

**Supporting Aspiring Teachers: The Study of Teacher Certification Pathways,
Influencing Factors, and Preservice Baselines to Develop the Certification Pathway
and Program Selection Tool**

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Dedication

To my parents, Kishore and Sonal Shah.

The two of you believed in me, before I believed in myself. Thank you for every ounce of love, sacrifice, and confidence you poured into me. I am proud to be your daughter.

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My deepest gratitude everyone who supported me in this doctoral journey. I am honored to have each of you in my life. Thank you for the continuous encouragement, support, and love.

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Abstract

Background: There is a severe shortage of teachers across the United States, and teacher certification programs are not producing enough teachers. In 2018, Educator Preparation Programs (EPPs) saw a 33% decline in enrollment, and only 40% of those who enrolled, earned their teaching certificate. **Purpose:** This study focuses on understanding the three pathways to earning a teaching certificate, the influencing factors that aspiring teachers consider when choosing an EPP, and how certification seekers' pre-service baselines (knowledge, experiences, dispositions, and goals) support them in their certification journey. **Methods:** A survey was administered to individuals enrolled in a Texas EPP between 2018 and 2022. The survey asked participants to share their certification pathway of choice, the influencing factors that led them to choose it, and the factors that led to the completion or withdrawal from their certification program. Additional survey questions were asked to understand participants' pre-service content knowledge, professional experiences, and goals. Descriptive statistics and ANOVA were used to determine the influencing factors that were significant for each certification pathway. **Results:** The survey yielded 247 results, with 108 from traditional programs, 26 from alternative programs, and 113 from postbaccalaureate. The statistical analysis determined that degree earning-opportunities, program cost, and certification support were the three most important factors affecting choice of a certification program or pathway. Results showed that content knowledge was demonstrated when aspiring teachers passed their content certification exam. Additionally, with respect to professional experience, more aspiring teachers have held direct educational professional roles such as teacher assistant, paraprofessional, or interventionist. Finally, while many future teachers aim to be lifelong

teachers, others have long-term goals of being school administrators, earning additional graduate degrees, or switching to a career outside of education. Ultimately, not all those who enter an EPP complete their program and become a teacher of record, an individual employed by a district as a teacher. The top three reasons aspiring teachers chose not to earn their certification were the rigor of the certification exam, the ability to secure a role as a teacher of record without a certificate, or other employment opportunities within the education field. The data and findings from the survey, were utilized to design the Certification Pathway and Program Selection Tool (CPPS), which supports future teachers in navigating various options and choosing a pathway and program that is the best fit for them.

Keywords: teacher certification, teacher preparation, alternative certification, postbaccalaureate certification, pre-service teachers, educator preparation programs, content knowledge, pedagogical knowledge, dispositions

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Chapter I

Introduction

Introduction

Teacher shortages have been occurring throughout many periods of American history. The most recent being in 2013, when the estimated supply of teachers did not meet the estimated demand. By 2017, the gap between the supply and demand of teachers exceeded 100,000, with an estimate that one in every four teaching positions will remain vacant by 2025 (Sutcher et al., 2016, p. 2).

The United States has over 3.5 million certified teachers (Institute of Education Sciences, 2020), accounting for approximately 10% of the college-educated workforce. Due to the high demand for teachers since the Great Recession, the United States has created multiple pathways into the teaching profession. Additionally, an increase in the demand for teachers has led to the development of nontraditional certification pathways (Darling-Hammond et al., 2002, p. 287). As a result, teacher certification pathways were designed to prepare aspiring teachers from various professional backgrounds.

Before the 1980s, if someone wanted to become a teacher – there was only one route into the profession. This process requires earning a bachelor's degree in education, completing a practicum or period of student teaching, taking state certification exams, earning an undergraduate degree, and applying for a teaching certificate. Today, there are three pathways to becoming a certified teacher in the United States. The traditional pathway and two nontraditional pathways —the alternative and the postbaccalaureate.

Certification Pathways

Traditional Certification

The traditional certification process is a pathway that consists of earning a bachelor's degree and a teaching certificate simultaneously (Uriegas et al., 2014, p. 1). In Texas, during the 2019–2020 school year, 5,235 or 34.8% of newly certified teachers were certified by the traditional pathway (Smith, 2021, Table 1).

Alternative Certification

Alternative certification is one of two nontraditional pathways into the teaching profession. Alternative certification programs are meant for individuals with a bachelor's degree who only want to earn a teaching certificate (Mikulecky et al., 2004, p. 1). In Texas, during the 2019–2020 school year, 9,230 or 61.36% of newly certified teachers earned their teaching certificate from an alternative certification program (Smith, 2021, Table 1).

Postbaccalaureate Certification

A postbaccalaureate certification is another nontraditional pathway toward earning a teaching certificate. Many postbaccalaureate programs consist of earning a Master's degree and a teaching certificate. For example, in Texas, during the 2019–2020 academic school year, 577 or 3.84% of newly certified teachers earned their certificate through a postbaccalaureate program (Smith, 2020, Table 1).

Figure 1 shows the twenty largest EPPs in Texas, based on the number of teachers hired by Texas public or charter school districts in the 2018–2019 school year (Texas Education Agency [TEA], 2019c). It is important to note that all twenty offer an

alternative certification pathway towards certification. In addition, twelve of the twenty offer multiple pathways, alternative, postbaccalaureate, and traditional.

Figure 1

Largest Texas EPP by Enrollment—2018–2019

20 Largest EPPs in Texas, based on Enrollment during the 2018-2019 School Year

Certificaiton Program	# teachers	Certification Pathway Offered		
		Traditional	Postbacc	Alternative
A+ Texas Teachers	15821			✓
IteachTEXAS	3618			✓
Lamar University	2655	✓	✓	✓
University of North Texas	1409	✓	✓	✓
REG 04 Education Service Center	1395			✓
Web-Centric Alternative Cert Program	1224			✓
Texas State University	1219	✓	✓	✓
Education Career Alternatives Program	1099			✓
Stephen F Austin State University	1098	✓	✓	✓
Texas A&M University - Commerce	1072	✓	✓	✓
University of Texas - Arlington	1033	✓	✓	✓
Sam Houston State University	1028	✓	✓	✓
Texas A&M University	1013	✓	✓	✓
University of Texas - Rio Grande Valley	883	✓	✓	✓
ACT-Houston	852			✓
Texas Tech University	821	✓	✓	✓
University of Texas - San Antonio	776	✓	✓	✓
TeacherBuilder.com	752			✓
University of Houston	700	✓	✓	✓
ACT-San Antonio	691			✓
		12	12	20

Note. Postbacc = postbaccalaureate. Adapted from *Educator Preparation Programs (EPPs) in Texas* (<https://tea-texas.maps.arcgis.com/apps/opsdashboard/index.html#/8fdeed6e29b741ba8bac151ac023186d>).

Problem of Practice

The problem of practice this study aimed to answer is how aspiring teachers decide on the best-fit certification pathway and program for themselves. All three certification pathways have different entry pre-requisites, program requirements, completion timelines, and costs. However, an aspiring teacher's priorities, knowledge,

skills, experiences, and goals also impact the best certification pathway for that individual. (Walsh & Jacobs, 2007)

This research study aims to determine the most important factors for each certification pathway and the knowledge, experiences and skills, and goals that align to being successful in each pathway. As a consequence of this research, a tool for aspiring teachers was designed.

There were three parts to the research. First came the examination of the three pathways towards certification —the pathway requirements, enrollment and retention rates, and how aspiring teachers enter the classroom through each pathway. Next, the literature review reviewed seminal and recent literature that focused on the pre-service baselines —knowledge, experiences and skills, dispositions, and goals. Third, a survey was executed to individuals enrolled in a Texas-based EPP between 2018 and 2020. The data collected from that survey was then analyzed using descriptive and group comparison statistics to determine what respondents considered to be the most important influencing factors by pathway and the level of content knowledge they had required to be successful in each pathway. Next, professional work experiences were analyzed, by pathway. Finally, short-term and long-term goals were analyzed, by pathway to determine if goals had an impact on which pathway an aspiring teacher might choose.

Impact of Work

The work of certifying and building a pipeline of teachers is imperative as the gap between the supply and demand continues to grow. Today, only 40% of aspiring teachers enroll in teacher preparation programs, complete the program, and earn their teaching certificate. That is a loss of 60% of career professionals who aspired to become a teacher

but ultimately do not. This research and the tool it created are designed to ensure that aspiring teachers can make fully informed decisions when choosing their certification pathway, thus increasing the rate of people enrolling in EPPs, completing the program, and earning their teaching certificates.

National Context

In the United States, individual states have the power to determine the policies and regulations on how a teacher is certified. Before the 1980s, earning a teaching certificate was straightforward, and it required the aspiring teacher to get an undergraduate degree in education (Walsh & Jacobs, 2007). The traditional certification route was the only way to enter the teaching profession for decades. That changed when the alternative certification route became an option for states. According to the National Center for Education Information, “in the years pre-1984, 97% of teachers entered the teaching profession after graduating from a traditional university-based program” (Etheredge, 2015, p. 24).

In 1984, New Jersey was the first state to create an alternative teacher certification pathway. At first, alternative programs were used as a temporary pathway to fill teaching vacancies with lesser-qualified individuals, especially when no qualified teacher could be found (Baines, 2010). The alternative certification pathway was designed to “expedite entry into the public-school classroom for well-educated individuals who were eager to teach but unwilling (or could not afford) to spend a great deal of time and money in education coursework” (Walsh & Jacobs, 2007, p. 17). Since 1984, the popularity of teachers earning their certification through an alternative or postbaccalaureate pathway has increased dramatically, with “4 out of 10 new hires coming from [nontraditional]

routes and the proportion of new hires between 2005 and 2010 coming from undergraduate teacher education [traditional certification], programs dropped to 50%” (Etheredge, 2015, p. 1).

State and Regional Context

Texas Context

The State Board governs EPPs in Texas for Educator Certification (SBEC) and the Texas Education Agency (TEA). In Texas, the Texas Administrative Code (TAC) Title 19, Part 7 sets the guidelines for the State Board of Educator Certification (SBEC). The SBEC determines the standards and the required exams for a certified teacher (State of Texas Legislative Budget Board [Texas LBB], 2017). As a result, Texas is the leader in teacher preparation, producing the largest number of teachers in the United States.

Table 1, shows the number of Texas EPPs between 2010 and 2019 by certification pathway (U.S. Department of Education, n.d.).

Table 1

Number of Texas Educator Preparation Program Providers by Type—2011–2019

Academic year	Traditional	Alternative	Postbaccalaureate	Total
2010–11	69	80	63	212
2011–12	72	73	63	208
2012–13	73	60	79	212
2013–14	73	60	79	212
2014–15	73	56	68	197
2015–16	75	56	22	153
2016–17	75	48	41	154
2017–18	77	43	59	179
2018–19	77	41	64	182

Note. Data from *Title II Higher Education Act: National teacher preparation data—*

Texas, by U.S. Department of Education, n.d., retrieved February 1, 2022

(<https://title2.ed.gov/Public/Report/StateHome.aspx>).

After New Jersey and California, Texas was the next state to implement a nontraditional pathway to earning a teaching certificate. According to the Texas State Board of Education, in Texas, “alternative routes for educator preparation have produced the largest number of teachers since 2004” (Texas LBB, 2017). Table 2 below shows the number of newly certified teachers by certification route between 2014 and 2020. The number of traditionally certified teachers declines as alternative increases, and postbaccalaureate decreases.

Table 2

Newly Certified Teachers in Texas by Pathway—2014–15 to 2019–20

School year	Pathway					
	Traditional		Alternative		Postbaccalaureate	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
2014–15	8,106	38.72	11,765	56.20	1,063	5.08
2015–16	7,701	36.89	12,209	58.49	965	4.62
2016–17	7,371	34.17	13,269	61.52	930	4.31
2017–18	6,967	36.58	11,412	59.91	668	3.51
2018–19	6,588	35.43	11,357	61.08	650	3.50
2019–20	5,235	34.80	9,230	61.36	577	3.84

Note. Data from *Newly Certified Teacher Demographics by Preparation Route 2014-15*

through 2019-20, by Texas Education Agency, 2021, retrieved November 2021

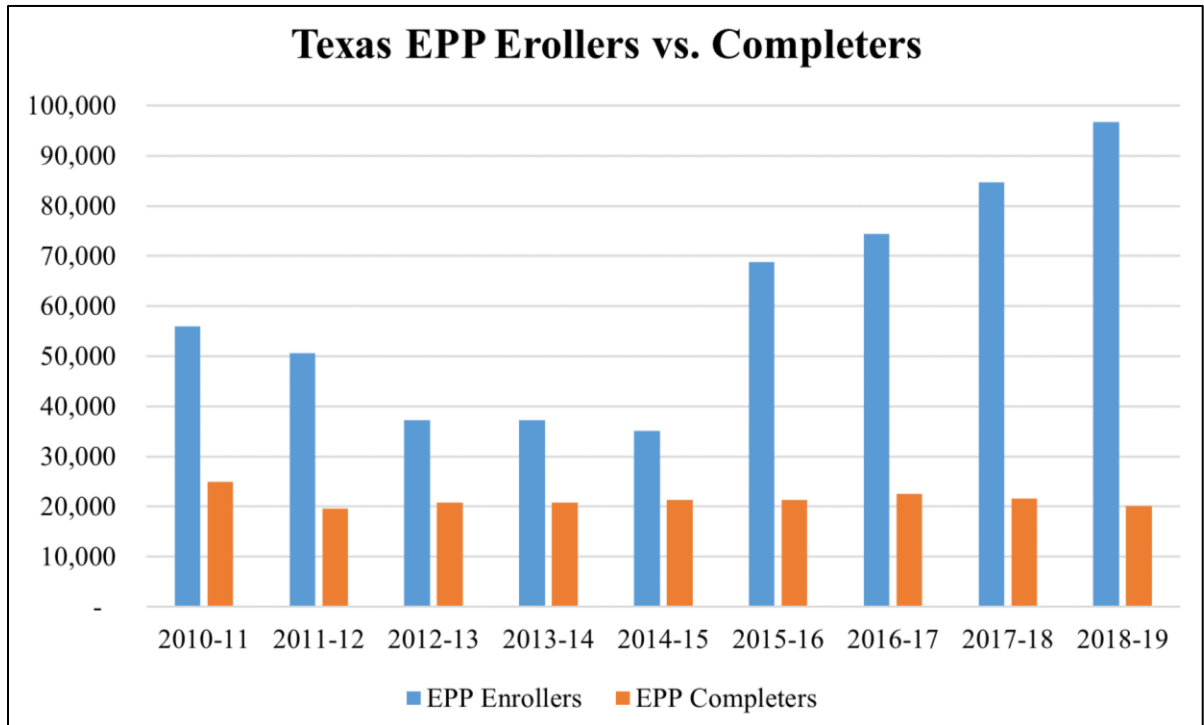
(<https://tea.texas.gov/sites/default/files/newly-certified-teacher-demographics-by-preparation-route-tgs210603.pdf>).

Title II of the Higher Education Act requires states to share data focused on EPP enrollments, those who complete the program, and the types of programs. “An enrolled student is defined as a student who has been admitted to a teacher preparation program but who has not yet completed the program in the academic year being reported” (U.S. Department of Education Office of Postsecondary Education, 2014, p. 11). At the same time, a completer is an individual who has completed the teacher preparation program

and is no longer counted as an enrolled student. While some pipelines are long, the number of enrollers and completers over time do not match. Figure 2 shows the year-over-year differences between Texas EPP enrollers and completers.

Figure 2

Candidates Enrolling and Completing EPP Pathways to Certification—2010–2019



Note. The number of enrollees who have failed to complete preparation has been rising since 2015. EPP, educator preparation program. Adapted from *Title II Higher Education Act—Texas*, by U.S. Department of Education, 2022, (<https://title2.ed.gov/Public/Report/StateHome.aspx?si=48>).

Houston Context

Houston is the largest city in Texas and the fourth-largest city in the United States. “The Houston region is home to nearly seven million residents” and hosts Texas’s largest public school district, the Houston Independent School District (Greater Houston Partnership, 2020). Additionally, Houston is home to some of the state’s largest Charter

Management Organizations (CMOs). With “60 school districts, dozens of state-approved charter schools, and roughly 200 private schools” across the city, there is a high demand for certified teachers in Houston, and therefore there are initiatives to build the pipeline of future educators (Greater Houston Partnership, 2022). Additionally, Houston is home to more than 18 EPPs, all offering one or more pathways to earning a teaching certificate (Texas Education Agency [TEA], n.d.-b). The challenge for prospective educators is to make an informed decision about the pathway to certification they choose.

Research Questions

This research focuses on this central question: how does an aspiring teacher decide the best-fit route to their teaching certification? The research questions to respond to this problem will focus on the postbaccalaureate and alternative certification routes. Three research questions are of interest:

1. What are the influencing factors that aspiring teachers consider when choosing a certification pathway and program?
2. What pre-service baselines (knowledge, experiences and skills, dispositions, and future goals) are held by aspiring teachers?
3. Why does an aspiring teacher choose not to earn a teaching certificate?

The findings from this research study were then used to develop the Certification Pathway and Program Support (CPPS) tool, a flow diagram designed to support aspiring teachers in determining which certification pathway and program is the best fit for them.

Chapter II

Literature Review

Introduction

The three certification pathways attract aspiring teachers with different demographic characteristics. These aspiring teachers join a certification program with some form of the knowledge, experiences, skills, dispositions, and goals for their professional careers. These will be called “pre-service baselines,” as they are the tools that an aspiring teacher may have prior to enrolling in an EPP. This literature review aims to understand these baselines and how they impact future teachers' success in a certification program.

This literature review will first review the three pathways into the teaching profession: each pathway's program requirements, enrollment, and retention numbers, and how an aspiring teacher is certified. Then the literature review will focus research on each part of the pre-service baselines —knowledge, experiences and skills, dispositions, and goals —to understand the impact baselines have on the success of a pre-service teacher

Certification Pathways

Traditional Certification

The traditional method of certification allows an aspiring teacher to earn their teaching certificate and their undergraduate degree simultaneously. Aspiring teachers in the traditional pathway receive all their instruction before becoming a teacher of record. They are most likely required to complete student teaching and observation hours before earning their certificate (Constantine et al., 2009, p. 16). In Texas, traditional EPPs are

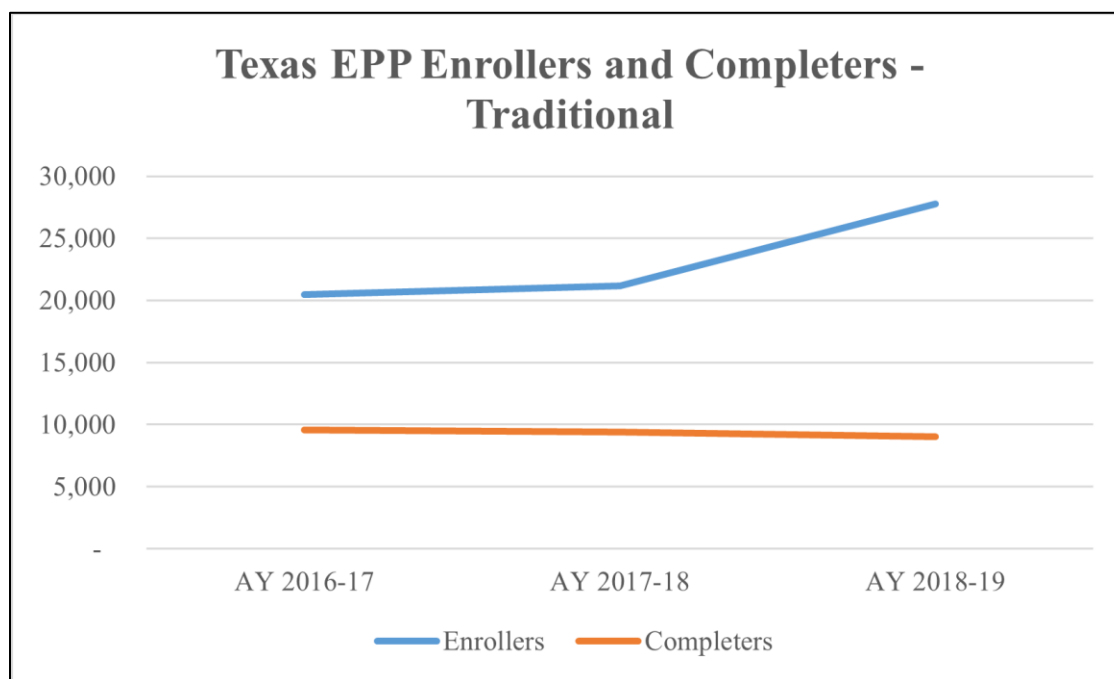
within Institutions of Higher Education – a college or university (State Board for Educator Certification, n.d.). Nationally, all 50 states have traditional programs for aspiring teachers to earn their undergraduate and teaching certificate (U.S. Department of Education, n.d., Texas section). As of 2019, there were 67 traditional EPPs across Texas (Texas Education Agency [TEA], 2019b, 2019 Teacher Survey Data section).

Before 1984, 97% of teachers were certified through a traditional method. Ever since nontraditional pathways were introduced, enrollment in traditional certification programs has steadily declined (Partelow, 2019, p. 7). Figure 3 below shows the gap between the number of traditional EPP enrollers and completers in Texas. There has been a steady increase in the number of enrollers between 2016 to 2019. However, the number of aspiring teachers who both completed the program and earned their certificates declined. Figure 3 shows that approximately 50% of traditional EPP enrollers complete the program and earn their teaching certificate (U.S. Department of Education, n.d.). In this figure, completer represents individuals who complete the requirements of the EPP and to earn their teaching certificate.

Figure 3

Comparing Texas Educator Preparation Program Enrollees and Completers—

Traditional Pathway



Note. AY = academic year. Adapted from *Title II Higher Education Act—Texas, 2022*

(<https://title2.ed.gov/Public/Report/StateHome.aspx?si=48>).

Alternative Certification

The alternative certification pathway was designed to fulfill a teacher shortage across the United States, with the idea that an alternative teaching certificate could be provided to highly educated career professionals who aspired to become a teacher.

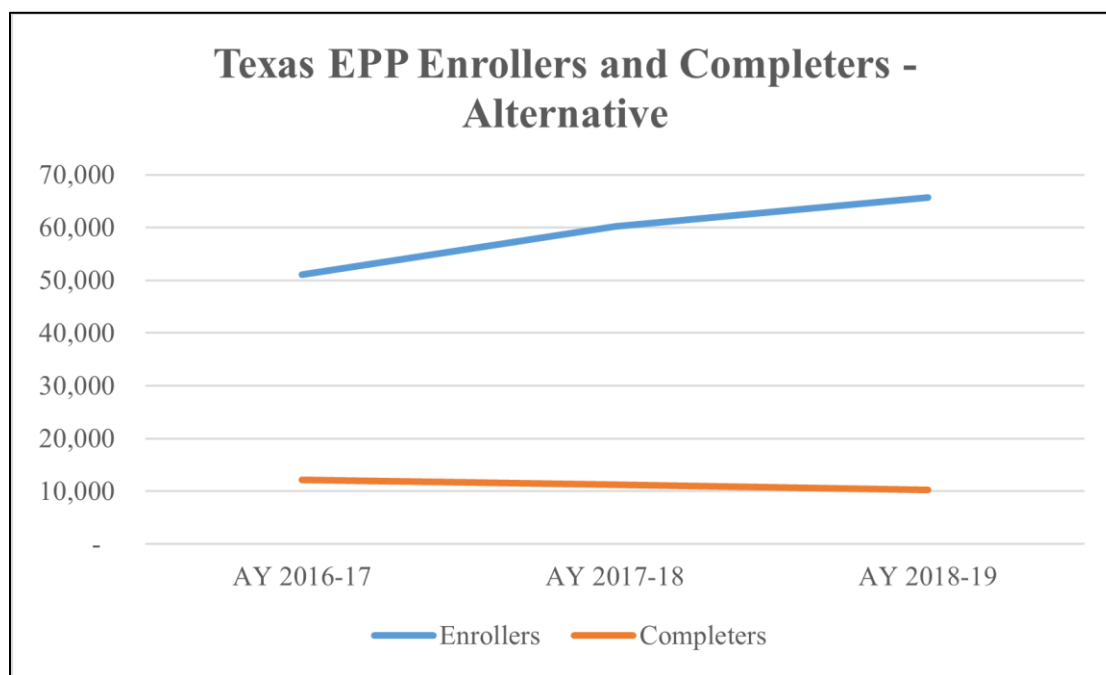
Aspiring teachers must hold an undergraduate degree to enroll in an alternative EPP. In this pathway, aspiring teachers may begin teaching as a teacher of record while they are still enrolled in an EPP, working on coursework, and finishing up certification requirements. In Texas, alternative certification programs can be a part of an Institution of Higher Education, Local Education Agencies (LEAs), education service centers,

community colleges, non-profit organizations, and private entities (Texas Education Agency [TEA], 2021a). Nationally, as of 2019, there were 34 states with alternative certification programs (U.S. Department of Education, n.d.). In addition, there were 75 alternative certification programs in Texas in 2019 (TEA, 2019b, 2019 Teacher Survey Data section).

The alternative certification route, established in 1984, was designed to mitigate the teacher shortage and get individuals with a bachelor's degree interested in teaching fast-tracked into the teacher force. As the alternative pathway gained popularity, enrollment in an alternative pathway versus a traditional pathway increased. Texas has the highest number of aspiring teachers enrolled in an alternative program (Partelow, 2019). Figure 4 below shows the gap between the number of enrollers and completers in Texas alternative EPPs. Like the traditional pathway, the gap between enrollers and completers is wide. However, alternative programs attract and enroll more than double the number of aspiring teachers who choose the traditional program, with 27,752 traditionally certified and 65,739 alternatively certified in the 2018-2019 school year. While the alternative pathway enrolls many more aspiring teachers, both pathways produce a similar number of certified teachers, also known as completers, with 9,050 traditionally certified and 10,200 alternatively certified in the same school year (U.S. Department of Education, n.d.).

Figure 4

*Comparing Texas Educator Preparation Program Enrollees and Completers—
Alternative Pathway*



Note. AY = academic year. Adapted from *Title II Higher Education Act—Texas*, 2022 (<https://title2.ed.gov/Public/Report/StateHome.aspx?si=48>).

Postbaccalaureate Certification

The postbaccalaureate certification pathway is the nontraditional pathway into the teacher force, that has been in existence since the traditional pathway. In this pathway, “teacher training [is] offered by colleges and universities for individuals who already hold a baccalaureate degree in which individuals may receive a master’s degree in addition to teacher certification” (Texas LBB, 2017). In Texas, postbaccalaureate programs are only offered by accredited higher education institutions. Nationally, thirty-three states offer a postbaccalaureate pathway to earning a teaching certificate (U.S.

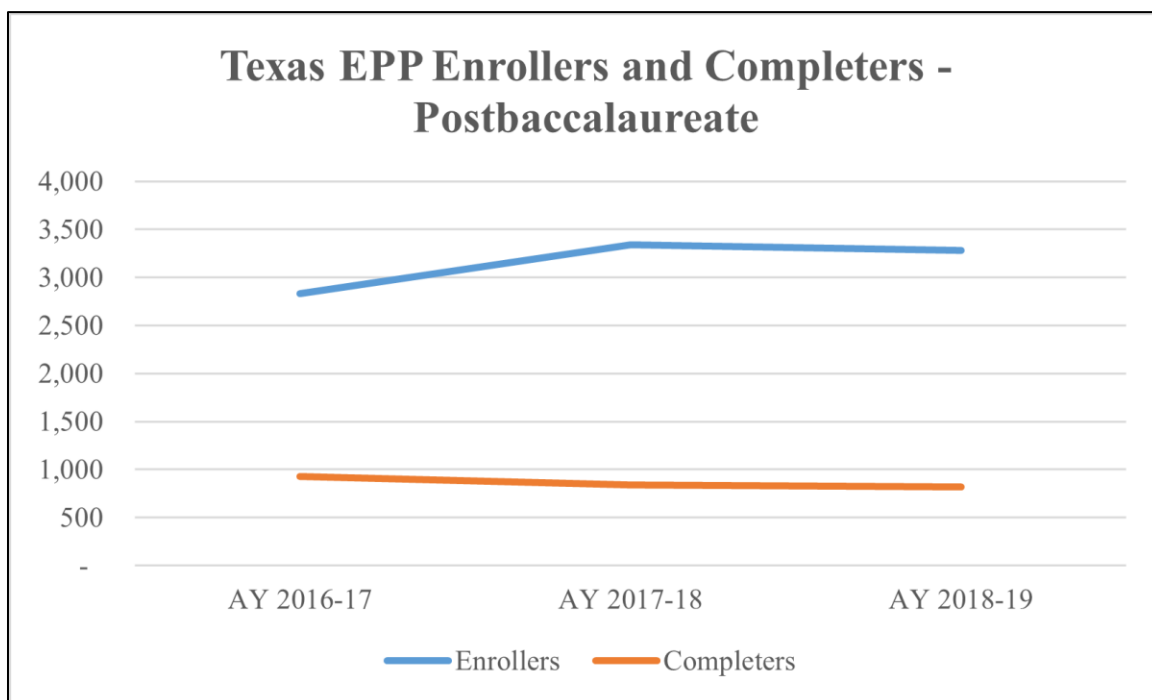
Department of Education, n.d.). In Texas, 39 institutions offer this certification pathway (TEA, 2019b, 2019 Teacher Survey Data section).

Postbaccalaureate programs often have the lowest enrollment due to rigor, cost, and time to complete the program – as most postbaccalaureate programs are dual-missioned where aspiring teachers can earn a teaching certificate and graduate degree.

Figure 5 below outlines the enrollment and completion numbers for Texas postbaccalaureate programs. While there is still a large gap between enrollers and completers, the number of enrollers is significantly smaller compared to the other pathways, at 3,280 in 2019.

Figure 5

*Comparing Texas Educator Preparation Program Enrollees and Completers—
Postbaccalaureate Pathway*



Note. AY = academic year. Adapted from *Title II Higher Education Act—Texas*, 2022

(<https://title2.ed.gov/Public/Report/StateHome.aspx?si=48>).

All in all, enrollment numbers in traditional and alternative pathways are increasing. However, Table 3 shows the number of completers is significantly less than enrollers, and is also declining, in all three pathways between 2016 and 2019.

Table 3

Texas Enrollers and Completers by Pathway

Academic Year	Traditional		Alternative		Postbaccalaureate	
	Enroller	Completer	Enroller	Completer	Enroller	Completer
AY 2016-17	20,457	9,569	51,048	12,094	2,835	926
AY 2017-18	21,151	9,422	60,229	11,287	3,342	840
AY 2018-19	27,752	9,050	65,739	10,200	3,280	819

Note. AY = academic year. Adapted from *Title II Higher Education Act—Texas, 2022*

(<https://title2.ed.gov/Public/Report/StateHome.aspx?si=48>).

Professional Knowledge

Professional knowledge is defined as “demonstrating an understanding of the curriculum, subject content, pedagogical knowledge, and the needs of students by providing relevant learning experiences” (Georgia Department of Education, 2021). A teacher's professional knowledge is broken down into two types of knowledge – content knowledge and pedagogical knowledge. “Both types of knowledge have been shown to affect teachers’ instructional practice and student learning” (Kleickmann et al., 2013, p. 90). Therefore, all teachers must demonstrate their content and pedagogical knowledge throughout their careers in education

Content Knowledge

Content knowledge is defined as “the disciplinary understanding of the subject [being] taught... [because] knowledge of subject matter is a prerequisite for effective classroom instruction.” Aspiring teachers need to demonstrate adequate content

knowledge before enrolling in an EPP and earning their teaching certificate (Georgia Department of Education, 2018). Researchers have identified three potential sources for an aspiring teacher's content knowledge. These are a teachers' own K--12 learning and experience, a teacher's learning and professional development experience, and teaching experience (Kleickmann et al., 2013). Strong content knowledge is imperative as "research has found that when a teacher's subject matter knowledge is insecure, [their] ability to give appropriate and effective explanations in the classroom is limited, rendering them ineffective" (Georgia Department of Education, 2018, p. 1). While many EPPs support their aspiring teachers in building up their content knowledge, EPPs must assess their pre-service teachers to see if they have a minimum amount of content knowledge and the ability to build their content knowledge to be successful in the classroom.

Every state has different requirements for aspiring teachers enrolling in an EPP. In the United States, more than 40 states utilize the *Praxis*® tests to certify new teachers. Of those 40 states, 24 require the *Praxis* Core Academic Skills for Educators (Core) exam as a pre-requisite exam for all aspiring teachers. This assessment "measures academic skills in reading, writing, and mathematics...[and] was designed to provide comprehensive assessments that measure the skills and content knowledge of candidates entering teacher preparation programs" (Educational Testing Service [ETS], 2021).

Texas does not utilize the *Praxis* exams for teacher certification and does not mandate an entrance exam for EPPs. Texas assesses aspiring teachers' content knowledge, specifically those enrolling in a nontraditional program, by reviewing their undergraduate transcripts. To enroll in any nontraditional EPP, all prospective teachers

need an undergraduate grade point average of at least 2.5 (Texas Administrative Code [TAC], 2020). By reviewing the aspiring teacher's undergraduate transcripts, EPPs can determine the course requirements and subject-specific credit hours that align with the intended certification type. For instance, aspiring math or science teachers must have at least 15 hours of relevant math or science coursework. Whereas for aspiring humanities teachers, 12 hours of relevant content coursework is required (TEACH.org, 2020). For individuals who do not have the required credit hours or have a GPA lower than a 2.5, some EPPs will admit them into their program after taking the Texas Pre-Admission Content Test (PACT). This exam is required as a way to demonstrate content knowledge, prior to being enrolled in an EPP (Texas Educator Certification Examination Program, n.d.). While these are the state of Texas's requirements, coursework outcomes are not always indicative of strong content knowledge or their ability to pass the state-mandated content exam.

Lee S. Shulman is a seminal thinker, researcher, and professor emeritus at Stanford University. His research focused on the study of teaching and assessments of teaching. It was Shulman's research in 1986 that sparked extensive research on teachers' professional knowledge. Since then, most researchers agree that content knowledge is "regarded as a key target and lever of educational reform" (Shulman, 1986, p. 6). Researchers agree that a teacher's content knowledge is imperative to student success. However, there is limited research on assessing a prospective teacher's content knowledge, particularly before enrolling in an EPP.

Researchers Casey and Childs (2007) discuss in their research study, *Teacher Education Program Admission Criteria and What Beginning Teachers Need to Know to*

Be Successful Teachers, the factors beyond the GPA that serve as indicators of strong aspiring teachers. Casey and Childs (2007) and DeLuca (2018) found that the strongest indicators include written statements, interviews, reference letters, standardized test results, and performance in prerequisite education. These, along with state GPA requirements, are most often used by EPPs in admission decisions when considering an aspiring candidate's content knowledge.

Pedagogical Knowledge

Pedagogy is defined as “the art and science of teaching, incorporating instructional methods that are developed from scientifically-based research” (19 Tex. Admin. Code § 228.2 (2016)). Shulman (1986) states that pedagogical knowledge involves “broad principles and strategies of classroom management and organization that appear to transcend subject matter.” Linda Darling-Hammond (2006) defines pedagogical knowledge as the “understanding and skills [necessary] for teaching . . . and [for constructing and managing] a productive classroom” (Darling-Hammond, 2006). General pedagogical knowledge also consists of knowledge about “learners and learning, assessment, and educational context and purposes” (Sothayapetch, Lavonen, & Juuti, 2013). Morine-Deshimer and Kent (1999) divide pedagogical knowledge into three parts: instructional model (teaching method), classroom management, and classroom communication. They simply define pedagogical knowledge as the “knowledge of learners and learning” (2006).

In Texas, aspiring teachers do not need to demonstrate pedagogical knowledge before being admitted into an EPP, as this is knowledge developed while undergoing EPP

coursework. So, in Texas, pedagogical knowledge is assessed on the TExES Pedagogy and Professional Responsibilities (PPR) exam. The PPR exam focuses on four domains:

- Designing Instruction and Assessment to Promote Student Learning
- Creating a Positive, Productive Classroom Environment
- Implementing Effective, Responsive Instruction and Assessment
- Fulfilling Professional Roles and Responsibilities

Passing the PPR exam is how teaching candidates demonstrate proficiency in pedagogical knowledge. Like content knowledge, pedagogical knowledge grows and strengthens in time and with practice.

Some researchers believe there are ways to assess an aspiring teacher's pedagogical and teaching beliefs. For example, Sothayapetch, Lavonen, and Juuti created an interview protocol to assess aspiring teachers' content and pedagogical knowledge. They recommend the following questions to assess a teacher's pedagogical knowledge (Sothayapetch et al., 2013):

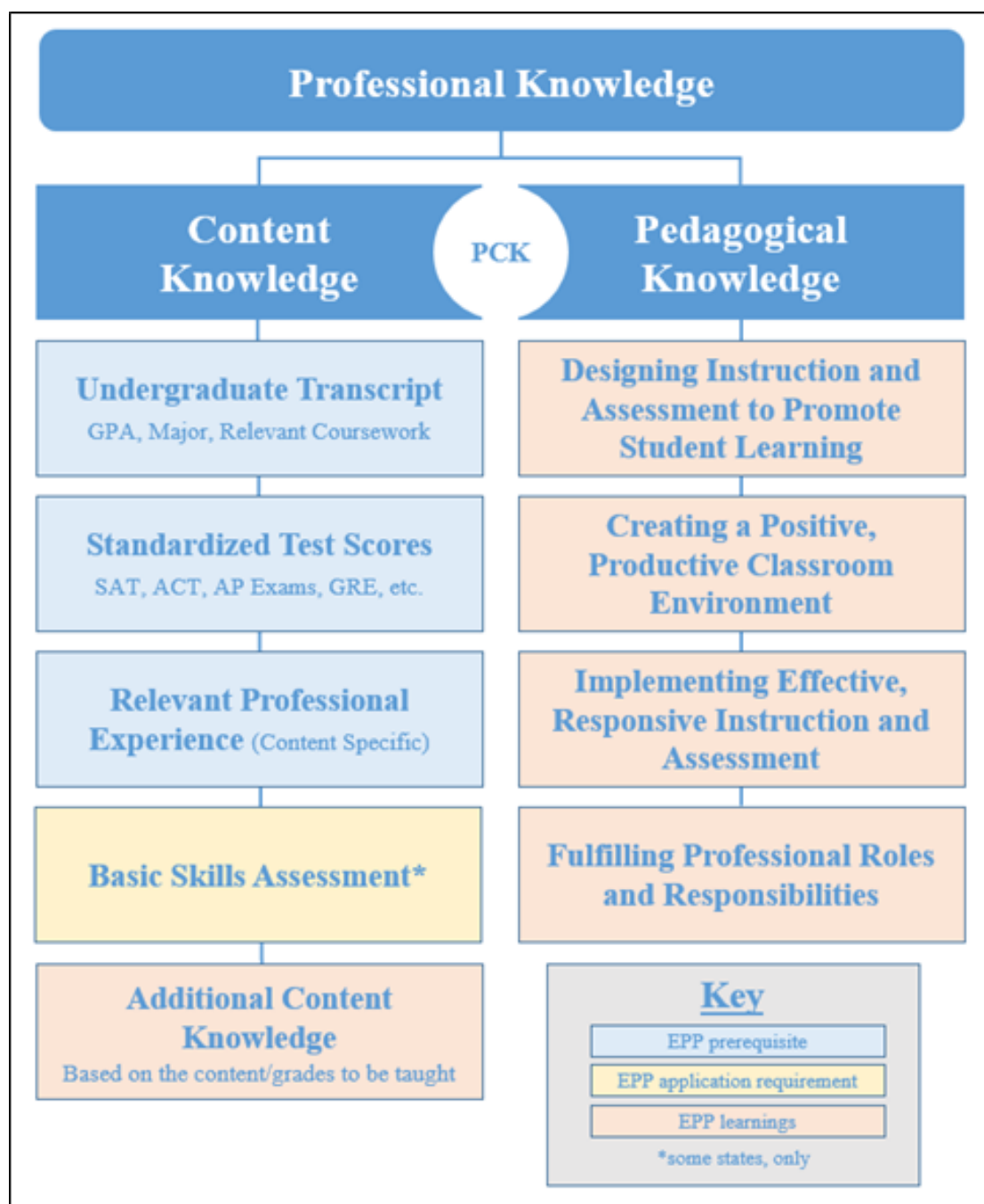
- What is the most important thing in your teaching?
- How do you manage student discipline problems?
- What do you need the students to learn. . . ? Is it the right concept, good characteristics, [content-specific] skills, or all of these together?
- In your opinion, is the [content] curriculum important for your career? How?
- [How do you envision] the relationship between you and students? And among the students?
- What learning materials [will you use] besides textbooks?

While some of these questions may be too challenging for pre-service or novice teachers, they allow EPPs to understand an aspiring teacher's pedagogical beliefs and knowledge.

Pedagogical Content Knowledge

For years, content and pedagogical knowledge were a basic requirement for educators. However, as seminal thinkers continued their research, they determined another aspect of professional knowledge imperative to effective teaching —pedagogical content knowledge. Introduced by Lee Shulman in 1986, pedagogical content knowledge “blends content and effective instructional strategies for teaching particular subject matter, including appropriate representations and explanations” (Shulman, 1986). Pedagogical content knowledge differs from content knowledge and is “the knowledge needed to make the subject matter accessible to students” (Shulman, 1986). While pedagogical content knowledge is imperative for teachers, and assessed on the state certification exams, it is a form of knowledge that takes time to develop and is often not assessed in aspiring or novice teachers. Therefore, pedagogical content knowledge is not a requirement for future teachers, prior to EPP enrollment.

Figure 6 outlines the requirements for content knowledge and pedagogical knowledge that a pre-service teacher must hold before enrolling in an EPP, develop while enrolled in an EPP, and demonstrate on certification exams to earn a teaching certificate.

Figure 6*Professional Knowledge Requirements of Novice Teachers*

Note. Professional knowledge is both knowledge of content and knowledge of teaching's duties and how to execute them. PCK = pedagogical content knowledge; GPA, grade point average; AP, advanced placement; EPP, educator preparation program

Professional Experiences and Skills

As nontraditional certification pathways grow, more aspiring teachers are choosing to become teachers after years of professional work experience. Professional experience in the education field is defined as “experience that [has] occurred through full-time employment in an education-related field or in a field in which the person intends to be licensed (Indiana State Board of Education, 2013, p. 5). The types of experiences that a candidate can bring can benefit a prospective teacher’s training and success in the classroom: direct K–12 experiences, K–12 adjacent experiences, social support positions, and roles that do not involve work with people.

Direct K–12 experiences can be professional experiences, shared on a resume, as a school-based professional. These roles involve working in a K–12 classroom such as, co-teacher, teaching assistant, and paraprofessional. School-based professional roles do not require a teaching certificate but are roles that require working with students in the classroom. K–12 adjacent experiences can also be school-based roles, but ones that do not work in the classroom daily, such as – secretary, office aid or clerk, or school nurse. K–12 adjacent experiences can also be proximal experiences outside of the K–12 setting, such as working in a daycare, serving as a nanny or babysitter, camp counselor, tutor, or working for an Institution of Higher Education. Finally, social support experiences can be a nonprofit worker, a counselor, a social worker, or other vocations that require customer service, working in teams, and working along the lines of differences.

There are no national or state prerequisites for the skills or experiences a prospective teacher may need to be enrolled or successful in a certification program.

When applying to an EPP, an aspiring educator's professional skills and experiences are often demonstrated on their resume, shared on an application, or discussed during an interview. However, EPPs may look for aspiring teacher candidates who have had direct or adjacent education experiences in their careers.

While enrolled in an EPP, aspiring teachers gain more experience through coursework and classroom observations. In Texas, aspiring teachers must conduct a minimum of 30 hours of Field-Based Experience. Field-Based Experience hours are defined as "introductory experiences for a classroom teacher certification candidate involving, at the minimum, reflective observation of Early Childhood to Grade 12 (EC–6) students, teachers, and faculty/staff members engaging in educational activities in a school setting" (19 Tex. Admin. Code § 228.2 (2016)).

There is limited research focused on the skills and experiences of pre-service and how they may support their success in an EPP. Most research utilized keywords: pre-service teachers, aspiring teachers, pre-service teaching experience, and teaching skills. However, this did not result in meaningful literature. Most literature focused on content-specific skills such as special education (Roberts et al., 2013), technology, computer skills (Al Hashlamoun & Daouk, 2020), foreign language skills (Chung et al., 2013), or agriculture (Ingram et al., 2018). No research was found about the skills or experiences of aspiring teachers of a general education classroom.

Dispositions

The concept of dispositions was first addressed in 2002 by the National Council for Accreditation of Teacher Education (NCATE). Dispositions is defined as "the values, commitments, and professional ethics that influence behaviors toward students, families,

colleagues, and communities and affect student learning, motivation, and development as well as the educator's professional growth” (Borko et al., 2007, p. 360). The concept of dispositions centers around the belief that all children can learn. Since 2002, the definition of disposition has been debated, revised, and the debate continues.

Borko, Liston, and Whitcomb (2007) believe that EPPs must assess dispositions. They stated that dispositions "help to answer the question of whether teachers are likely to apply the knowledge and skills they learn in teacher preparation programs to their classroom teaching, whether they are likely to do what we taught them to do when we are no longer watching them” (p. 361). The Council for the Accreditation of Educator Preparation (CAEP) has created standards to assess disposition, but Texas had not adopted these standards.

A few tools have been developed for EPPs to utilize and assess an aspiring teacher's disposition. Researchers Choi, Benson, and Shudak, in their article, “Assessment of Teacher Candidate Dispositions Evidence of Reliability and Validity”, created a disposition rubric in which candidates' dispositions are assessed over a three-point scale: below expectations, meet, and exceed expectations. The tool was designed to measure six professional dispositions: “responsibility, respect, integrity, caring/humanity, fairness, and the belief that all students can learn” (Choi et al., 2016, p. 76). The disposition rubric was used with pre-service teachers currently enrolled in an EPP was used for a research study. A university-based professional or a field supervisor conducted disposition scoring twice during a midterm assessment and at the end of the semester (Choi et al., 2016). Their research study showed that the rubric did not accurately assess a candidate's fairness or belief that all students can learn. Choi's research study ultimately

returned to the age-old question, “Is it necessary to assess something as elusive as dispositions?”

Searching the Literature

Multiple sets of queries were conducted to find relevant research for this literature review. First, the following keywords were searched: teacher certification, teacher licensure, teaching residencies, postbaccalaureate teaching, alternative certification programs, teacher preparation programs, and educator preparation programs. Then, after the initial search to find literature that focused on knowledge, experiences and skills, and dispositions of pre-service and experienced teachers, the following keywords were searched: teacher disposition, teacher knowledge, content knowledge, pedagogical knowledge, pedagogical content knowledge, and pre-service teachers. Then, additional rounds of the review were conducted based on the citations from the original articles found. Lastly, several authors were often referenced, such as Linda Darling-Hammond, Angus Shiva Mungal, Lee S. Shulman, the Interstate Teacher Assessment and Support Consortium (InTASC), the National Council for Accreditation of Teacher Education (NCATE), and the National Center for Education Evaluation and Regional Assistance. Therefore, a follow-up search was done to discover more work by those authors and organizations.

Screening for Inclusion

Each article found was reviewed to determine if it was relevant to this study. All research was screened based on the title of the work, the keywords, the authors, and the abstract. The first set of parameters that articles were screened for was the country of focus. Many articles about teacher certification or teacher disposition in other countries

outside the United States were discarded during the initial search. Next, research that was more than a decade old was screened carefully. If the research appeared to be a seminal piece of work, such as the work of Lee S. Shulman or contained necessary research or data relevant to this topic, it was kept.

Much research focused on knowledge was specific to a content area or professional development of experienced teachers. There were a handful of challenges in finding relevant research focused on pre-service teachers' professional experiences and skills.

Initial research led to over 47 resources. An additional level of screening for literature would serve as primary sources. From the 26 initial resources, this literature review focused on only 18 publications; Figure 7 lists the research by author and identifies the focus areas of the research.

Figure 7

Literature Review Research

Author	Content Knowledge	Pedagogical Knowledge	Pedagogical Content Knowledge	Experiences and Skills	Dispositions
Ball, Thames, and Phelps (2008)	✓		✓		
Borko, Liston, and Whitcomb (2007)					✓
Brown (2007)					✓
Choi, Benson, and Shudak (2016)					✓
Cochran (2020)		✓	✓		
Darling-Hammond (2006)		✓			
DeLuca (2012)				✓	✓
Hess (2006)					✓
InTASC (2013)	✓	✓	✓		✓
Johnson, Johnson, and Farenga (2005)					✓
Kind and Chan (2019)	✓	✓	✓		
Kleickmann (2014)	✓				
Kleickmann, et al (2013)	✓		✓		
Morine-Deshimer and Kent (1999)	✓	✓		✓	✓
Osmanoglu (2015)					✓
Shulman (1986)	✓	✓	✓		✓
Stephens (2019)					✓
Stronge and Hinderman (2021)	✓	✓		✓	✓

Conclusion

First, a review of the three certification pathways was conducted. Second, the literature review studied the pre-service baselines held by aspiring teachers – knowledge, experiences and skills, dispositions, and goals. The research was bountiful, but no research was found that connected the pre-service baselines to success in any specific teacher certification pathways. Therefore, third, it was determined that answering Research Questions 1-3, which are focused on the influencing factors and pre-service baselines of aspiring teachers and supporting them as they engaged in one of three certification pathways would broaden the range of the literature and potentially narrow the gap between the percentage enrolling in EPPs and the percentage serving as teachers.

Chapter III

Method

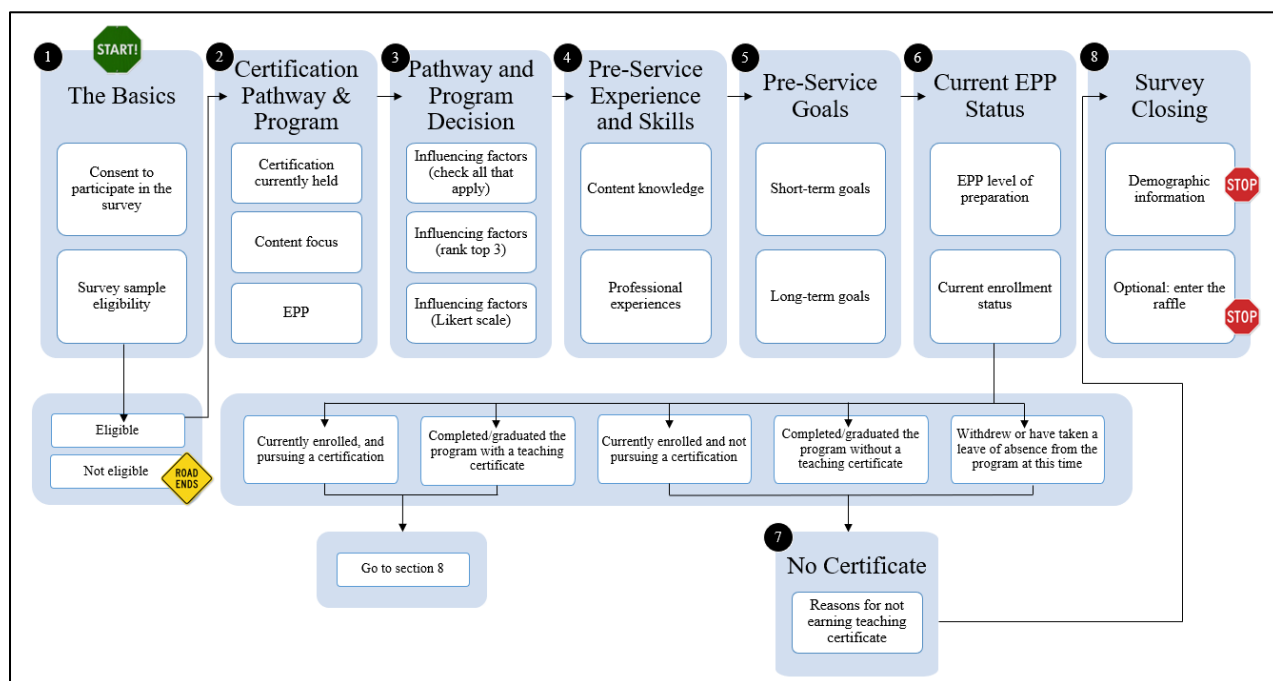
Introduction

It is imperative to understand aspiring teachers' decision-making process when choosing a certification pathway and program. Additionally, it is important to know if an aspiring teacher's pre-service baselines – knowledge, experiences, skills, and influencers – set them up for success in a specific pathway. Therefore, this study uses a survey to determine the decisions and considerations that aspiring teachers took when choosing a certification pathway and the program they ultimately enrolled in.

Figure 8 below shows a design map of the administered survey. It outlines how a participant would navigate through the survey. The survey was rolled out on Monday, February 21, 2022, and closed on Friday, March 7, 2022.

Figure 8

Research Survey Design Map



Note. Design map is divided into eight sections indicated by black circles enclosing numbers. EPP = Educator preparation program.

Additionally, Appendix 1 highlights the recruitment letter sent to all individuals enrolled at a Texas-based EPP. Appendix 2 highlights the recruitment email sent to friends and family supporting the snowball. Appendix 3 shows the language shared on social media, promoting the survey. Lastly, Appendix 4 shows the full survey.

Research Questions

The survey results were analyzed utilizing descriptive statistics and analysis of variance (ANOVA) to answer the following research questions:

1. What are the influencing factors that aspiring teachers consider when choosing a certification pathway and program?
2. What pre-service baselines (knowledge, experiences and skills, dispositions, and future goals) are held by aspiring teachers?
3. Why does an aspiring teacher choose not to earn a teaching certificate?

In the first section of the survey, participants were asked to provide consent to participating in the survey, and a question was asked to determine if they met the sample criteria. Section two asked survey participants if they held a certificate, were a pre-service teacher, or had withdrawn from their EPP without earning a certificate. Additionally, this section asked which subject-area they were certified or pursuing a certification in, and the EPP they were enrolled in.

Research Question 1

The first research question focused on the influencing factors that aspiring teachers consider when choosing a certification pathway and program. Section three of

the survey asked surveyed participants to reflect on the factors that influenced their program and pathway choice. Participants were given nine influencing factors to reflect on. First, participants were asked to check all the influencing factors that applied to them when considering an EPP. Next, participants were asked to choose three of the nine factors that were the most important to them and rank them. Lastly, each influencing factor was presented to participants, and participants were asked to score them on a Likert scale, from not important at all to extremely important.

Research Question 2

The second research question focused on the pre-service baselines of aspiring teachers. Sections 4 and Section 5 of the survey asked surveyed participants about their pre-service knowledge, experiences, and goals. First, participants were asked about their confidence level in teaching the subject area they were hoping. Second, participants were asked about their confidence in passing the official TExES content exam, as this assesses both content and pedagogical knowledge. Third, participants were asked to share the number of official content exams they had to take before they earned a passing score.

Professional experience data was collected by asking participants if they had full-time work experience before enrolling in their EPP and their prior experience in the education field. And aspiring teachers were asked to “check all that apply” from a list of potential roles in educational setting that they may have held in the past.

Pre-service goals of aspiring teachers were shared in an open-ended format. Aspiring teachers were asked to reflect on their professional goals as they chose an EPP. In addition, participants were asked to share their short-term goals and their long-term goals.

Research Question 3

The third research question sought to understand why some aspiring teachers, who enroll in an EPP, ultimately choose not to earn their teaching certificate. Participants who chose their EPP enrollment status as either completed program without earning a teaching certificate, enrolled in the program but not pursuing certification, or withdrew from the certification program, were led to section seven of the survey. In this section, participants were asked why they chose to stop pursuing a teaching certificate.

Sample and Sampling

Two samples of aspiring teachers across Texas completed the survey. The first group was enrolled at a Texas-based EPP between 2018 and 2022. The Texas-based EPP received EPP status from the State Board of Educator Certification (SBEC) in 2014 and has certified hundreds of teachers across Dallas, Fort Worth, Houston, San Antonio, and the Rio Grande Valley. Both the University of Houston's Institutional Review Board and the Texas-based EPP approved the research study.

The second group was a snowball sample. A snowball sample is defined as a "recruitment technique in which research participants are asked to assist researchers in identifying other potential subjects" (Oregon State University, 2012). The University of Houston's Internal Review Board approved this process. The snowball sample process began with posting the survey on social media platforms such as LinkedIn and Facebook. It was also shared with friends and family, requesting that they share the survey with individuals in their networks that met the sample criteria. In addition, as part of the snowball sampling technique, Participants from the Texas-based EPP were encouraged to share the survey link with other potential participants outside of the Texas-based EPP. All

participants, all enrolled in a Texas EPP between 2018 –2022, irrespective of origin group, fell into one of four participant categories:

- Current Certified Teachers (holding a certificate)
- Current Aspiring Teachers (working towards certification)
- Current Uncertified Teachers (not certified, teaching)
- Former Certified Teachers (certified, not teaching)
- Former Aspiring Teachers (not certified, not teaching)

Variables

The independent variables are the certification pathways – traditional, alternative, and postbaccalaureate. The dependent variables are the influencing factors, the confidence in the level of content knowledge, the number of attempts on the content exam, professional experiences, and goals. Additionally, the reasons why an aspiring teacher who enrolled in an EPP but ultimately withdrew will be the last dependent variable analyzed.

Analysis

This research analysis involved utilizing descriptive statistics and an analysis of variances (ANOVA) to determine any differences between certification pathways and influencing factors, pre-service baselines, and why individuals withdraw from their EPP. The analysis aimed to look at the influencing factors that were important to aspiring teachers from each certification pathway and determine if there were significance differences in the means. Additionally, the analysis looked for patterns between pre-service baselines and goals, specific content knowledge in the context of the certification exam, professional experiences, and short- and long-term goals. Ultimately, identifying

any potential patterns may uncover the considerations that aspiring teachers should make when choosing between certification pathways and if specific pre-service baselines are more important in one pathway than another.

Limitation of Study

There are a variety of challenges and limitations that could impact the outcome presentation of this descriptive study. First, the COVID-19 pandemic has been impacting the world since early 2020. The pandemic has impacted teacher preparation programs, especially concerning enrollment numbers and program pathways. Additionally, teachers are burdened with more work than ever before. This may have limited the number of individuals who participated in the survey.

Another limitation is that the survey asks participants to share their current pathway and program and does not ask them to share if they were ever enrolled in another pathway or program. As a result, some surveyed participants may have had prior EPP experience that is not reflected.

Conclusion

This descriptive research study determined if there were specific influencing factors and pre-service baselines to consider when choosing a certification pathway. The data collected from participants provided insight into the factors that influenced their certification decision-making process and the knowledge and experiences they felt they had when they entered their certification program of choice. This research study used the data collected and analyzed to design the Certification Pathway and Program Selection Tool (CPPS) as a tool for aspiring teachers to use when choosing the best-fit pathway for themselves.

Chapter IV

Results

Introduction

This study aimed to understand how aspiring teachers choose their certification pathway and program. The participants in this study fit into one of the following categories: those that enrolled in an Educator Preparation Program (EPP) and completed the program with their certification; those that enrolled in an EPP and completed the program without their certificate; and those that enrolled in an EPP and did not complete the program or earn their certificate. This study involved a survey of individuals enrolled in a Texas-based EPP between 2018 and 2022.

Research Questions

The research questions are as follows:

1. What are the influencing factors that aspiring teachers consider when choosing a certification pathway and program?
2. What pre-service baselines (knowledge, experiences and skills, dispositions, and future goals) are held by aspiring teachers?
3. Why does an aspiring teacher choose not to earn a teaching certificate?

Based on the findings from the survey, while following the principles of decision science and career choice theory, a decision-making tool was designed to guide aspiring teachers in determining which certification pathway is the “best fit” for them.

Participants and Sample

During the two weeks that the survey was open, 274 participants completed the survey. Of the 274 survey responses, only 247 met the sampling criteria. Of the survey

respondents, 98 participants, or 39.68%, were enrolled at the Texas-based EPP. The remaining 149 surveyed participants were enrolled in one of the other 123 EPPs across Texas. Table 4 below provides a breakdown of the surveyed participants and the category under which they fell:

Table 4

Four Sample Categories of Surveyed Participants

Sample categories	Participants	
	(<i>n</i>)	(%)
Current Aspiring Teachers (working toward certification)	120	48.58
Certified Novice Teachers (holding certification)	72	29.15
Certified Former Teachers (certified, not teaching)	22	8.91
Former Aspiring Teachers (incomplete certification)	33	13.36

Table 5 outlines the EPPs and the survey participants enrolled:

Table 5

Surveyed Participants—Educator Preparation Program Enrollment

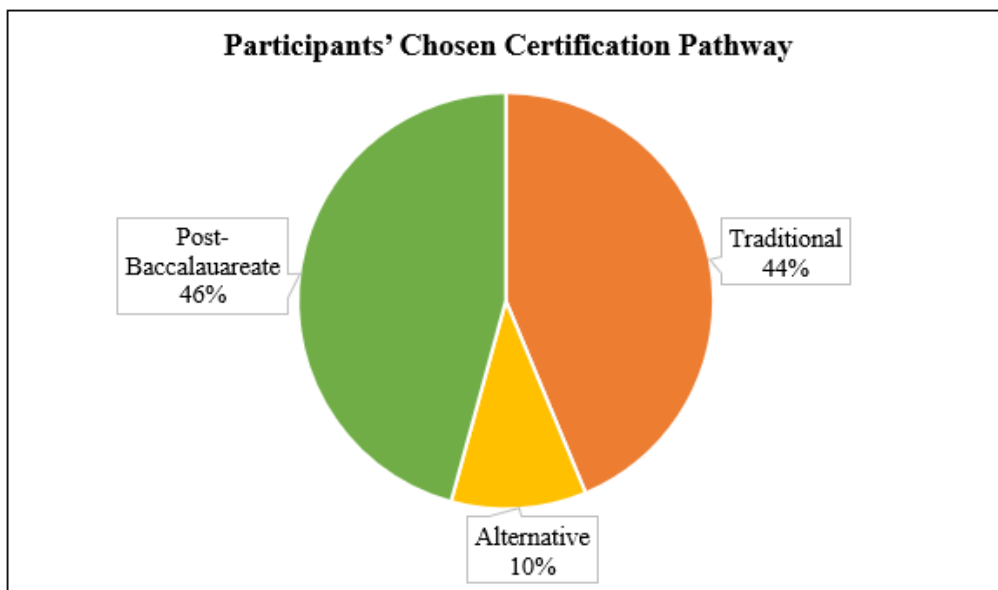
Educator Preparation Program	Participants	
	(<i>n</i>)	(%)
A Career in Education–ACP	32	12.96
A Career in Teaching–EPP (McAllen)	6	2.43
A Career in Teaching–EPP(Corpus Christi)	11	4.45
A+ Texas Teachers	23	9.31
Abilene Christian University	4	1.62
ACT–Houston	7	2.83
ACT–Houston at Dallas	4	1.62
ACT–Rio Grande Valley	7	2.83
ACT–San Antonio	3	1.21
Alamo Colleges	3	1.21
Alternative—South Texas Educator Program	6	2.43
Amberton University	2	0.81
American College of Education	6	2.43
Education Career Alternatives Program	4	1.62
Houston ISD	3	1.21
IteachTEXAS	1	0.40
North American University	1	0.40
Pasadena ISD	1	0.40

Educator Preparation Program	Participants	
	(n)	(%)
REG 04 Education Service Center	1	0.40
Relay Graduate School of Education	98	39.68
Rice University	3	1.21
Southwestern Adventist University	1	0.40
Texas Southern University	1	0.40
Texas Teachers of Tomorrow	2	0.81
Trinity University	1	0.40
21st Century Leadership	4	1.62
University of Houston–Downtown	1	0.40
University of North Texas	1	0.40
University of Texas–Arlington	1	0.40
University of Texas–San Antonio	1	0.40
YES PREP Public Schools Inc./Teaching Excellence	4	1.62
Out of State	1	0.40

One in ten respondents earned their certificate through an alternative certification program; 46% earned their teaching certificate from a postbaccalaureate program, and 44% earned their certification from a traditional undergraduate certification program . The breakdown of participants by certification pathway is shown in Figure 9.

Figure 9

Participants' Certification Pathway



Demographic Breakdown

The full sample of the 247 participants is diverse. Female participants represented 68% of respondents, 27% identified as male, and 4% identified as non-binary. Table 6 shows a breakdown of the self-identified race or ethnicity of participants. Of those surveyed, the largest population identifies as White a 42.51%, and the sum of Black, African American, Latinx, or Hispanic aspiring teachers surveyed equates to 43.72%.

Table 6

Race or Ethnicity of Participants

Race or Ethnicity	Participants	
	(n)	(%)
Asian	5	2.02
Black or African American	62	25.10
White	105	42.51
Latinx or Hispanic	46	18.62
Native American	2	0.81
Native Hawaiian or Pacific Islander	3	1.21
Other/Unknown	1	0.40
Prefer not to say	7	2.83
Two or More	16	6.48

Table 7 provides a breakdown of race or ethnicity and age by certification pathway. The traditional pathway has many White aspiring teachers, whereas the nontraditional pathways, alternative and postbaccalaureate, are the pathway of choice of a more diverse aspiring teacher pool.

Table 7

Demographic Characteristics of Participants by Pathway

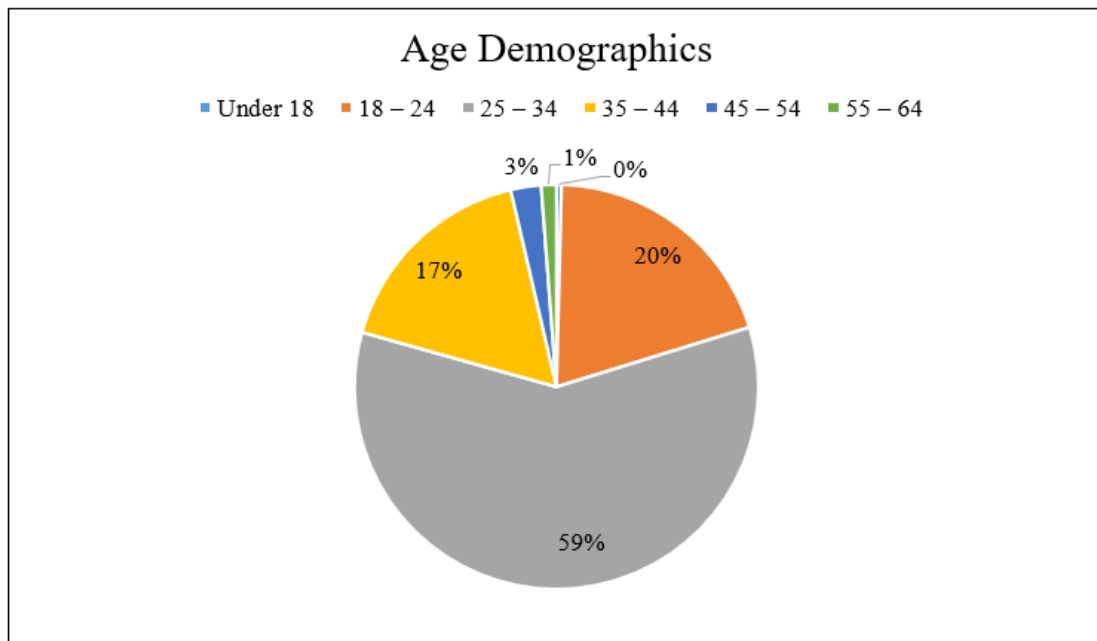
Demographic characteristics	Traditional (n = 108)		Alternative (n = 26)		Postbaccalaureate (n = 113)	
	(n)	(%)	(n)	(%)	(n)	(%)
Race or Ethnicity						

Asian	1	0.93	2	7.69	2	1.77
Black or African American	10	9.26	7	26.92	45	39.82
Latinx or Hispanic	9	8.33	6	23.08	31	27.43
Native American	1	0.93	—	—	1	0.88
Native Hawaiian or Pacific Islander	3	2.78	—	—	—	—
Prefer not to say	3	2.78	—	—	4	3.54
Two or more	9	8.33	2	7.69	5	4.42
White	72	66.67	9	34.62	24	21.24
Other/Unknown	—	—	—	—	1	0.88
Age (years)						
Under 18	1	0.93	—	—	—	—
18–24	19	17.59	8	30.77	22	19.47
25–34	63	58.33	16	61.54	67	59.29
35–44	24	22.22	2	7.69	16	14.16
45–54	1	0.93	—	—	5	4.42
55–64	—	—	—	—	3	2.65

Figure 10 shows how survey participants represent a wide range of ages, with the majority (59%) of individuals between 25 and 34.

Figure 10

Participants—By Age Bracket



EPP Enrollment and Certification Status

Of the 247 participants, most completed their certification and earned their standard certificate. Table 8 outlines participant certification status and EPP enrollment status at the time of the survey.

Table 8

Status with Educator Preparation Program

Status with educator preparation program	Participants	
	(n)	(%)
Completed the program and earned a teaching certificate	118	47.77
Completed the program and did not earn a teaching certificate	15	6.07
Currently enrolled and pursuing a certification	96	5.67
Currently enrolled and not pursuing a certification	14	38.87
Withdrew from the certification program and did not earn a certificate	4	1.62

Table 9 shows participants' current EPP enrollment status by certification pathway. This data shows that while most traditional and postbaccalaureate completers earned their degree and teaching certificate, few ($n = 15$) earned the degree but without earning their teaching certificate.

Table 9

Educator Preparation Program Status at Survey Completion

Enrollment status at educator preparation program	Traditional		Alternative		Postbaccalaureate	
	(n = 108)		(n = 26)		(n = 113)	
	(n)	(%)	(n)	(%)	(n)	(%)
Completed the program and earned a teaching certificate	62	57.41	15	57.69	41	36.28
Completed the program and did not earn a teaching certificate	8	7.41	—	—	7	6.19
Currently enrolled and pursuing a certification	30	27.78	9	34.62	57	50.44

Currently enrolled and not pursuing a certification	8	7.41	1	3.85	5	4.42
Withdrew from the certification program and did not earn a certificate	—	—	1	3.85	3	2.65

While the 247 participants vary in their certification status, most did earn ($n = 118$) or were on track ($n = 96$) to earn their certificate. There are four status categories: pre-service, intern certificate, probationary certificate, and standard certificate. Additionally, individuals were enrolled in their EPP but withdrew from the EPP, therefore not earning a certificate and not being considered a pre-service teacher. The participants' current certification status is as follows in Table 10:

Table 10

Types of Certificates Participants Reported Holding

Current certification status	Participants	
	(n)	(%)
Standard certificate	119	48.18
Probationary certificate	40	16.19
Intern certificate	36	14.57
Preservice teacher	47	19.03
Withdrew from EPP without certificate	5	2.02

Table 11 shows the participants' certification status by their program pathway. Most individuals who were surveyed have earned a teaching certificate – whether it a full certificate or a provisional certificate. Furthermore, there are 43 different content areas in which a teacher can be certified. Table 12 highlights the most popular content areas that participants were pursuing. Aspiring teachers earning a Core Subjects EC–6 certificate make up the largest population ($n = 62$) of those surveyed.

Table 11*Participants' Certification Status by Pathway*

Certification status	Traditional (<i>n</i> = 108)		Alternative (<i>n</i> = 26)		Postbaccalaureate (<i>n</i> = 113)	
	(<i>n</i>)	(%)	(<i>n</i>)	(%)	(<i>n</i>)	(%)
Standard certificate	59	54.63	14	53.85	46	40.71
Preservice teacher	9	8.33	5	19.23	33	29.20
Probationary certificate	19	17.59	1	3.85	20	17.70
Intern certificate	21	19.44	5	19.23	10	8.85
Withdrew	—	—	1	3.85	4	3.54

Table 12*Primary Content Areas for Certification*

Certification content area	Participants	
	(<i>n</i>)	(%)
Core Subjects EC–6	62	25.10
Computer Science 8–12	23	9.31
Core Subjects 4–8	21	8.50
Art (EC–12)	14	5.67
English Language Arts and Reading 7–12	14	5.67
Business and Finance 6–12	11	4.45
Bilingual Target Language Proficiency Test— Spanish	10	4.05

Note. EC = early childhood.

Influencing Factors to Choose a Pathway and Program

The first research question asks, “What are the influencing factors that aspiring teachers consider when choosing a certification pathway and program?” The survey asked participants how they chose their certification pathway and program. Participants were asked about the influencing factors in three different ways. First, survey participants were asked to “check all that apply” from a list of potential influencing factors.

Participants also had the option to choose “other” as an influencing factor and could add

other things they considered when choosing an EPP. Twenty participants chose “other,” citing various factors such as having a friend in the program, earning a higher salary, flexibility in the role, hands-on experience, and COVID-19.

In the second method, survey participants were asked to rank their top three decision-making influencers from the same list. The survey asked, “If you had to rank your top 3 most influencing factors while choosing a certification pathway and program, what would they be?” Participants were to choose only one choice per priority level, one for the first priority, one for the second priority, and one for the third priority. Only 133 participants followed the survey directions and responded in the manner requested. Therefore only 133 responses were used for this analysis. All participants had to rank their top three key decision-making influencers out of the ten options provided. Table 13 shows how participants ranked their top three factors when considering a certification pathway. The table also highlights the number of participants who chose each factor as a first, second, or third choice and the sum leading to the “Top Three Priority.” The table also shows the number of participants who did not choose each influencing factor as a top three priority. This shows that a degree earning opportunity ($n = 67$), program cost ($n = 67$), and certification support ($n = 61$) are the top priorities for aspiring teachers. In contrast, referral by a friend or family member ($n = 4$), program location ($n = 16$), and program partnerships ($n = 19$) were the least important.

Table 13

Top Three Influencing Factors by Survey Participants' Rankings

Influencing Factor	Priority			Top Three	Not a Top Three Priority
	First	Second	Third		
Degree-earning opportunity	44	17	6	67	66
Program cost	27	23	17	67	66

Certification support—Overall support	24	22	15	61	72
Program length	9	18	17	44	89
Certification support—Content exam support	8	22	9	39	94
Program culture, beliefs, and values	8	9	18	35	98
Program modality	1	5	14	20	113
Program partnerships	7	3	9	19	114
Program location	1	4	11	16	117
Referred by a close friend or family member	0	0	4	4	129

The last way participants were asked about influencing factors was through a Likert scale. A Likert scale from 1 to 7 was provided for each influencing factor, one being not important at all, four being neutral, and seven being extremely important. Participants had to answer this question for each of the influencing factors provided. Table 14 below shows each influencing factor's minimum, maximum, means, and standard deviations.

Table 14

Influencing Factors Toward Choosing a Certification Pathway

Influencing factor	<i>M</i>	<i>SD</i>	Minimum	Maximum
Degree-earning opportunity	5.61	1.688	1	7
Program cost	5.53	1.370	1	7
Certification support—Overall	5.48	1.399	1	7
Program culture, beliefs, values	5.41	1.441	1	7
Program length	5.32	1.370	1	7
Certification support—Exam	5.07	1.619	1	7
Program location	5.02	1.503	1	7
Program partnerships	4.89	1.533	1	7
Program modality	4.81	1.550	1	7

The mean scores for influencing factors, make it clear that the top three important factors for aspiring teachers when choosing a certification pathway and program are: degree

earning opportunities ($M = 5.61$), program cost ($M = 5.53$), and overall certification support ($M = 5.48$). In table 15, the influencing factors are broken down by certification pathway.

Table 15

Influencing Factors by Certification Pathway

Descriptive statistics	Traditional ($n = 108$)	Alternative ($n = 26$)	Postbaccalaureate ($n = 113$)	Total ($N = 247$)
Certification support—Overall support				
<i>M</i>	5.51	4.85	5.59	5.48
<i>SD</i>	1.417	1.891	1.215	1.399
<i>SE</i>	0.136	0.371	0.114	0.089
Minimum	1	1	2	1
Maximum	7	7	7	7
Certification support—Content exam support				
<i>M</i>	5.12	4.54	5.15	5.7
<i>SD</i>	1.483	2.14	1.599	1.619
<i>SE</i>	0.143	0.42	0.15	0.103
Minimum	1	1	1	1
Maximum	7	7	7	7
Degree-earning opportunity				
<i>M</i>	5.55	3.65	6.12	5.61
<i>SD</i>	1.525	2.348	1.287	1.688
<i>SE</i>	0.147	0.461	0.121	0.107
Minimum	1	1	1	1
Maximum	7	7	7	7
Program cost				
<i>M</i>	5.07	5.92	5.88	5.53
<i>SD</i>	1.351	1.647	1.186	1.37
<i>SE</i>	0.13	0.3233	0.112	0.087
Minimum	1	1	3	1
Maximum	7	7	7	7
Program culture, beliefs, and values				
<i>M</i>	5.26	4.69	5.50	5.31
<i>SD</i>	1.487	1.892	1.233	1.441
<i>SE</i>	0.143	0.371	0.116	0.092
Minimum	1	1	2	1
Maximum	7	7	7	7
Program length				
<i>M</i>	5.09	5.85	5.42	5.32
<i>SD</i>	1.405	1.461	1.28	1.37
<i>SE</i>	0.135	0.287	0.12	0.087

Descriptive statistics	Traditional (<i>n</i> = 108)	Alternative (<i>n</i> = 26)	Postbaccalaureate (<i>n</i> = 113)	Total (<i>N</i> = 247)
Minimum	1	1	1	1
Maximum	7	7	7	7
Program location				
<i>M</i>	5.01	5.08	5.01	5.02
<i>SD</i>	1.404	1.742	1.55	1.503
<i>SE</i>	0.135	0.342	0.146	0.096
Minimum	2	1	1	1
Maximum	7	7	7	7
Program modality				
<i>M</i>	4.78	4.81	4.83	4.81
<i>SD</i>	1.573	1.919	1.445	1.55
<i>SE</i>	0.151	0.376	0.1336	0.099
Minimum	1	1	1	1
Maximum	7	7	7	7
Program partnerships				
<i>M</i>	4.78	4.81	4.83	4.81
<i>SD</i>	1.573	1.919	1.445	1.55
<i>SE</i>	0.151	0.376	0.136	0.099
Minimum	1	1	1	1
Maximum	7	7	7	7

An ANOVA analysis was run to determine if the means were statistically significant. For this ANOVA, the independent variables were the certification pathways, and the dependent variables were the influencing factors. Nine separate ANOVA analyses were completed. Consequently, each was assessed at the 0.0055 level after the *Bonferonni* correction was applied. Significant differences in outcomes were detected for degree earning opportunity ($F_{2,244} = 27.45$; $p < 0.001$), program cost ($F_{2,244} = 11.80$; $p < 0.001$), and program culture, ($F_{2,244} = 3.46$; $p < 0.005$). The independent ANOVA analysis showed that there was a statistically significant difference in degree earning opportunity and program cost, but not with program culture. Utilizing Tukey B showed that the degree-earning opportunity factor is significantly lower for alternative certification program participants than those in the traditional and postbaccalaureate pathways.

Additionally, program cost is less of a concern for individuals in a traditional program than those in an alternative or postbaccalaureate program.

Pre-Service Baselines

The second research question asked, “What pre-service baselines (knowledge, experiences and skills, dispositions, and goals) are held by aspiring teachers who choose a nontraditional pathway?”

Content Knowledge

Participants were asked various questions on the survey to understand their pre-service content knowledge. For example, 68% of participants reported that they had studied the same content or subject area they aspired to teach in their undergraduate studies.

Content Area: Teaching and Testing Confidence

Approximately 56% of participants reported that they were confident or extremely confident in their mastery of the content knowledge for the grade level and subject they were aspiring to teach. Table 16 shows how all 247 participants responded on their confidence in teaching their subject content.

Next, participants were asked to reflect on their preservice self before enrolling in their EPP and answer, “How confident did you feel about passing the TExES Content Exam for your certification area?” More individuals were confident about teaching the content area they aspired to be certified in than passing the content exam required to earn a teaching license (Table 17).

The mean and standard deviation for teaching and testing confidence is reported in Table 16 by certification pathway. The table shows the confidence level in teaching the aspiring teacher's chosen content area.

Table 16*Content Teaching and Testing Confidence—Survey Results*

Scale	Traditional (n = 108)	Alternative (n = 26)	Postbaccalaureate (n = 113)	Total (N =247)	
				(n)	(%)
Teaching confidence					
1. Not confident at all	0	0	4	4	1.62
2. Not confident	3	1	3	7	2.83
3. Slightly not confident	4	3	2	9	3.64
4. Neutral	13	3	18	34	13.77
5. Slightly confident	31	3	21	55	22.27
6. Confident	22	11	35	68	27.53
7. Extremely confident	35	5	30	70	28.34
Testing confidence					
1. Not confident at all	0	1	2	3	1.21
2. Not confident	3	2	8	13	5.26
3. Slightly not confident	8	4	9	21	8.50
4. Neutral	12	3	20	35	14.17
5. Slightly confident	21	2	22	45	18.22
6. Confident	32	7	25	64	25.91
7. Extremely confident	32	7	27	66	26.72

Table 17*Content Teaching and Testing Confidence—Descriptive Statistics*

Descriptive statistics	Traditional	Alternative	Postbaccalaureate
Teaching confidence			
<i>M</i>	5.57	5.35	5.42
<i>SD</i>	1.306	1.441	1.408
Minimum	1	1	1
Maximum	7	7	7
Testing confidence			
<i>M</i>	5.55	5.00	5.08
<i>SD</i>	1.363	1.876	1.615
Minimum	2	1	1
Maximum	7	7	7

An ANOVA was performed to determine if there was a statistically significant difference between the means, but one was not found for confidence in teaching a subject area and the certification pathway or for confidence in passing the content exam and certification pathway.

Content Area: Number of Attempts on the Exam

The last question in this section asked participants to share the number of attempts it took them to pass the official certification content exam (Table 18). Approximately 15% of surveyed participants (37/247) had yet to take the content exam, and 40% of respondents passed their exam on their first attempt. However, 45% or 110 participants did not pass the exam on the first attempt. They reported that they attempted the official content exam two or more times.

Table 18

Attempts Required to Pass Texas Examinations of Educator Standards

Attempts	Traditional (n = 108)		Alternative (n = 26)		Postbacca- laureate (n = 113)		Total (N = 247)	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
0 ^a	5	4.63	3	11.54	29	25.66	37	14.98
2	38	35.19	15	57.69	47	41.59	100	40.49
2	34	31.48	3	11.54	21	18.58	58	23.48
3	23	21.30	3	11.54	8	7.08	34	13.77
4	5	4.63	1	3.85	3	2.65	9	3.64
5	1	0.93	—	—	2	1.77	3	1.21
>5	2	1.85	1	3.85	3	2.65	6	2.43

More nontraditional candidates, both alternative and postbaccalaureate, passed their content exam on their first attempt than did traditional candidates, and over 50% of

traditional teachers needed two or three attempts to pass. Additionally, an ANOVA was completed to determine if there was a difference in the means between the level of confidence on the TExES content exam and the actual number of attempts on the TExES content exam. The ANOVA failed to detect a significant difference in the means.

Experiences and Skills

The participants are a diverse group of individuals whose professional experience varied greatly. For example, approximately 24% of participants had no full-time professional work experience before enrolling in their teacher preparation program. However, more than 75% of participants had full-time work experience before enrolling in their EPP. Thirty-eight percent, the largest group, reported 3 to 5 years professional experience. Table 19 shows whether participants had full-time experience before enrolling in their EPP by certification pathway.

Table 19

Full-Time Experience Before Educator Preparation Program Enrollment

Full-time experience	Traditional (<i>n</i> = 113)		Alternative (<i>n</i> = 26)		Postbaccalaureate (<i>n</i> = 108)	
	(<i>n</i>)	(%)	(<i>n</i>)	(%)	(<i>n</i>)	(%)
None	13	26.55	9	34.62	30	26.55
1–2 years	2	17.70	10	38.46	20	17.70
3–5 years	56	7.08	5	19.23	8	7.08
6–10 years	18	29.20	2	7.69	33	29.20
11+ years	22	19.47	—	—	22	19.47

Professional Experiences in Education

Of the participants with full-time work experience, 70% had work experience in education (Table 20). Working in education includes working for a Local Education Agency (LEA), an Institute of Higher Education, or an education-focused non-profit.

When asked if participants worked for an LEA or a K–12 school district, 60% said yes.

No data was collected from the 40% of others who did not have LEA or K–12 experience.

Participants were asked to “check all that apply” from a list of education-like roles they may have held before joining their EPP in a full or part-time capacity. More than 50% of respondents chose a classroom support role such as paraprofessional, teaching assistant, teachers’ aide, or support specialist. Table 19 reports the experiences aspiring teachers had in the K–12 field before enrolling in their EPP program, sorted by pathway. In each pathway, the roles are categorized by type of experience, direct K–12 experience or K–12 adjacent experience. Direct K–12 experiences are roles that are in the classroom, where as K–12 adjacent roles are in an early childhood to college setting but are not classroom-based roles. The percentage calculated is based on the number of individuals in the pathway. For example, this table shows that more traditionally certified individuals had a direct K–12 role prior to EPP enrollment, whereas more alternatively certified individuals had more K–12 adjacent experiences, and postbaccalaureate individuals had a hybrid of direct K–12 and K–12 adjacent roles. It is important to note that participants could choose more than one role they held in the survey, and student teacher and noncertified teacher of record were not provided as options in the survey.

Table 20

Full- and Part-Time K–12 Roles Before Educator Preparation Program Enrollment

Role	Traditional		Alternative		Postbaccalaureate	
	(n)	(%)	(n)	(%)	(n)	(%)
			Direct K–12			
Paraprofessional	37	34.26	1	3.85	33	27.97
Substitute	22	20.37	1	3.85	21	17.80
Support aide	31	28.70	2	7.69	18	15.25

Role	Traditional		Alternative		Postbaccalaureate	
	(n)	(%)	(n)	(%)	(n)	(%)
Teacher aide	36	33.33	5	19.23	38	32.20
Interventionist	15	13.89	1	3.85	14	11.86
K–12 Adjacent						
Clerk	22	20.37	2	7.69	12	10.17
Daycare teacher	23	21.30	5	19.23	23	19.49
School counselor	29	26.85	—	—	8	6.78
Tutor	15	13.89	11	42.31	31	26.27
Other						
None	4	3.70	9	34.62	17	14.41
Other	1	0.93	1	3.85	9	7.63
Total	235		38		224	

Note. Aspiring teachers could have reported more than one role before enrolling

Dispositions and Goals

Aspiring teachers were then asked to share their short-term and long-term goals when they first enrolled in their EPP. The question was asked in an open-ended format, which allowed for various responses. First, all 247 responses were reviewed, and categories based on the theme were created. For instance, one participant shared that they wanted “to pass my content exams.” Their short-term goal was then categorized under Texas Educator Certificate. Table 21 highlights the short-term themes and examples of responses for each theme. Each open-ended response was tied to a theme. For example, findings showed that 34.72% of all participants had a short-term goal to earn their Texas Educator Certificate.

Table 21*Short-Term Goals—Response Themes*

Theme	Example response	Responses (<i>N</i> = 288)	
		(<i>n</i>)	(%)
Texas Educator Certificate	<ul style="list-style-type: none"> • “Pass the exam to get my standard certificate” • “Just to get my certification. I had already been hired as the ELAR [English language arts and reading] teacher of record at my school.” 	100	34.72
Degree attainment (bachelor's or master's degree)	<ul style="list-style-type: none"> • “Graduating with a bachelor's degree” • “My short-term goals were to pass my upcoming certification exam (the first of the sequence), pass my residency's first gateway, and build a relationship with my resident advisor.” 	43	14.93
Employment	<ul style="list-style-type: none"> • “Getting hired at the school of my choice” • “Lead to promising career and professional development” 	29	10.07
Become a teacher	<ul style="list-style-type: none"> • “To learn to be the best teacher I can be for my students” 	27	9.38
Financial	<ul style="list-style-type: none"> • “Make money fast when you're done” • “A promotion and pay increase” 	22	7.64
Other	<ul style="list-style-type: none"> • “My short-term goals were to be accepted into the program and pass the summer courses.” 	22	7.64
None	—	17	5.90
Teaching experience	<ul style="list-style-type: none"> • “To learn aspects, strategies, and general knowledge of teaching” 	14	4.86
Learning and knowledge	<ul style="list-style-type: none"> • “To learn aspects, strategies, and general knowledge of teaching” 	7	2.43
Career exploration	<ul style="list-style-type: none"> • “Honestly just figure out if teaching was the right fit for me” 	4	1.39
Program completion	<ul style="list-style-type: none"> • “To finish” 	3	1.04

Note. *N* measures the number of responses, not respondents.

Next, short-term goal responses were compared across certification pathways. Most of those who enrolled in a traditional undergraduate program said that earning their certificate, attaining their degree, and achieving financial stability were their primary short-term goals. For those who aspired to earn their certificate through an alternative pathway, most named earning their Texas Educator Certificate as their short-term goal. Finally, postbaccalaureate candidates named earning their certificate, earning their master's degree, and becoming a teacher as their top three short-term goals. These are provided in Table 22.

Table 22

Short Term Goals of Aspiring Teachers (Response Themes)

Short-term goal theme	Traditional		Alternative		Postbaccalaureate	
	(n)	(%)	(n)	(%)	(n)	(%)
Texas Educator Certificate	37	31.36	17	56.67	46	34.85
Degree attainment	18	15.25	—	—	21	15.91
Employment	16	13.56	2	6.67	12	9.09
Become a teacher	10	12.71	6	20.00	11	8.33
Financial	15	8.47	2	6.67	4	7.58
Other	8	6.78	2	6.67	8	7.58
None	6	5.08	1	3.33	10	6.06
Teaching experience	4	3.39	—	—	10	3.03
Learning and knowledge	3	2.54	—	—	4	3.03
Career exploration	—	—	—	—	4	3.0
Program completion	1	0.85			2	1.52%
Total	118	100.00	30	100.00	132	100.00

Participants were asked about their long-term goals as well. First, 25.5% of respondents reported becoming a career teacher as a long-term goal. Then, 11.3% of individuals shared that educational leadership was a long-term goal. Finally, another 11.3% of aspiring teachers shared that employment opportunities, promotions, or financial security or improvement were long-term goals of theirs. The themes were the

same as those for short-term goals, with the addition of three further themes: education leadership, additional degrees, and a career outside of education. Table 23 below has a breakdown of long-term goal themes collected from participant responses:

Table 23

Long Term Goals of Aspiring Teachers

Theme	Participants' Responses	
	(n)	(%)
Become a Teacher	71	28.74%
Other	35	14.17%
Certification	34	13.77%
Degree Attainment	32	12.96%
Educational Leadership	28	11.34%
Financial	16	6.48%
None	15	6.07%
Employment	12	4.86%
Additional Degrees	10	4.05%
Teaching Experience	7	2.83%
Career Outside of Education	5	2.02%
Career Exploration	2	0.81%
Program Completion	1	0.40%

Note. Values for *n* = number of responses.

The breakdown between certification pathways is shown on Table 24. None of the traditionally certified participants shared having a career outside of education as a long-term goal. In contrast, participants from all three pathways shared that educational leadership was a long-term goal.

Table 24

Long Term Goals of Aspiring Teachers by Certification Pathway

Long-term goal	Traditional		Alternative		Postbaccalaureate	
	(n)	(%)	(n)	(%)	(n)	(%)
Become a teacher	34	31.48	5	19.23	32	28.32
Other	25	23.15	4	15.38	6	5.31
Texas Educator Certificate	8	7.41	4	15.38	22	19.47
Degree attainment	6	5.56	1	3.85	25	22.22

Educational leadership	6	5.56	8	30.77	14	12.39
Financial	12	11.11	2	7.69	2	1.77
None	5	4.63	1	3.85	9	7.96
Employment	7	6.48	—	—	5	4.42
Additional degrees	6	5.56	—	—	3	2.65
Teaching experience	1	0.93	—	—	6	5.31
Career outside of education	—	—	2	7.69	3	2.65
Career exploration	—	—	—	—	2	1.77
Program completion	—	—	—	—	1	0.88

Former Aspiring Teachers

The third research question asked, “Why does an aspiring teacher choose not to earn their teaching certificate?” Of those who completed the survey, 33 individuals, or 13% of respondents, withdrew from their certification program —ultimately not earning their teaching certificate. Those 33 individuals had an average mean of a 4.39, or neutral, on their TExES content exam. Those individuals were asked to answer follow-up questions regarding their certification journey. As shown on Table 25, these individuals either withdrew from their certification program, completed their program but did not earn their teaching certificate, or are currently pursuing a degree but have withdrawn from the certification portion of their program.

Table 25

Participants Exiting Without a Texas Educator Certificate

Reason	Participants without certificate	
	(n)	(%)
Completed program without certification	15	45.46
Enrolled in program without pursuing certification	14	42.42
Withdrew from educator preparation program	4	12.12

Respondents who exited an EPP without a certificate either withdrew from their EPP entirely or withdrew only from the certification portion of the program. Of these 33 individuals, 39.39% shared that they did not earn a certification because of other

opportunities in the education field. Then 48.48% of participants cited certification exams as the reason they withdrew from the program; 36.36% of those respondents shared it was due to the rigor of certification exams and their inability to pass the exam. The other 12.12% cited certification exam costs. Finally, another 8.5% of participants shared that program costs were why they withdrew from their program. Table 26 outlines why aspiring teachers surveyed chose not to earn their certificate by certification pathway.

Table 26

Participants' Reasons for not Earning a Texas Educator Certificate

Reason for exiting without a certificate	Traditional (<i>n</i> = 23)		Alternative (<i>n</i> = 2)		Postbaccalaureate (<i>n</i> = 23)	
	(<i>n</i>)	(%)	(<i>n</i>)	(%)	(<i>n</i>)	(%)
Certification exam—rigor	5	31.25	1	50	6	40.00
Certification exam—cost	2	12.50	—	—	2	13.33
Earned a teacher of record role without a certificate	3	18.75	—	—	7	46.67
Other employment opportunities in education	9	56.25	—	—	4	26.67
Program cost	3	18.75	—	—	1	6.67
Personal	—	—	—	—	2	13.33
Other	1	6.25	1	50	1	6.67

Note. Values for *n* = number of responses. Respondents could give more than one

response. Of 33 respondents, for 16 the pathway was traditional; for 2, alternative; and for 15, postbaccalaureate.

Survey Limitations

The survey had a few limitations. First, the survey results were self-reported and had convenience sampling. Second, the survey was open for two weeks. Perhaps there would have been more responses with a longer window, and a longer survey window is recommended for a future survey. Third, in the survey responses, many participants were certified through a PB pathway (*n* = 113, 46% of valid responses). In contrast, Texas

reported that 3.8% of aspiring teachers choose the postbaccalaureate pathway in 2019-2020. Given this apparent disproportionality, the results should be viewed with caution as the postbaccalaureate pathway only represents a small portion of Texas certified teachers. Finally, the COVID-19 pandemic serves as a limitation. The pandemic has impacted all communities and professions, especially K–12 students and teachers.

Summary

This survey allowed for the study of factors that influence certification pathway and program choice by aspiring teachers and their pre-service baselines. Survey participants ranged from current aspiring teachers, current novice teachers, and former aspiring teachers. All participants were enrolled in one of the three pathways into the teaching profession, traditional, alternative, and postbaccalaureate, between 2018 and 2022.

Degree earning opportunities, program cost, and certification support were the most important factors aspiring teachers considered while choosing a certification pathway and program. However, the influencing factors vary in priority based upon each certification pathway. For example, degree earning opportunities are a priority for those in a traditional or postbaccalaureate program. In contrast, program cost is more of a priority for individuals in an alternative program. In addition, the participant's professional experiences before enrolling in their EPP varied. Seventy percent of respondents had at least some education-like work experience in their professional careers. Lastly, learning from individuals who chose not to earn their teaching certificate allowed for a clearer understanding of the challenges those aspiring teachers face, such as program and certification exam costs, other education-based employment opportunities,

or earning a teacher of record role without certification. The key findings from the survey allow for connections to be made to determine which certification pathways are the best fit for an individual based on their priorities, knowledge, experiences, and goals.

Chapter V

Discussion

Introduction

With the gap between the supply and demand of teachers growing more year over year, there needs to be a way to ensure that all individuals who aspire to become teachers are enrolled in a pathway that will allow them to be successful and earn a teaching certificate (Partelow, 2019). With hundreds of EPPs across the United States, it is a challenge for aspiring teachers to determine which program will successfully lead them to their goal of becoming teachers of record, with their priorities and needs, in mind. This research aimed to learn how aspiring teachers have made their certification and pathway decisions and to design a tool that aspiring teachers, in the future, can use to support them in the decision-making process.

The research study began by understanding the three different pathways towards certification – traditional, alternative, and postbaccalaureate (Texas LBB, 2017). This created a foundation of knowledge on the pathway pre-requisites, pathway requirements, enrollment and retention rates, and how aspiring teachers enter the classroom through each pathway.

In the literature review, the pre-service baselines were defined. Pre-service baselines are the knowledge, experiences, skills, dispositions, and goals aspiring teachers hold before enrolling in an EPP. The work of Shulman (1986), the Interstate Teacher Assessment and Support Consortium (2013), and Kind and Chan (2019) provided a deeper understanding of an educator's types of knowledge, content knowledge, and pedagogical knowledge. The literature review determined that aspiring teachers are only

required to have content knowledge before earning their certificate, as pedagogical knowledge is developed over time and practice (Shulman, 1986). Therefore, pedagogical knowledge is not assessed in the survey. In addition, the literature review revealed that no research focused on pre-service teachers' professional experiences and skills before enrolling in their EPP (Darling-Hammond, 2006). Dispositions were studied by many researchers, starting with Shulman (1986), and continued by Morine-Deshimer, Kent (1999); Johnson, Johnson, Farenga (2005); DeLuca (2012); Choi, Benson, Shudak (2016); and Stronge and Hinderman (2021). In the literature review, it was found that it is extremely challenging to assess aspiring or certified teachers' dispositions (Choi et al., 2016).

Research on the three different pathways, combined with the findings from the literature review, led to the development of a survey administered to aspiring and novice teachers who were enrolled in a Texas-based EPP between 2018 and 2022.

Demographics of Aspiring Teachers

More teachers are entering the profession through a nontraditional pathway (Partelow, 2019). Nontraditional pathways account for more than 60% of newly certified teachers in Texas (Smith, 2021). During the 2019-2022 school year, 15,042 novice teachers were certified in Texas. Most of those candidates were certified through a nontraditional pathway – either alternative or postbaccalaureate.

Today, more teachers are joining the profession through a nontraditional pathway (Sutcher et al., 2016). Most nontraditional aspiring teachers, those in an alternative or postbaccalaureate pathway, are older, joining their EPP after a few years of professional work experience. Nontraditional pathways also attract a more diverse pool of aspiring

teachers. For instance, in the survey conducted, Black and African-American aspiring teachers represented 9.26% of traditionally certified candidates, whereas 66.75% of candidates certified through a nontraditional pathway identified as Black or African-American, 26.92% alternative, and 39.82% postbaccalaureate. Similarly, the survey found that Latinx or Hispanic aspiring teachers accounted for 8.33% of traditionally certified teachers, much less than the nontraditional pathways, which accounted for 23.08% of alternatively certified teachers and 27.43% of postbaccalaureate Latinx or Hispanic aspiring teachers.

Educator Certificates of Aspiring Teachers

An aspiring teacher can earn two types of provisional certificates in Texas before earning their standard teaching certificate. These are the intern and probationary certificates (TEA, 2021a). The survey showed that the traditional and postbaccalaureate pathways administered more probationary certificates than the alternative pathway. The traditional pathway administered 17.59% of probationary certificates, alternative administered 3.85%, and postbaccalaureate administered 17.70% probationary certificates. This is a new finding to be reviewed by other researchers, as most research does not delineate between certification types – only if the completer has earned a certificate. Because the alternative pathway is the fastest route into the teacher of record role, most chose an intern certificate because it requires fewer examinations before stepping into the classroom. This may possibly be connected to one of the top influencing factors for alternative certification teachers as identified by this study's survey, that being program length.

Influencing Factors

The first research question asks, “What are the influencing factors that aspiring teachers consider when choosing a certification pathway and program?” A nontraditional pathway, alternative or postbaccalaureate, is generally the route that aspiring teachers who hold a bachelor’s degree, take (TEA, 2021a).

There are various reasons an aspiring teacher chooses a nontraditional certification pathway. Baines (2010) shared that due to IHE funding decreasing, resulting in increased costs for traditional and postbaccalaureate programs, many states redefined certification requirements and opened more alternative pathways. The literature review found that the low cost of the alternative pathway what makes it a popular route (Partelow, 2019). Uriegas (2014) shared that program length, or the time it takes to earn a teacher of record role, is what makes the alternative pathway popular. It also uncovered many alternative programs in Texas are offered in different modes with some being asynchronous and self-paced while others being synchronous instruction with an instructor (Uriegas et al., 2014). Research also found that certification exam scores were often a barrier to earning a teaching certificate (Sutcher et al., 2016).

On the survey, aspiring teachers were asked to share the factors that impacted them when choosing a certification pathway and program and to rank those factors in order of priority or importance. The influencing factors included: certification support (overall), certification support (exam), degree earning opportunities, program cost, program culture, program length, program location, program modality, program partnerships, and referral by a friend or family member. Regardless of certification pathway, degree earning opportunity, program cost, and overall certification support were

ranked as the top three priorities for aspiring teachers. However, the top three priorities for each pathway differed.

The top three priorities for aspiring teachers in the traditional pathway were degree earning opportunities ($M = 5.55$), overall certification support ($M = 5.51$), and program culture ($M = 5.26$). For aspiring teachers in the alternative pathway, their top priorities were program cost ($M = 5.92$), program length ($M = 5.85$), and program location ($M = 5.08$). Lastly, aspiring teachers who chose the postbaccalaureate pathway saw degree earning opportunities ($M = 6.12$), program cost ($M = 5.88$), and overall certification support ($M = 5.59$), as their top priorities. Findings around program cost being a priority concurs with the research of seminal researchers. The importance of certification support and degree earning opportunities is a new finding, which needs to be further studied.

Therefore, when supporting aspiring teachers in determining which pathway is the best fit for them, degree earning opportunities, program cost, certification support, and program length must be considered. This is because each of these influencing factors are connected to aspiring teacher's goals and ultimately their success in a certification pathway.

Pre-service Baselines

The second research question in this study asks, "What pre-service baselines (knowledge, experiences and skills, dispositions, and future goals) are held by aspiring teachers who chose a nontraditional pathway?" Pre-service baselines are important as more aspiring teachers choose to become teachers after having full-time work experience. This may impact an aspiring teacher's content knowledge, level of preparation for the

teacher force, and goals. It is because a growing number of new teachers are nontraditionally certified that it is important to consider if their pre-service baselines directly impact their success in a specific certification pathway (U.S. Department of Education Office of Postsecondary Education, 2014).

Knowledge

The survey results showed that 50% of nontraditional candidates studied worked towards a certificate in the same content area as their undergraduate major or minor. However, confidence in teaching the subject and passing the certification examinations did not necessarily support the actual results that an aspiring teacher may have had on their content exams (Uriegas et al., 2014). Traditionally certified teachers (mean = 5.55) were more confident in passing their TExES content exam than their alternative (mean = 5.00) and postbaccalaureate (5.08) counterparts. Interestingly, only 35.19% of traditionally certified teachers passed their certification exam on the first attempt, whereas 57.69% from the alternative path and 41.59% from the traditional path passed the exam on their first attempt. Approximately 63% of traditionally certified teachers required two or three attempts before passing their content exam, three times more than the alternative (23.08%) and postbaccalaureate (25.66%). The National Research Council (2001) showed that content knowledge is imperative for a teacher to be successful on their certification exams and in the classroom, but that passing these certification exams is a barrier to aspiring teachers completing their certification program and earning a teaching certificate (National Research Council, 2001).

Because the certification exam is often a barrier to program completion, being more informed how much support they will need in building their content knowledge

could support aspiring teachers in being successful in earning their certificate (National Research Council, 2001). This research concurs with seminal researchers who said the rigor of the content exam and content knowledge gaps impacts EPP completion rates. Therefore, it is important to have aspiring teachers take a practice content exam before choosing a certification pathway. No pathway requires a content exam as a pre-requisite, however, it is believed that it should be a tool that aspiring teachers use to determine which pathway is the best fit for them. Their score on the practice test can allow the aspiring teachers to determine if they need content exam support, and they can make a more informed decision on which pathway and program is the best fit for them.

Professional Experiences & Skills

The survey showed that 75% of aspiring teachers had full-time work experience before enrolling in their EPP. However, the survey analysis did not yield any relevant data connecting prior work experience to succeed in a specific certification pathway (Darling-Hammond et al., 2002).

Dispositions

The term disposition was first introduced in 2002 as the beliefs held by educators centered on their values, commitments, and professional ethics and how they impacted their beliefs about their students and families. However, researchers found that assessing dispositions was a challenge and therefore was not assessed in the survey and did not serve as a priority when aspiring teachers choose a certification pathway (Choi et al., 2016).

Goals

Researchers believe that those who are certified through nontraditional pathways have different goals than those in the traditional pathway (Papay, 2017). Aspiring teachers who participated in the survey shared the short- and long-term goals they had when they were enrolled in an EPP. The primary short-term goal of aspiring teachers was to earn their Texas Educator Certificate. The top three short-term goals for traditionally certified teachers were earning a certificate, earning their degree, gaining employment, and improving financial status. For alternatively certified teachers, their top three goals were earning a certificate, becoming a teacher, gaining employment, and improving financial status. For postbaccalaureate teachers, earning their certificate, degree attainment, and gaining employment were their top three goals. The alternative pathway is the best fit for those who have short-term goals of becoming certified, entering the classroom as a teacher, and increasing their salary. Individuals who aspire to earn a graduate degree and want support with the certification process should consider the postbaccalaureate pathway.

The primary long-term goal of aspiring teachers was to become a teacher. Becoming a teacher and financial security were their top priorities for traditionally certified teachers. Their long-term goals were educational leadership, becoming a teacher, and earning a Texas Educator Certificate for alternatively certified teachers. Postbaccalaureate participants stated that their long-term goals were to become a teacher, attain a degree, and earn their Texas Educator Certificate. The alternative pathway may be the best fit for aspiring teachers who see earning a certificate as steppingstone to furthering their career. However, if a long-term goal held by an aspiring teacher is to earn a graduate degree, a postbaccalaureate program may be the best fit. There was limited

research on short-term and long-term goals and its impact on the teacher certification journey, but these new findings should be researched further.

Former Aspiring Teachers

The third research question in this study asks, “why does an aspiring teacher choose not to earn their teaching certificate?” Research has shown that only two in five aspiring teachers who enroll in an EPP complete the program and earn a teaching certificate (Partelow, 2019). It results in 60% of aspiring teachers withdrawing from their EPP or completing the program without earning their teaching certificate (Hobson et al., 2009).

Individuals who choose to exit their EPP before earning their certificate do so because of the rigor of the certification exam, the opportunity to become a teacher of record without a certificate, or other professional opportunities. For aspiring teachers to be successful in the certification process, they must find the content exam feasible to pass and not be deterred by other career opportunities while working towards becoming certified. They must be steadfast in their decision to become certified before choosing and enrolling in an EPP. These findings concur with the research of Hobson (2009) and Partelow (2019).

Future Research

As this line of research continues, some additional research is recommended. First, a deeper dive into why aspiring teachers choose to not get certified or withdraw from their EPP entirely, would provide more insights into the challenges aspiring teachers face while enrolled in an EPP. Second, as very limited research was found connecting prior work experience impacting success in a certification pathway, this

research would be imperative in closing the literature gap that was found during this research process. Lastly, as the implementation and the improvement of the Certification Pathway and Program Selection Tool continues, the following research would be required: evaluation of program modality with more specificity to confirm whether there is a connection between modality and level of support; research on content exam passing rates by pathway; and student achievement data by pathway. These recommendations will further development of the Certification Pathway and Program Support Tool, to make it a viable resource for future teachers to use.

Conclusion

The research showed that determining the best-fit certification pathway and program for an individual is highly personal. The best-fit program depends on an aspiring teacher's timeline, finances, test-taking abilities, content knowledge, and goals (Council of Chief State School Officers, Council, 2013). Ultimately this study found that for aspiring teachers who do not have a bachelor's degree, the traditional pathway is the most efficient and effective way to earn their teaching certificate and enter the teaching force.

A nontraditional program, either alternative or postbaccalaureate, is the best fit for individuals with a bachelor's degree (Long, 2020). However, aspiring teachers need to consider their finances and priorities, such as immediate needs, short-term goals, and long-term goals, before choosing whether the alternative or postbaccalaureate pathway is best for them. In addition, this research shows that pre-service experiences and skills are not as relevant unless it impacts an aspiring teacher's level of preparation for their certification exams. Since there was no literature focused on pre-service teacher's prior work experience, it is recommended that further research be conducted.

The alternative certification pathway is the best fit for aspiring teachers whose top priorities are finding the fastest route into the teacher force (program length) and program. Additionally, the alternative pathway is not the best-fit pathway for individuals who may need a deep refresher on the content knowledge required to pass their certification exams or may have some content knowledge gaps. These findings concur with the researchers in the literature review.

The postbaccalaureate pathway is the best fit for aspiring teachers who need more support in the certification process. Additionally, for aspiring teachers who aim to earn a graduate degree in their lifetime, the postbaccalaureate pathway is often the right pathway for them. Postbaccalaureate programs often just mean a program that allows an aspiring teacher to pursue a graduate degree and teaching certificate – they do not require holding a school-based job, but some do. Some postbaccalaureate programs allow for aspiring teachers to hold a job – such as student teacher, Resident, or intern teacher. Other programs may not be connected to employment or may be full-time programs that do not allow for employment opportunities. Therefore, the aspiring teacher may have to forgo a full-time salary or take a salary cut. Individuals who choose the postbaccalaureate route towards certification for aspiring teachers should also have access to more disposable income or grants or scholarships. These findings concur with the research of seminal thinkers.

Ultimately, aspiring teachers need to consider their financial priorities, level of content knowledge, and short-term and long-term goals when choosing a nontraditional certification pathway.

Chapter VI

Action Plan

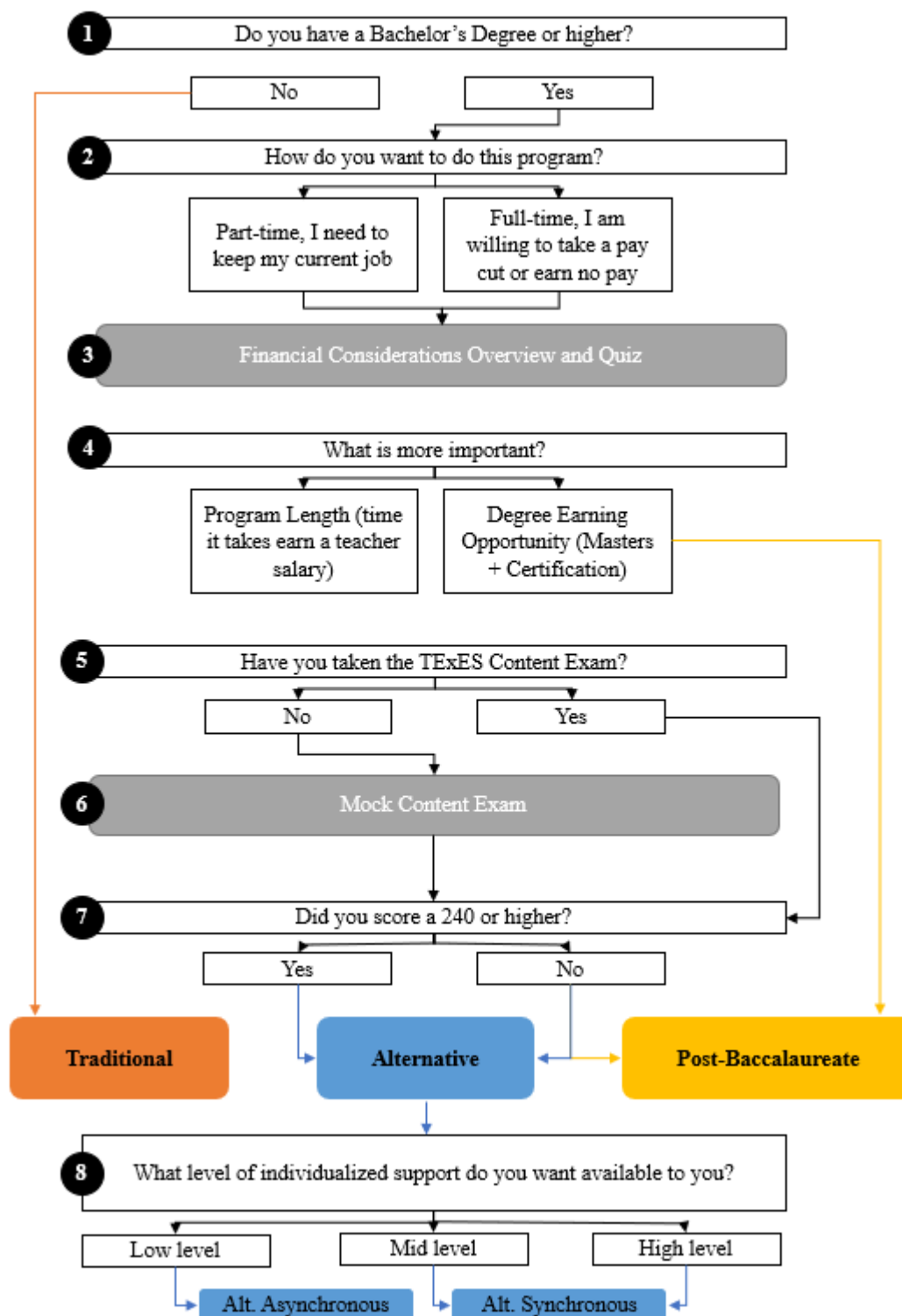
Introduction

The only way to build a diverse and equitable pipeline into the teaching profession is to support aspiring teachers navigating the myriad of certification pathways and programs in states such as Texas, where there are over a hundred EPPs to choose from. There are many nontraditional certification programs for aspiring teachers who hold a bachelor's degree. Not all pathways and programs are alike regarding program offerings, modality, cost, length, and level of support. Similarly, every person's knowledge, experiences, skills, dispositions, and goals are different, so not every pathway and program is the best fit. Some aspiring teachers need more scaffolded learning opportunities with more advising and one-on-one coaching, while others can thrive in an asynchronous or self-paced program.

The Certification Pathway and Program Selection (CPPS) tool is designed to support aspiring teachers to reflect on their priorities, needs, and goals, impacting their EPP pathway and program choice.

Certification Pathway and Program Selection Tool

The goal of the Certification Pathway and Program Selection (CPPS) tool is designed to support aspiring teachers before they choose a certification pathway or program. Additionally, the goal of the CPPS tool is to support aspiring teachers in determining which pathway and program are the best suited for them, considering their finances, their content knowledge, and their goals. Figure 11 is a model of the CPPS tool.

Figure 11*Certification Pathway and Program Selection Tool*

The CPPS tool is designed to have the aspiring teacher reflect on eight areas, or domains, to determine which certification pathway would be the “best fit” for them. As they consider their highest degree of education, their finances, preference between program length or degree earning opportunity, their level of content knowledge to support them on the certification exams, and the level of advisement and support they would need to be successful.

Domain 1: Highest Degree Held

The first step for aspiring teachers is to reflect on the highest degree they hold. If they hold a degree below a bachelor's, the traditional pathway is the best choice. The traditional pathway is recommended because all certified teachers must have a bachelor's degree to be eligible for a role as a lead teacher. Therefore, earning that degree through the Traditional pathway, where they can earn their teaching certificate, is the fastest process. However, for individuals with a bachelor's degree, a nontraditional pathway is the most effective pathway toward becoming a certified teacher. Because the nontraditional route has multiple paths, an aspiring teacher will be asked to continue to domain two in the tool.

Domain 2: Program Length and Affordability

The next step for nontraditional aspiring teachers is determining what type of program they can afford, full-time or part-time. Contingent on the individual's financial circumstances and needs, not every program is the right fit. Aspiring teachers need to reflect on the program's cost, program requirements, and how enrolling in a full or part-time program could impact their salary; therefore, all aspiring teachers will be asked to complete domain three.

Domain 3: Financial Considerations Overview and Quiz

The CPPS tool is interactive and informative; therefore, not only do aspiring teachers answer questions in a quizlike format, but they will also read or watch informative videos about the choices they are about to make. Future teachers will be taken through a module in domain three to understand the cost and timeline of various pathways towards certification. Aspiring teachers need to reflect on short-term and long-term priorities. While program cost is one of the largest influencing factors for aspiring teachers, it is important to note that program cost varies drastically between pathways and programs. There may be opportunities for financial aid, tuition assistance, certification reimbursement, and more contingent upon the program. Aspiring teachers also need to consider how enrolling in a full-time certification program may impact them financially. Aspiring teachers need to reflect on if they are willing and able to forgo full-time salary, take a salary cut, or if they are required to maintain full-time employment and therefore need to work towards certification on a part-time basis. Domain three will have aspiring teachers complete a financial considerations quiz, where they can do a cost-benefit analysis between their pre-EPP enrollment salary and the cost of the chosen certification program.

Domain 4: Prioritizing Program Length or Degree Earning Opportunity

As aspiring teachers, goals, and timelines are incredibly important factors to consider. The length of a program impacts how slowly or quickly one earns a temporary certificate and begins working towards a full certification. If earning an advanced degree is a goal, more studying and time are required. Aspiring teachers will need to determine which is a higher priority: program length or earning a graduate degree. Program length

and degree earning opportunity are tied to program cost, as time spent is money earned or not earned. Ultimately, in this domain, aspiring teachers must reflect on their priorities, finances, and whether program length or degree earning opportunity is more important. Those who choose to earn a degree will be directed to a postbaccalaureate program; however, they will be advised to complete the full CPPS tool.

Domain 5: Content Exam

Every state has a content exam that aspiring teachers must pass to earn a teaching certificate. While the exam is different from state to state, all content exams require aspiring teachers to show mastery in the content area they aspire to teach. The exam is often a barrier to program completion for aspiring teachers, as the cost of these exams is high and the exam is rigorous. Exam costs will be reflected in prior domains, but aspiring teachers will share if they have ever taken the official content exam in domain five. If they have, they will be sent directly to domain seven. If they have not, they will be sent to domain six.

Domain 6: Mock Content Exam

Future teachers will take a mock content exam. The mock content exam is for aspiring teachers to experience better understand their level of content knowledge and preparedness to earn a teaching certificate. Domain six will allow aspiring teachers to preview what is expected of them on their certification category's content exam and how they stand concerning having adequate content knowledge to be successful.

Domain 7: Mock Content Exam Score

Not all pathways and programs are alike; some pathways and programs provide more certification exam support than others. Therefore, for individuals who pass their

mock exam in domain six, the tool will recommend them to the alternative certification pathway and program. However, not being successful on the content exam does not necessarily mean that an aspiring teacher must take the postbaccalaureate route.

Depending on their score and the level of support they may need, an aspiring teacher may be successful in either an alternative or postbaccalaureate program.

Domain 8: Individual Support

As a proxy to evaluate asynchronous or synchronous programs, in the final domain, aspiring teachers on the nontraditional pathway are asked to reflect on the level of individual support or advisement they may need throughout the certification process. Individuals who may not require a high level of support and can self-pace their studies will be advised to join an alternative certification program.

An asynchronous program is not the best fit for individuals who need a medium to high level of support, guidance, and advisement. Those will be recommended to choose between a synchronous or hybrid alternative certification program or a postbaccalaureate program.

Conclusion

Approximately 60% of aspiring teachers who enroll in a teacher preparation program do not complete their program or earn their teaching certificate. As the gap between the supply and demand of teachers continues to grow, there need to be stronger initiatives to recruit and retain teachers in the profession. One way of advising individuals who already aspire to become teachers is to do this.

The Certification Pathway and Program Selection (CPPS) Tool is designed to support aspiring teachers in choosing a certification pathway and program that they can

afford that is aligned to their goals and will support them in earning their teaching certificate. There are hundreds of EPPs, but not every program is the right choice for each future teacher. Using the research from this study and the CPPS tool, aspiring teachers can make more informed choices on which EPP pathway and program is right for them, ultimately closing the gap between EPP enrollers and completers and getting more teachers certified and into the teacher force.

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Appendix 1: Texas-based EPP Recruitment Letter

SUBJECT: <win a Target gift card> Tell us about Teacher Certification Pathway

Dear Educator [insert last name here],

My name is Mira Shah, and I am the Program Director and an Assistant Professor of Practice at [the Texas-based EPP].

I am also a doctoral candidate at the University of Houston and am conducting a research study focused on teacher certification pathways and choices.

You are receiving this email because you are or have been enrolled at a [Texas-based EPP] campus (DFW, Houston, SATX, or Online) between June 2020 and June 2022, and are or were pursuing a Texas Educator Certificate.

I am reaching out to you to see if you would be willing to complete a survey about your certification program choice journey and decision-making process. Participating in this study is entirely voluntary and is not at all connected with your graduate studies at [the Texas-based EPP].

Participation in the survey will take between 5 – 25 minutes. If you are interested, please review the information below and begin the survey. **All participants who complete the survey will have the opportunity to enter themselves in a raffle for a \$25 Target gift card (eight people will win)!**

There are no known risks involved in this research, and no personal information will be collected in the initial survey.

Your participation in this study is entirely voluntary. You choose whether to participate and you will indicate below whether you agree to take part in the study.

If you decide not to participate, there are no penalties, and you will not lose any benefits to which you would otherwise be entitled. You can stop participating in the study at any time, without any penalty or loss of benefits. If you want to withdraw from the study, please contact Mira Shah at mkshah3@cougarnet.uh.edu.

This study has been reviewed by the University of Houston Institutional Review Board.

Access Survey: <https://tinyurl.com/TX-aspiring-teachers-survey>

Best,

Mira K. Shah

Doctoral Candidate

University of Houston – Main Campus

Appendix 2: Recruitment Letter for Snowball (Friends & Family)

Hi, Educator [insert name],

I hope this email finds you well!

As you may know, I am a doctoral candidate at the University of Houston and I am conducting a research study focused on teacher certification pathways and program choices.

I am hoping to survey individuals who have earned or are currently pursuing their Texas Educator Certificate (also known as a teaching certificate) between the years of 2018 – 2022. This includes individuals who would meet one or more of the following criteria:

- **Current Aspiring Teachers (working towards certification):**
Individuals currently enrolled in an Educator Preparation Program
- **Former Aspiring Teachers (incomplete certification):** Individuals who were enrolled in an Educator Preparation Program (between 2018 – 2022), and may have withdrawn or taken a break in earning their certificate
- **Former Aspiring Teachers (certified, not teaching):** Individuals who have earned their Texas Educator Certificate (between 2018 – 2022) but are not in the classroom
- **Current Novice Teachers (holding a certification):** Individuals who have recently earned their teaching certificate (between 2018 - 2022), including a standard, probationary, or intern certificate

If you fall into this sample: would you be able to take a few minutes to complete a survey to support my research?

- Participation will take between 5 – 25 minutes. If you are interested, please review the information below and begin the survey.
- There are no known risks involved in this research, and no personal information will be collected in the initial survey.
- Your participation in this study is voluntary. You choose whether to participate and you will indicate below whether you agree to take part in the study. If you decide not to participate, there are no penalties, and you will not lose any benefits to which you would otherwise be entitled. You can stop participating in the study at any time, without any penalty or loss of benefits. If you want to withdraw from the study, please contact Mira Shah at mkshah3@cougarnet.uh.edu.
- This study has been reviewed by the University of Houston Institutional Review Board.
- All participants who complete the survey will have the opportunity to enter themselves in a raffle for a \$25 Target gift card (eight people will win)!
- Access Survey: <https://tinyurl.com/TX-aspiring-teachers-survey>

If you don't fall into this sample: could you support me in spreading the word to individuals who may? Here are a few ways you can help:

- Share my post on LinkedIn or other social media platforms, to your community.
- Share this survey with targeted individuals in your network.

- Share this language in a text message to individuals in your network.

Please note that I am conducting this survey between February 21, 2022 – March 4, 2022. **If you could share this soon, I would greatly appreciate you.**

If you have any questions, please do not hesitate to reach out to me at
mkshah3@cougarnet.uh.edu.

My sincerest gratitude,

Mira K. Shah

Doctoral Candidate

University of Houston – Main Campus

Appendix 3: Recruitment Letter Social Media Post

Texas teacher friends! Please help out a fellow educator and researcher!

My friend and doctoral candidate, Mira Shah, is working on her doctoral research to better understand how aspiring teachers choose their certification pathways and programs. **If you were certified in Texas, are working towards your teacher certification in Texas, or were enrolled in a Texas certification program between 2018 - 2022, you are the perfect candidate for this survey.**

All participants who complete the survey will have the opportunity to enter themselves in a raffle for a \$25 Target gift card (eight people will win)!

Access Survey: <https://tinyurl.com/TX-aspiring-teachers-survey>

If you have any questions, reach out to mkshah3@cougarnet.uh.edu.

Appendix 4: Survey

Survey: Research Survey: Educator Preparation Program Choice

SECTION 1: Provide Consent and the Chance to win a Target Gift Card!	
<p>We invite you to take part in a research study about certification pathways, programs, and external influencers in choosing a certification pathway because you are currently enrolled in or were enrolled in a Texas EPP between 2018 – 2022.</p> <p>In general, your participation in this research involves individuals who have enrolled in or completed a teacher certification program through an accredited Texas Educator Preparation Program between 2018 – 2022.</p> <p>The primary risk to you in taking part is no known risks, which you can compare to the possible benefit to no personal benefit. However, the possible benefit to society is by determining how to increase the future teacher pipeline.</p> <p>You will not receive compensation for participation. However, you may opt to enter a raffle at for one of eight Target gift cards (worth \$25) at the conclusion of the survey.</p>	
1. I have read the consent information and agree to take part in the research. * (Mark only one oval)	
<ul style="list-style-type: none"> - I agree - I disagree (Skip to Section 13) 	
SECTION 2: Do you meet the criteria for this study?	
2. Are you currently employed by a Local Education Agency (LEA)? * (Mark only one oval)	
<ul style="list-style-type: none"> - Public School District/ Independent School District - Charter Management Organization/ Charter School - Private School - Religious School/ Parochial School - I do not work for a Local Education Agency at the time 	
2. If you work for a LEA, what is your current role at your school? * (Mark only one oval)	
<ul style="list-style-type: none"> - Teacher of Record - Student or Resident Teacher - School-based Paraprofessional - I do not work for a Local Education Agency at this time 	
3. Between January 2018 – June 2022, I was/am enrolled in a Texas-based Educator Preparation Program (see here for a full list of EPPs in Texas: https://tinyurl.com/texas-epps-2020) * (Mark only one oval)	
<ul style="list-style-type: none"> - Yes 	

- No *(Skip to Section 13)*

4. What is your current certification status with a Texas Educator Preparation Program(EPP) or certification program. See here for a full list of EPPs in Texas: <https://tinyurl.com/texas-epps-2020>) * *(Mark only one oval)*

- I am currently seeing certification with a Texas EPP.
- I recently completed and earned my certification with a Texas EPP.
- I recently withdrew from a Texas EPP (between June 2020 - June 2022).
- I am no longer seeking certification with a Texas EPP. *(Skip to Section 13)*

SECTION 3: Your Certification & Educator Preparation Program Choice

5. What type of certificate do you currently hold? * *(Mark only one oval)*

- Standard Certificate
- Probationary Certificate
- Intern Certificate
- Pre-Service (do not hold a certificate, yet)
- I have withdrawn from my teacher certification program and am not pursuing a certification at this time.

6. What is the PRIMARY content you are certified in, working towards certification in, or have attempted to earn? (Think: which was TExES content test are did you take or are planning to take - this does not include STR or PPR)? * *(Mark only one oval)*

- Agriculture, Food, and Natural Resources 6-12
- American Sign Language (ASL)
- Art (EC-12)
- Bilingual Target Language Proficiency Test (BTLPT) – Spanish Braille
- Business and Finance 6-12
- Chemistry 7-12
- Computer Science 8-12
- Core Subjects 4-8 Core Subjects EC-6
- Dance 6-12
- Deaf and Hard-of-Hearing EC-12
- Educational Diagnostician EC-12
- English Language Arts and Reading 4-8
- English Language Arts and Reading 7-12
- Health EC-12
- Health Science 6-12
- History 7-12
- Journalism 7-12
- Languages Other Than English (LOTE) – French EC-12
- Languages Other Than English (LOTE) – German EC-12
- Languages Other Than English (LOTE) – Latin EC-12
- Languages Other Than English (LOTE) – Spanish EC-12
- Life Science 7-12

- Marketing 6-12
- Mathematics 4-8
- Mathematics 7-12
- Mathematics/Physical Science/Engineering 6-12
- Mathematics/Science 4-8 Music EC-12
- Physical Education EC-12 Physical Science 6-12
- Physics/Mathematics 7-12
- Reading Specialist EC-12
- School Counselor EC-12
- School Librarian EC-12
- Science 4-8
- Science 7-12
- Social Studies 4-8
- Social Studies 7-12
- Special Education EC-12
- Speech 7-12
- Technology Applications EC-12
- Technology Education 6-12
- Theatre EC-12
- Other: _____

7. Which Educator Preparation Program are you/were you enrolled in? (If multiple, choose the most recent program you are/were enrolled in). * (Mark only one oval)

- | | |
|--|--|
| <ul style="list-style-type: none"> - 21st Century Leadership - A Career in Education-ACP - A Career in Teaching-EPP (McAllen) - A Career in Teaching-EPP(Corpus Christi) - A+ Texas Teachers - Abilene Christian University - ACT-Houston - ACT-Houston at Dallas - ACT-Rio Grande Valley - ACT-San Antonio - Alamo Colleges - Alternative-South Texas Educator Program - Amberton University - American College of Education - Angelo State University - Arlington Baptist University - Austin College - Austin Community College | <ul style="list-style-type: none"> ○ Sam Houston State University ○ Schreiner University ○ South Texas College ○ South Texas Transition to Teaching ACP ○ Southern Methodist University ○ Southwestern Adventist University ○ Southwestern Assemblies of God Univ ○ Southwestern University ○ St Edwards University ○ St Marys University ○ Stephen F Austin State University ○ Sul Ross State University - Alpine ○ Sul Ross State University - Rio Grande ○ Tarleton State University ○ TeacherBuilder.com ○ Teachers for the 21st Century ○ Texas A&M International University ○ Texas A&M University ○ Texas A&M University - Central |
|--|--|

<ul style="list-style-type: none"> - Baylor University - Concordia University - Dallas Baptist University - Dallas Christian College - Dallas ISD - East Texas Baptist University - Education Career Alternatives Program - Educators of Excellence ACP - EIT: Excellence in Teaching - Hardin-Simmons University - Harris County Department of Ed - Houston Baptist University - Houston Community College System - Houston ISD Alternative Certification Program (ACP) - Howard Payne University - Huston-Tillotson University - Intern Teacher ACP - IteachTEXAS - Jarvis Christian College - Lamar University - LeTourneau University - Lone Star Colleges - Lubbock Christian University - McLennan Community College - McMurry University - Midwestern State University - Mountain View College - North American University - Our Lady of the Lake University - Pasadena ISD - Paul Quinn College - Prairie View A&M University - REG 01 Education Service Center - REG 02 Education Service Center 	<ul style="list-style-type: none"> ○ Texas ○ Texas A&M University - Commerce ○ Texas A&M University - Corpus Christi ○ Texas A&M University - Kingsville ○ Texas A&M University - San Antonio ○ Texas A&M University - Texarkana ○ Texas Alternative Cert Pgm @ Austin ○ Texas Alternative Cert Pgm @ Brownsville ○ Texas Alternative Cert Pgm @ Houston ○ Texas Alternative Cert Pgm @ San Antonio ○ Texas Christian University ○ Texas College ○ Texas Lutheran University ○ Texas Southern University ○ Texas State University ○ Texas Tech University ○ Texas Wesleyan University ○ Texas Womans University ○ The TX Institute for Teacher Education ○ TNTP Academy - Fort Worth ○ Training via E-Learning: An Alt Crt Hybr ○ Trinity University ○ University of Dallas ○ University of Houston ○ University of Houston-Clear Lake ○ University of Houston-Downtown ○ University of Houston-Victoria ○ University of Mary Hardin-Baylor ○ University of North Texas ○ University of North Texas - Dallas ○ University of Phoenix ○ University of St Thomas ○ University of Texas - Arlington ○ University of Texas - Austin ○ University of Texas - Dallas ○ University of Texas - El Paso ○ University of Texas - Permian Basin ○ University of Texas - Rio Grande
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<ul style="list-style-type: none"> - REG 04 Education Service Center - REG 05 Education Service Center - REG 06 Education Service Center - REG 07 Education Service Center - REG 10 Education Service Center - REG 11 Education Service Center - REG 12 Education Service Center - REG 13 Education Service Center - REG 14 Education Service Center - REG 18 Education Service Center - REG 19 Education Service Center - REG 20 Education Service Center - Relay Graduate School of Education ACP - Rice University 	<p>Valley</p> <ul style="list-style-type: none"> ○ University of Texas - San Antonio ○ University of Texas - Tyler ○ University of the Incarnate Word ○ Wayland Baptist University ○ Weatherford College ○ Web-Centric Alternative Cert Program ○ West Texas A&M University ○ Western Governors University ○ Wiley College ○ YES PREP Public Schools Inc./ Teaching Excellence - OTHER/NOT LISTED
<p>8. If your certification program/organization was not listed, what was the name of your certification program?</p>	
<p style="text-align: center;"><i>[open ended response]</i></p>	
<p>9. How did you learn about your certification program? * <i>(Mark only one oval)</i></p>	
<ul style="list-style-type: none"> - Advertisement (billboard, magazine, flyer) - Career Services or Career Counselor or Guidance Counselor - Employer - Job Board - Recommended by a friend or colleague - Search Engine - Social Media - I was assigned to this Teacher Preparation Program 	
<p>These are the various routes to certification, use this to answer the next question.</p>	

<h3>Traditional</h3> <ul style="list-style-type: none"> During undergraduate experience Bachelor's Degree Texas Educator Certification 4 – 4.5 years 	<h3>Post-Baccalaureate</h3> <ul style="list-style-type: none"> After earning an undergraduate degree Master's Degree Texas Educator Certification 2 years 	<h3>Alternative</h3> <ul style="list-style-type: none"> After earning undergraduate degree Texas Educator Certification 12 – 16 months
<p>10. What type of program was your teacher preparation program? * (Mark only one oval)</p> <ul style="list-style-type: none"> - Traditional - Postbaccalaureate or Residency - Alternative Certification 		
<h2>SECTION 4: The Pathway: Choice Influencers</h2>		
<p>Here are the routes to certification:</p>		
<h3>Traditional</h3> <ul style="list-style-type: none"> During undergraduate experience Bachelor's Degree Texas Educator Certification 4 – 4.5 years 	<h3>Post-Baccalaureate</h3> <ul style="list-style-type: none"> After earning an undergraduate degree Master's Degree Texas Educator Certification 2 years 	<h3>Alternative</h3> <ul style="list-style-type: none"> After earning undergraduate degree Texas Educator Certification 12 – 16 months
<p>11. What was your undergraduate degree in? * (Check all that apply)</p> <ul style="list-style-type: none"> - Education Major - Education Minor - Content Specific Major (math, science, history, English, etc) - Content Specific Minor - My undergraduate degree is/was unrelated to education - I have not earned or completed by undergraduate degree - Other: _____ 		
<p>12. Did you earn your teacher certification with your undergraduate degree? * (Mark only one oval)</p>		

- Yes
- No
- N/A – I have not earned an undergraduate degree

13. What are the factors that led to your choosing your certification pathway of choice?

** (Check all that apply)*

- Certification Support - Overall Support
- Certification Support - Content Exam Support
- Degree Earning Opportunity (earning a bachelor's or Master's degree)
- Program Cost
- Program Culture, Beliefs, and Values
- Program Length (how long it would take to get you into a lead teacher role)
- Program Location
- Program Modality (in person synchronous, online asynchronous, hybrid)
- Program Partnerships (ie. district partnerships)
- Referred to by a Close Friend or Family Member
- I did not choose my certification pathway, it was chosen for me (Teach For America, Urban Teachers, district ACP program etc)
- Other: _____
-

14. If you had to rank your top 3 most influencing factors while choosing a certification pathway and program, what would they be? ** (Pick only 3 choices)*

	1st	2nd	3rd
Certification Support - Overall Support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Certification Support - Content Exam Support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Degree Earning Opportunity (earning a Bachelor's or Master's degree)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Program Cost	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Program Culture, Beliefs, and Values	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Program Length (how long it would take to get you into a lead teacher role)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Program Location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Program Modality (in person synchronous, online asynchronous, hybrid)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Program Partnerships (ie. district partnerships)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referred to by a Close Friend or Family Member	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Were there any other influencers that were not listed? *			
<i>[open ended response]</i>			
<i>Use this scale to answer questions below.</i>			

1	2	3	4	5	6	7	
Not important at all	Not important	Slightly not important	Neutral	Slightly important	Important	Extremely important	
16. To what extent was this a factor in choosing your certification program: Certification Support - Overall Support *							
	1	2	3	4	5	6	7
Not important at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely important
17. To what extent was this a factor in choosing your certification program: Certification Support - Content Exam Support *							
	1	2	3	4	5	6	7
Not important at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely important
18. To what extent was this a factor in choosing your certification program: Earning a Degree (Bachelors or Masters) *							
	1	2	3	4	5	6	7
Not important at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely important
19. To what extent was this a factor in choosing your certification program: Program Cost *							
	1	2	3	4	5	6	7
Not important at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely important
20. To what extent was this a factor in choosing your certification program: Program Culture, Belief, and Values *							
	1	2	3	4	5	6	7
Not important at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely important
21. To what extent was this a factor in choosing your certification program: Program Length *							
	1	2	3	4	5	6	7
Not important at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely important
22. To what extent was this a factor in choosing your certification program: Program Location *							
	1	2	3	4	5	6	7
Not important at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely important

23. To what extent was this a factor in choosing your certification program: Program Modality *							
	1	2	3	4	5	6	7
Not important at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely important
24. To what extent was this a factor in choosing your certification program: Program Partnerships *							
	1	2	3	4	5	6	7
Not important at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely important
SECTION 6: Reflect: Your Pre-service Self							
<p><i>For these questions, we want you to think back to the time right before you applied to your teacher preparation program, and answer as that person!</i></p>							
<p><i>Use this scale to answer the questions below:</i></p>							
1	2	3	4	5	6	7	
Not confident at all	Not confident	Slightly not confident	Neutral	Slightly confident	Confident	Extremely confident	
25. How confident did you feel about teaching the subject/content you were hoping to teach? * (Mark only one oval)							
	1	2	3	4	5	6	7
Not confident at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Completely confident
26. Did you study one or more of the subjects that you hoped to teach? (For instance, if you are certified in Math 4-8, did you study math in undergrad or graduate school?) * (Mark only one oval)							
<ul style="list-style-type: none"> - Yes - No 							
27. How confident did you feel about passing the TExES Content Exam for your certification area? * (Mark only one oval)							
	1	2	3	4	5	6	7
Not confident at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Completely confident
28. How many attempts did it take for you to pass your TExES Content Exam? * (Mark only one oval)							

<ul style="list-style-type: none"> - 0 attempts/no attempts have been made yet - 1 attempt - 2 attempts - 3 attempts - 4 attempts - 5 attempts - more than 5 attempts
29. What did you score on your content exam? <i>(optional)</i>
<i>[open-ended response]</i>
30. How many years of full-time work experience did you have, prior to joining your certification program? (in ANY professional field) * <i>(Mark only one oval)</i>
<ul style="list-style-type: none"> - 0 years (no full-time experience) - 1 - 2 years - 3 - 5 years - 6 - 10 years - 11+ years
31. Did you spend any of your prior full-time work experience in education (this can include: any role in a K--12 school, Institution of Higher Education, or education-based non-profit). * <i>(Mark only one oval)</i>
<ul style="list-style-type: none"> - Yes - No
32. If yes, for how many years? * <i>(Mark only one oval)</i>
<ul style="list-style-type: none"> - 0 years (no full-time experience in education) - 1 - 2 years - 3 - 5 years - 6 - 10 years - 11+ years
33. Did you spend any of your prior full-time work experience in a K--12 school? * <i>(Mark only one oval)</i>
<ul style="list-style-type: none"> - Yes - No
34. If yes, for how many years? * <i>(Mark only one oval)</i>
<ul style="list-style-type: none"> - 0 years (no full-time experience in education) - 1 - 2 years - 3 - 5 years - 6 - 10 years - 11+ years
35. Did you ever hold any of these roles? (Full Time or Part Time) * <i>(Check all that apply)</i>

- Daycare Teacher
- Clerk (Front Office, Attendance, etc)
- Interventionist
- Paraprofessional
- School Counselor
- Support Aide / Support Specialist
- Substitute
- Teacher Aide / Teaching Assistant
- Tutor
- I have not held any of these roles.
- Other: _____

SECTION 7: Reflect: Your Pre-Service Goals

For these questions, we want you to think back to the time right before you applied to your teacher preparation program, and answer as that person!

36. When you joined your certification program, what were your short-term goals? *

[open-ended response]

37. When you joined your certification program, what were your long-term goals? *

[open-ended response]

SECTION 8: Current Status: Enrollment at an Educator Preparation Program

Use this scale to answer the questions below.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Agree	Strongly agree

38. I feel as though my Educator Preparation Program is/will prepare me to become a classroom teacher. *

	1	2	3	4	5	6	7	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

39. I feel as though my Educator Preparation Program prepared me to be successful on my certification exams. *

	1	2	3	4	5	6	7	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree
40. I would recommend my Educator Preparation Program to a friend, colleague, or family member. *								
	1	2	3	4	5	6	7	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree
41. What is your current status with your Educator Preparation Program? * (Mark only one oval)								
<ul style="list-style-type: none"> - Currently enrolled, pursuing certification. <i>(Skip to Section 11)</i> - Currently enrolled, NOT pursuing certification <i>(Skip to Section 9)</i> - Completed/graduated from the program WITH a teaching certificate. <i>(Skip to Section 11)</i> - Completed/graduated from the program WITHOUT a teaching certificate. <i>(Skip to Section 9)</i> - Withdrew or have taken a leave of absence from the program at this time. <i>(Skip to Section 10)</i> 								
SECTION 9: Completed Program without Certification								
42. Why did you choose to not earn your certification? * <i>(Check all that apply)</i>								
<ul style="list-style-type: none"> - Certification Exams (too rigorous, unable to pass) - Earned a Teacher of Record Role without Certification - Other Employment Opportunities (in education) - Other Employment Opportunities (outside education) - Program Cost - Certification Exam Cost - Personal Reasons - Other: _____ 								
<i>(Skip to Section 11)</i>								
SECTION 10: Withdrawn from an Educator Preparation Program								
43. Why did you choose to withdraw from your certification program? * <i>(Check all that apply)</i>								
<ul style="list-style-type: none"> - Certification Exams (too rigorous, unable to pass) - Earned a Teacher of Record Role without Certification - Other Employment Opportunities (in education) - Other Employment Opportunities (outside education) - Program Cost - Certification Exam Cost - Personal Reasons 								

- Other: _____

(Skip to Section 11)

SECTION 11: Thank you for your time!

44. What is the highest degree you have earned/completed? * *(Mark only one oval)*

- High School Diploma
- Associates Degree
- Bachelors Degree
- Masters Degree
- Professional Degree
- Doctoral Degree or Higher
- Other: _____

45. Please share the gender you identify with: * *(Mark only one oval)*

- Male
- Non-Binary
- Women
- Other: _____

46. Select your age group: * *(Mark only one oval)*

- Under 18
- 18 – 24
- 25- 34
- 35 – 44
- 45 – 54
- 55 – 64
- Above 64

47. Please share which race/ethnicity you identify with: * *(Mark only one oval)*

- Caucasian
- Black or African American
- Latinx or Hispanic
- Asian
- Native American
- Native Hawaiian or Pacific Islander
- Two or More
- Other/Unknown
- Prefer not to say

48. Would you like to enter the raffle for the chance to win one of eight \$25 gift cards? This would require you to share an email address. * *(Mark only one oval)*

- Yes *(Skip to Section 12)*
- No *(Submit Form)*

SECTION 12: Enter the Raffle!

Please note that email addresses will not be shared or used except for communication regarding the raffle.

If you have any questions, please email mkshah3@uh.edu.

49. Email Address *

[open-ended response]

50. I understand that by adding my email address, I am providing consent to being contacted only for the raffle. * (Mark only one oval)

- I agree

(Submit Form)

SECTION 13: Thank You!

Thank you for volunteering to complete this research survey. Unfortunately, you do not fit the criteria of an aspiring or new teacher who was enrolled in a Texas Educator Preparation Program between June 2020 - 2022.

If you have any questions, please email mkshah3@uh.edu.

PLEASE MAKE SURE YOU HIT SUBMIT, TO SUBMIT THIS FORM.

(Submit Form)

Appendix 5: University IRB Approval



DIVISION OF RESEARCH
Institutional Review Boards

APPROVAL OF SUBMISSION

February 4, 2022

Mira Shah

mkshah3@uh.edu

Dear Mira Shah:

On February 4, 2022, the IRB reviewed the following submission:

Type of Review:	Initial Study
Title of Study:	Attention Aspiring Teachers: How do you choose the right certification pathway for YOU?
Investigator:	Mira Shah
IRB ID:	STUDY00003483
Funding/ Proposed Funding:	Name: Unfunded
Award ID:	
Award Title:	
IND, IDE, or HDE:	None
Documents Reviewed:	<ul style="list-style-type: none"> • SHAH - Letter of Modifications - v2.docx, Category: Correspondence (sponsor, IRB, misc.); • SHAH - Survey - Educator Preparation Program Choice, Influencers, & Decision - PDF - v2.pdf, Category: Study tools (ex: surveys, interview/focus group questions, data collection forms, etc.); • SHAH_HRP_503_IRB - v3.pdf, Category: IRB Protocol; • SHAH_HRP-502e - v3.pdf, Category: Consent Form; • SHAH_Recruitment Letter_v3.pdf, Category: Recruitment Materials;
Review Category:	Exempt
Committee Name:	Not Applicable
IRB Coordinator:	Sandra Arntz

The IRB approved the study on February 4, 2022 ; recruitment and procedures detailed within the approved protocol may now be initiated.



DIVISION OF RESEARCH
Institutional Review Boards

As this study was approved under an exempt or expedited process, recently revised regulatory requirements do not require the submission of annual continuing review documentation. However, it is critical that the following submissions are made to the IRB to ensure continued compliance:

- Modifications to the protocol prior to initiating any changes (for example, the addition of study personnel, updated recruitment materials, change in study design, requests for additional subjects)
- Reportable New Information/Unanticipated Problems Involving Risks to Subjects or Others
- Study Closure

Unless a waiver has been granted by the IRB, use the stamped consent form approved by the IRB to document consent. The approved version may be downloaded from the documents tab.

In conducting this study, you are required to follow the requirements listed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system.

Sincerely,

Research Integrity and Oversight (RIO) Office
University of Houston, Division of Research
713 743 9204
cphs@central.uh.edu
<http://www.uh.edu/research/compliance/irb-cphs/>