in addition to Algebra II, chemistry, and physics, a coherent sequence of three additional credits from no more than two of the categories or disciplines represented by subparagraphs (A), (B), (C), and (D) of this paragraph.

(2) Business and industry. A student may earn a business and industry endorsement by completing the requirements specified in subsection (e) of this section and:

(A) a coherent sequence of courses for four or more credits in CTE that consists of at least two courses in the same career cluster, including at least one advanced CTE course, which includes any course that is the third or higher course in a sequence. The courses may be selected from Chapter 130 of this title, Chapter 127 of this title, or CTE innovative courses approved by the commissioner. The final course in the sequence must be obtained from one of the CTE career clusters listed in the following:

(i) Chapter 130, Subchapter A, of this title (relating to Agriculture, Food, and Natural Resources); or

(ii) Chapter 130, Subchapter B, of this title (relating to Architecture and Construction); or

(iii) Chapter 130, Subchapter C, of this title (relating to Arts, Audio/Video Technology, and Communications); or

(iv) Chapter 130, Subchapter D, of this title (relating to Business Management and Administration); or

(v) Chapter 130, Subchapter F, of this title (relating to Finance); or

(vi) Chapter 130, Subchapter I, of this title (relating to Hospitality and Tourism); or

(vii) Chapter 130, Subchapter K, of this title (relating to Information Technology); or

(viii) Chapter 130, Subchapter M, of this title (relating to Manufacturing); or

(ix) Chapter 130, Subchapter N, of this title (relating to Marketing); or

(x) Chapter 130, Subchapter P, of this title (relating to Transportation, Distribution, and Logistics); or

(B) four English elective credits by selecting courses from Chapter 110 of this title to include three levels in one of the following areas:

(i) public speaking; or

(ii) debate; or

(iii) advanced broadcast journalism; or

(iv) advanced journalism: newspaper; or

(v) advanced journalism: yearbook; or

(C) four technology applications credits by selecting from the following:

(i) Digital Design and Media Production; or

(ii) Digital Art and Animation; or

(iii) 3-D Modeling and Animation; or

(iv) Digital Communications in the 21st Century; or

(v) Digital Video and Audio Design; or

(vi) Web Communications; or

(vii) Web Design; or

(viii) Web Game Development; or

(ix) Independent Study in Evolving/Emerging Technologies; or

(D) a coherent sequence of four credits from subparagraph (A), (B), or (C) of this paragraph.

(3) Public services. A student may earn a public services endorsement by completing the requirements specified in subsection (e) of this section and:

(A) a coherent sequence of courses for four or more credits in CTE that consists of at least two courses in the same career cluster, including at least one advanced CTE course, which includes any course that is the third or higher course in a sequence. The courses may be selected from Chapter 130 of this title, Chapter 127 of this title, or CTE innovative courses approved by the commissioner. The final course in the sequence must be obtained from one of the CTE career clusters listed in the following:

(i) Chapter 130, Subchapter E, of this title (relating to Education and Training); or

(ii) Chapter 130, Subchapter G, of this title (relating to Government and Public Administration); or

(iii) Chapter 130, Subchapter H, of this title (relating to Health Science); or

(iv) Chapter 130, Subchapter J, of this title (relating to Human Services); or

(v) Chapter 130, Subchapter L, of this title (relating to Law, Public Safety, Corrections, and Security); or

(B) four courses in Junior Reserve Officer Training Corps (JROTC).

(4) Arts and humanities. A student may earn an arts and humanities endorsement by completing the requirements specified in subsection (e) of this section and:

(A) five social studies credits by selecting courses from Chapter 113 of this title or Chapter 118 of this title (relating to Texas Essential Knowledge and Skills for Economics with Emphasis on the Free Enterprise System and Its Benefits); or

(B) four levels of the same language in a language other than English by selecting courses in accordance with Chapter 114 of this title; or

(C) two levels of the same language in a language other than English and two levels of a different language in a language other than English by selecting courses in accordance with Chapter 114 of this title; or

(D) four levels of American sign language by selecting courses in accordance with Chapter 114 of this title; or

(E) a coherent sequence of four credits by selecting courses from one or two categories or disciplines in fine arts from Chapter 117 of this title or innovative courses approved by the commissioner; or

(F) four English elective credits by selecting from the following:

(i) English IV; or

(ii) Independent Study in English; or

(iii) Literary Genres; or

(iv) Creative Writing; or

(v) Research and Technical Writing; or

(vi) Humanities; or

(vii) Communication Applications; or

(viii) AP English Literature and Composition; or

(ix) IB Language Studies A1 Higher Level.

(5) Multidisciplinary studies. A student may earn a multidisciplinary studies endorsement by completing the requirements specified in subsection (e) of this section and:

(A) four advanced courses that prepare a student to enter the workforce successfully or postsecondary education without remediation from within one endorsement area or among endorsement areas that are not in a coherent sequence; or

(B) four credits in each of the four foundation subject areas to include English IV and chemistry and/or physics; or

(C) four credits in Advanced Placement, International Baccalaureate, or dual credit selected from English, mathematics, science, social studies, economics, languages other than English, or fine arts.

(g) A course completed as part of the set of four courses needed to satisfy an endorsement requirement may also satisfy a requirement under §74.12(b) and (c) of this title, including an elective requirement.

Source: The provisions of this §74.13 adopted to be effective July 8, 2014, 39 TexReg 5149.

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§74.14. Performance Acknowledgments.

(a) A student may earn a performance acknowledgment on the student's diploma and transcript for outstanding performance in a dual credit course by successfully completing:

(1) at least 12 hours of college academic courses, including those taken for dual credit as part of the Texas core curriculum, and advanced technical credit courses, including locally articulated courses, with a grade of the equivalent of 3.0 or higher on a scale of 4.0; or

(2) an associate degree while in high school.

(b) A student may earn a performance acknowledgment on the student's diploma and transcript for outstanding performance in bilingualism and biliteracy as follows.

(1) A student may earn a performance acknowledgment by demonstrating proficiency in accordance with local school district grading policy in two or more languages by:

(A) completing all English language arts requirements and maintaining a minimum grade point average (GPA) of the equivalent of 80 on a scale of 100; and

(B) satisfying one of the following:

(i) completion of a minimum of three credits in the same language in a language other than English with a minimum GPA of the equivalent of 80 on a scale of 100; or

(ii) demonstrated proficiency in the Texas Essential Knowledge and Skills for Level IV or higher in a language other than English with a minimum GPA of the equivalent of 80 on a scale of 100; or

(iii) completion of at least three credits in foundation subject area courses in a language other than English with a minimum GPA of 80 on a scale of 100; or

(iv) demonstrated proficiency in one or more languages other than English through one of the following methods:

(I) a score of 3 or higher on a College Board Advanced Placement examination for a language other than English; or

(II) a score of 4 or higher on an International Baccalaureate examination for a higher-level languages other than English course; or

(III) performance on a national assessment of language proficiency in a language other than English of at least Intermediate High or its equivalent.

(2) In addition to meeting the requirements of paragraph (1) of this subsection, to earn a performance acknowledgment in bilingualism and biliteracy, an English language learner must also have:

(A) participated in and met the exit criteria for a bilingual or English as a second language (ESL) program; and

(B) scored at the Advanced High level on the Texas English Language Proficiency Assessment System (TELPAS).

(c) A student may earn a performance acknowledgment on the student's diploma and transcript for outstanding performance on a College Board Advanced Placement test or International Baccalaureate examination by earning:

(1) a score of 3 or above on a College Board Advanced Placement examination; or

(2) a score of 4 or above on an International Baccalaureate examination.

(d) A student may earn a performance acknowledgment on the student's diploma and transcript for outstanding performance on the PSAT®, the ACT-PLAN®, the SAT®, or the ACT® by:

(1) earning a score on the Preliminary SAT/National Merit Scholarship Qualifying Test (PSAT/NMSQT®) that qualifies the student for recognition as a commended scholar or higher by the College Board and National Merit Scholarship Corporation, as part of the National Hispanic Recognition Program (NHRP) of the College Board or as part of the National Achievement Scholarship Program of the National Merit Scholarship Corporation;

(2) achieving the college readiness benchmark score on at least two of the four subject tests on the ACT-PLAN® examination;

(3) earning a combined critical reading and mathematics score of at least 1250 on the SAT®; or

(4) earning a composite score on the ACT® examination of 28 (excluding the writing subscore).

(e) A student may earn a performance acknowledgment on the student's diploma and transcript for earning a nationally or internationally recognized business or industry certification or license as follows.

(1) A student may earn a performance acknowledgment with:

(A) performance on an examination or series of examinations sufficient to obtain a nationally or internationally recognized business or industry certification; or

(B) performance on an examination sufficient to obtain a government-required credential to practice a profession.

(2) Nationally or internationally recognized business or industry certification shall be defined as an industry validated credential that complies with knowledge and skills standards promulgated by a nationally or internationally recognized business, industry, professional, or government entity representing a particular profession or occupation that is issued by or endorsed by:

(A) a national or international business, industry, or professional organization;

(B) a state agency or other government entity; or

(C) a state-based industry association.

(3) Certifications or licensures for performance acknowledgements shall:

(A) be age appropriate for high school students;

(B) represent a student's substantial course of study and/or end-of-program knowledge and skills;

(C) include an industry recognized examination or series of examinations, an industry validated skill test, or demonstrated proficiency through documented, supervised field experience; and

(D) represent substantial knowledge and multiple skills needed for successful entry into a high-skill occupation.

Source: The provisions of this §74.14 adopted to be effective July 8, 2014, 39 TexReg 5149