

TxEP

Texas Educator Preparation

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*Consortium of State
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MANAGING EDITOR

Elda E. Martinez

ASSISTANT STUDENT EDITOR

Melanie Jimenez

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Elda E. Martinez, TxEP Managing Editor, is the director of teacher education and professor at the University of the Incarnate Word in San Antonio, Texas. Elda earned a Master of Arts in Teaching degree from Trinity University and a Doctor of Education in Organizational Leadership from Teachers College, Columbia University. She taught in the San Antonio Independent School District for ten years in both general education and special education settings. Elda's research initiatives are focused in special education, learning disabilities, and teacher preparation and induction.

Elda has served CSOTTE as TxATE President (2011-2012), TDFE Secretary (2015-2017), and as the TxEP Managing Editor (2017-2020).

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EDITOR'S INTRODUCTION

TxEP: Texas Educator Preparation is the official publication of the Consortium of State Organizations for Texas Teacher Education (CSOTTE). The journal is an extension of the annual fall conference, both serving to disseminate research and practice associated with the preparation and development of Texas educators. Each year, TxEP invites editorials from the past conference chair and one of the CSOTTE organizations. This year's publication includes seven peer-reviewed manuscripts, providing practice- and research-based insight.

Conference Chair, Tim Sutton, reflects on the 2019 conference theme, "Clinical Practice: Challenges and Celebrations". At the time, the importance of clinical practice and preparing teachers for the ever-changing needs of instruction and practice seemed evident. As Tim shares, "Never in our wildest dreams could we have imagined what would lie ahead of us in our preparation of educators."

The Associate and Assistant Deans and Directors of Texas (ADoT) represented this year's CSOTTE contribution. Jannah Nerren, 2019-2020 ADoT President, and Gina Anderson, 2019-2020 ADoT President-Elect, share their editorial, "The Year That Changes Us: Teachers CAN Use Adversity for Opportunity". They discuss the current societal needs and issues that impact the work of educational preparation program leaders and classroom teachers.

Anna L. Fox, Erin Pearce, Melissa Becker, and Lisa Colvin share "An Examination of Learning Assessment Techniques in a Blended Course". This piece presents an overview of their study, which examined traditional online learning assessments and recently developed Learning Assessment Techniques.

Val Hill-Jackson, Diana Wandix-White, and Taylor Gilley's article, "Teacher Residencies in Texas: Advanced Clinical Training for Preservice Candidates", examines teacher residencies. In addition to providing a brief history of residency models, they highlight the Aggie Teacher Education Residency Model.

Amanda Hurlbut and Sarah McMahan discuss teacher induction initiatives in their article, "Building Bridges: Strengthening New Teacher Induction through Digital Means". This article presents a university-based EPP's experience in expanding established induction support to include digital induction tools.

Lauren Kirk's article, "Effects of Primary Grade Literacy Field Experiences on Preservice Teachers' Self-Efficacy," presents a study that investigated preservice teachers' literacy field experiences and development.

Susan Reily, Deborah J. Williams, and Tracy Covington's case study on data collection for the assessment of their teacher preparation program is detailed in their article, "CAEP 4: An Exploration of Measures Used to Assess Teaching Effectiveness".

A history of policy changes governing Texas Educator Preparation Programs is provided by Toni Templeton, Sherri Lowrey, and Catherine Horn, in their contribution, "A Review of Texas Educator Preparation Program Policy".

Deborah J. Williams and Tingting Xu conducted a study of undergraduates' perceptions of research with implications for teacher education programs. Their study and findings are presented in their article, "Perceptions of Research: Comparing Preservice Teachers with Other Majors".

The CSOTTE Board is pleased to present the 2020 publication of TxEP. Texas teachers, practitioners, and researchers are encouraged to contribute to TxEP 2021.

Elda E. Martinez, Ed.D.
University of the Incarnate Word
Managing Editor 2020

CLINICAL PRACTICE: CHALLENGES AND CELEBRATIONS

Editorial: 2019 CSOTTE Conference Chair

Tim Sutton

CSOTTE Chair 2019-2020

What a rollercoaster year education has had since our conference in October 2019. Our conference theme was *Clinical Practice: Challenges and Celebrations*. Dr. Rebecca Burns from the University of South Florida was our keynote speaker. Her presentation addressed recognizing the challenges of preparing teachers in today's high-stakes accountability climate. Never in our wildest dreams could we have imagined what would lie ahead of us in our preparation of educators.

Early in 2020, we began to hear of the virus we now know as COVID-19. Empty shelves became commonplace in the stores where we shopped. All the lessons we taught our children about personal hygiene were now paramount in daily school routines. The month of March roared in like a lion. It was a pivotal month for all educators. Schools closed, and this new reality of virtual education began.

One of our first challenges was to determine how our teacher candidates would obtain their 70 days of clinical teaching. Fortunately, the Texas Education Agency (TEA) allowed Educator Preparation Programs (EPP) to reduce the required number of days and accepted virtual instruction in lieu of face-to-face instruction. Across the state, numerous clinical teachers continued to assist with online instruction in tandem with their cooperating teachers. Testing centers were closed. How were students to complete their certification exams? Again, the TEA made an exception and allowed students to apply for probationary certificates while waiting to sit for their certification exams. Naturally, this caused great angst among clinical teachers in anticipation of securing their first teaching job. However, our resilient pre-service teachers were able to make the best of a less than ideal situation and articulate their technological and virtual instructional skills when interviewing for a teaching position. Surely, normalcy would return soon.

Summer 2020 did not bring any hint of normalcy. EPPs were faced with new challenges. Historically, districts across the state all started within a common timeframe. This would not be the case for the fall 2020 academic year. Start dates varied across the state by as much as three to four weeks. Again, how would clinical teachers meet the required number of clinical teaching days? The Governor's State of Disaster Declaration would continue to provide relief for this challenge. A new challenge became a reality. Partner districts

were hesitant to provide a placement for our pre-service teachers. Would our students be a help or hindrance to the Local Education Agency (LEA)? Field Directors communicated the virtues of our technologically savvy pre-service teachers and the value they would add to the success of the PK-12 student academic achievement. Challenge averted. What else could possibly arise? All clinical teachers are required to have a minimum of three observations. How would clinical teachers be supervised in a virtual setting? Fortunately, the TEA recommended synchronous and asynchronous observations to the State Board of Educator Certification (SBEC). The SBEC approved the recommendation. Another challenge resolved.

The 2018 CSOTTE Conference theme was "Embracing Change." CSOTTE's past Chair, Dr. John Sargent, wrote, "If we are to continue to train the best teachers for our great state, we must embrace the changes and the challenges that come from them." Educators have often commented about the necessity of flexibility. If education is to survive the current and unknown circumstances before us, we must not waver in our resolve for excellence in teaching. This flexibility will be apparent when we gather for our first virtual CSOTTE conference in 2020. I am confident there will be numerous celebrations to share when we meet in person again for our CSOTTE 2021 conference.

THE YEAR THAT REALLY CHANGES US: TEACHERS CAN USE ADVERSITY FOR OPPORTUNITY

CSOTTE Organization Editorial: Associate and Assistant Deans and Directors of Texas (ADoT)

Jannah Nerren, Ph.D.
ADoT President, 2019-2020

Gina Anderson, Ed.D.
ADoT President-Elect, 2019-2020

The Associate and Assistant Deans and Directors of Texas (ADoT) is an organization whose focus is supporting mid-level leaders in Educator Preparation Programs (EPPs) in Texas. This relatively young organization joined the Consortium for State Organizations for Texas Teacher Preparation (CSOTTE) in 2018. Since its inception, ADoT leaders have developed and implemented the annual eLevate Leadership Academy for leaders and aspiring leaders across the state. The premise of the eLevate Leadership Academy is to provide a forum based on three important “Ls.” It is a space where current and future EPP administrators can Listen to each other, Learn from each other, and Lean on each other. Beginning in 2017, the eLevate Leadership Academy has been hosted on the campuses of Stephen F. Austin State University, Texas State University, Texas Woman’s University, and Texas A&M University.

This year, 2020, has prompted a focus on supporting mid-level leaders of EPPs in times of adversity and change. Never has it been more critical for leaders in education to have a network for listening, learning, and leaning on one another for support. The ADoT executive board is currently focused on ways the organization can encourage and equip EPP leaders to proactively plan and implement efforts aimed at meeting the challenges of a changing educational landscape, and on invigorating our efforts at recruiting a diverse pool of teacher candidates and then preparing them as culturally responsive future teachers. We have an intentional focus of providing Texas with a teaching workforce ready to make a difference in the lives of ALL schoolchildren and to confront injustice and inequality in any of its forms in Texas schools.

As EPP leaders across the state are grappling with the challenges of COVID-19 amidst societal tensions, we are presented with a unique opportunity. It has certainly not been easy to make decisions that affect the quality of teacher candidate preparation, while also taking into consideration the health and safety of students, faculty, and staff at our schools and universities. Additionally, we commiserate with our invaluable P-12 partners, as we watch them wrestle with their own unique challenges in making critical return-to-school decisions. The true democratic nature of teacher preparation has been underscored, as we consider

the implications of reduced access to school-based experiences for teacher candidates and the impact on the preparedness of tomorrow’s teaching force. But these difficulties raise the question: What if this was the year that real change finally happened? To date, 2020 has presented many days that have been challenging and have affected each of us in myriad ways. While the challenges of the COVID-19 pandemic continue to offer opportunities for us to learn and adapt, the teachers and education leaders of Texas have demonstrated resiliency and an ability to learn and adjust to the situation that has allowed us to meet the challenges head on. This is evident through the responses of P-12 schools and institutions of higher education who have put their students above all else.

This year, in addition to our school challenges, we have processed images of ventilators and facial coverings, and we have witnessed police brutality, protests, debates, and statues coming down. On some of our campuses, we have reconsidered namesakes and memorials. But as the current spotlight on the racial injustices and social unrest throughout the nation present us with another unique set of opportunities, it seems that it is a time to demonstrate our willingness and our RESPONSIBILITY not to learn and adapt but to learn and change.

We have likely all consumed news, social media, and had conversations with family and friends about the deaths of Ahmaud Arbery, George Floyd, Breonna Taylor, and too many others. As we remember these victims, and as we think about those who violated them, we might consider what these faces have in common with one another. It is this: once upon a time, each of those people was a child in someone’s classroom. Year after year, these victims, AND these perpetrators, were in classrooms. With teachers. Let us transfer that thought to picturing the faces of the children in today’s classrooms and our ability to affect change in those classrooms to make the future better than today and to create classrooms and futures whose hallmarks are access and equality.

Think about this: If one classroom teacher in middle or secondary classrooms teaches seven class periods with an average of 22 students per class, and she has a 35-year career,

she will teach 5390 students over the span of her career. If a professor in an educator preparation program, teaching middle and secondary education majors, teaches three courses of 20 teacher candidates per class in both the fall and spring semesters, he will teach 120 candidates per year. Let's add 30 more for mini and summer semesters for an approximate 150 teacher candidates taught per year per professor.

If those 150 teacher candidates become teachers with 35-year careers, that means that the EPP professor indirectly impacts 808,500 students with ONE academic year's worth of instruction. If an education professor teaches 35 years, he or she could indirectly impact approximately 28,297,500 schoolchildren!

The numbers for elementary teachers are equally eye-opening. If an elementary teacher has a class of 20 students each year for 35 years, she will teach 700 children. The professors in the elementary education preparation program could potentially impact 24,500 children over a 35-year career. While these numbers may be fewer, elementary teachers are capturing kids' hearts and minds in some of the most formative and receptive years of their lives.

These numbers are powerful indicators of the potential for change, and teachers serve in authoritative positions to serve as change agents. For this to become a matter of practice, teacher educators and leaders must be explicit and intentional in developing innovative programs, partnerships, assessments, and evaluations that complement rather than contradict efforts to enact *and sustain* change. This is often difficult and uncomfortable work, for it requires us to look inward and question what we truly believe about teaching, learning, and improving the world in which we live. So, let us each do the math on our own story. And then consider: What is our responsibility as leaders in educator preparation to instill in the next generation of educators a desire, knowledge, and commitment to make an impact on the future of our country? If we are deliberate in preparing future teachers who understand racism and bias, who are committed to equity and access for ALL students, and who understand their responsibility to educate and empower the students in their classrooms to stand against racism and bias, we CAN make a difference. And can this be accomplished in a time that forces us to embrace distance education? I believe that it can. Because Teachers Can. This can be the year that really changes us. Teachers CAN use adversity for opportunity.

AN EXAMINATION OF LEARNING ASSESSMENT TECHNIQUES IN A BLENDED COURSE

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Abstract

Blended and online learning has become a new reality for students and faculty members. As course delivery changes, effective assessment must evolve. Active student engagement enhances learning, and student voice should be considered in this evolution of assessing their learning. This study examined traditional online learning assessments and a recently developed method named Learning Assessment Techniques or LATs (Barkley & Major, 2016). Students completed attitude and satisfaction surveys at the conclusion of each of the six- course modules. Students did not indicate a preference for evaluation techniques but indicated they did appreciate the variety of learning assessments. Students stated the modules using the LAT more clearly tied to module learning objectives.

Keywords: blended instruction, online instruction, learning assessment techniques

Authors' Note: The research was completed during the fall 2019 semester. At that point in time, faculty members had a choice to deliver course content face-to-face, online, or blended in nature. At the midpoint of the spring 2020 semester, the world changed. Rapid adjustments were made to deliver all course content entirely online. The change needed was familiar territory to some professors while uncharted waters for other college and university faculty members. The problem also directly affected students. The challenge was to quickly design assignments relevant to the content while also effectively assessing student learning outcomes. The experience of this research study aided the researcher to confidently make necessary changes and still balance practical and relevant course content. Although perfection was not achieved in the spring 2020 semester, the anxiety of change was alleviated through the lessons learned in this research experience.

As distance learning became a reality for both child and adult learners during the spring 2020 semester, educator preparation programs explored alternative measures to ensure students continued to receive a quality education. Prior to the recent pandemic, university courses were delivered in three primary modalities: face-to-face instruction, online instruction, and blended instruction. The following research further examines the role of blended learning in a preservice teacher literacy course.

Literature Review

When referencing academic achievement, the effects of technology in content delivery have been discussed for decades. Bonk and Reynolds (1997) suggested that challenging and engaging activities must be created to promote higher order thinking in an online format; hence, it is the instructional strategy and not necessarily the technology that influences the quality of the instruction and learning. Clark (2001) posited that the inclusion of technology in the learning environment does not influence achievement but is merely a vehicle to deliver instruction. Similarly, Rovai (2002) concluded that course design

ultimately determines the effectiveness of online learning. Berridge et al. (2012) caution that with the growing popularity and demand for online courses, there continues to be the need for quality and excellent instruction. Through time, digital capabilities have advanced, and researchers have continued to examine the content and course design. McKnight et al. (2016) stated that technology alone does not determine success, but how technology can be used to “enhance and transform student learning” (p.194).

Online and Face-to-Face Learning

Ally (2004) defines online learning as:

The use of the Internet to access learning materials; to interact with content, instructor or other learners; and to obtain support during the learning process, in order to acquire knowledge, to construct personal meaning, and to grow from the learning experience. (p. 7)

Educational programs using the Internet first emerged at the University of Phoenix in 1989. Nine years later, the first fully online programs were founded at New York University Online, Western Governors University, the California Virtual University, and Trident University International. Since the beginning of the 21st century, universities around the globe continue to increase online instruction to deliver specific courses and entire academic programs. Online learning has numerous benefits including convenience, lower cost, and acquisition of acquired skill sets. When selecting an online program, Collins and Liang (2015) reported that students search for the same ingredients found in traditional courses including a relationship with the professor, a knowledgeable professor, and a positive classroom community.

While online instruction tends to be more convenient and affordable, many students report that online programs are less personal and lack the high-quality rigor of face-to-face courses. Miller (2012) found students were less satisfied with online instructional methods compared to traditional methods because they believed more knowledge was obtained through face-to-face instruction even though there was no difference in the quantity or type of course content. Carr (2014) stated students enrolled in online courses performed better on exams, yet were generally less satisfied with the course than students in the face-to-face sections. Carr concluded one of the reasons for the dissatisfaction was the amount of time required for students to complete assignments in online courses.

Comfort with technology is a primary factor in determining satisfaction and success in an online course (Moore & Kearsley, 2012). An increase in time to complete assignments due to unfamiliarity with

technological tools is a barrier to learning. Online learners are more likely to continue in a program if they are satisfied with the course and course content is relevant to their lives (Oh & Lee, 2016).

Blended Learning

Blended learning (or hybrid learning) is an educational approach that merges conventional classroom instruction with online learning experiences (Helms, 2014). Blended learning allows the instructor to design the course components for the benefit of student learning and course time efficiency. Students are able to learn from their instructor and peers within a classroom setting and also from web-based activities and programs using this approach. Overall, in a blended course, students receive better grades and complete courses at a higher rate than online only or face-to-face classes (Twigg, 2015; Vaughan, 2007). Blended learning can also be used when instructors have limited time to teach students in a face-to-face setting, providing flexibility for online content delivery. This type of instruction offers students more freedom with their time; however, learners must have self-discipline and a sense of responsibility to the online classroom environment.

Students’ experiences with blended learning are impacted by a multitude of factors. Research on blended learning suggests students learn best when there is one learning platform where all instructional materials are located and easily accessible (Ahmad & Ismail, 2013). Often, students express satisfaction or dissatisfaction regarding the use of technology within the course (Qasim et al., 2014). Students with strong computer literacy skills tend to do better than those who lack technology skills, which significantly influences their level of satisfaction or dissatisfaction with the course (Maxfield & Noll, 2017; Webster & Hackley, 1997). As with any learning approach, there are advantages and disadvantages for both the instructor and the student. Either party may or may not feel comfortable using technology and the application of unfamiliar formats. Therefore, it is imperative to provide step-by-step instructions for new technologies for both the student and the instructor.

Assessment

Bansal and Pathak (2019) emphasized the importance of assessment design and the application of a blended format. In the text *Understanding by Design*, Wiggins and McTighe (2005) define assessment as:

By *assessment* we mean the act of determining the extent to which the desired results are on the way to being achieved and to what extent they have been achieved. Assessment is the umbrella term for the

deliberate use of many methods of gathering evidence of meeting desired results. (p. 6)

Bansal and Pathak (2019) advocated for blended assessment that includes the use of both summative and formative assessment for the online classrooms. When striving to design learner-centric assessment goals, the authors concluded:

The blend of assessment types is the need of the hour as the summative assessments do not offer much room for self-correction and are evaluative in nature. Implementing formative assessment techniques provide this extra room for self-correction and correction by the teacher as well so that the process remains a well-knit complete process without any loopholes. (p. 58)

In order to apply blended assessment within the course design, the researcher selected the Learning Assessment Techniques (LATs) as defined by Barkley and Major (2016). A LAT is an effective teaching structure with three interconnected components: identify clear goals, provide learning activities to promote active learning, and analyze learning outcomes, which allows for ongoing instructional improvements. The researcher was confident that the LAT assessments and the use of more structured summative assessments would provide an enriching opportunity for students to effectively learn literacy specific content.

Problem and Purpose of the Study

Course content and learning activities in a blended course take place using both face-to-face as well as online formats. The ongoing challenge is to create course components provided through online instruction as meaningful and purposeful as those delivered in a face-to-face format (Berridge et al., 2012). As blended course format increases in popularity, it is essential to gauge whether student attitudes and satisfaction with online modules are consistent with those in face-to-face modules. Likewise, consideration for learning assessment must be part of the course design. It becomes imperative not only to design and allow for summative assessment but also formative assessment (Bull, 2014). Formative assessment provides feedback, enabling students to actively engage, modify, and correct their learning. Module-specific learning assessment ensures online module content is adequately received by the students before moving to the next module. The researcher sought to gain an understanding of students' perceptions of the usefulness of traditional assessments and LATs when learning course content. Addressing the problem of which types of assessments are most beneficial to students will have

practical benefits for instructors of blended learning environments.

The purpose of the research study was to examine the use of LATs designed by Barkley and Major (2016) in online content modules. The researcher specifically asked students if Online Prediction Guide, Online Quotation Commentary, Three-Minute Passage, when used as an assessment, aided students in their learning of the content presented in the reading assessment course.

LATs Defined

Prediction Guides

The first LAT was designed as a pre/post-survey created in the Canvas Learning Management System platform. Ten key concepts of literacy assessment from the module were used in the pre-survey to predict participants' understanding of the concepts. After completing the module, students completed the post-survey to revisit the same questions to gauge a better understanding or need to address misunderstandings. Participants were given additional credit if they completed both the pre/post-survey.

Quotation Commentaries

A second LAT was designed in Canvas using the add-on *Perusall* platform. Miller et al. (2018) described the *Perusall* platform as "an online social learning platform designed to promote high pre-class reading compliance, engagement, and conceptual understanding. Students asynchronously annotate the assigned reading by posting (or replying to) comments or questions in a chat-like fashion" (p.3). An article on the topic of reading comprehension was uploaded to the platform, and students were required to read the article and make annotations. Furthermore, they shared comments about the content-specific information and interacted with peers online. The assessment score used metrics within the *Perusall* platform based on the complexity of comments and feedback to peers.

Three-Minute Passage

The Three-Minute Passage LAT was created in Canvas Studio. Students were given the literacy topic: reading fluency. Participants created and recorded a speech with supporting evidence to demonstrate they understood the content of the module information with a time limit of three minutes. The end-product was uploaded as a video in a Canvas discussion board format. The submission allowed participants to review peer submissions and provide feedback. A checklist and rubric were used to evaluate submissions and peer engagement through comments.

Methodology

The research questions driving this study were:

1. What effect does the use of an online prediction guide have on student attitudes and student satisfaction regarding the content of a blended course?
2. What effect does the use of an online quotation commentary have on student attitudes and student satisfaction regarding the content of a blended course?
3. What effect does the use of a three-minute passage have on student attitudes and student satisfaction regarding the content of a blended course?

A junior-level literacy course, *Assessment and Instruction of Developing Readers*, was offered and specifically designed as a blended course with face-to-face and online components using varied assessments. The course was divided into six modules: three modules of the course incorporated specific LATs such as online prediction guide, online quotation commentary, and three-minute passage, while three modules incorporated a traditional type of assessment including a multiple-choice quiz, peer discussion board, and short essay. The content of the online modules included aspects of literacy and the teaching of reading. Modules 1, 3, and 5 used traditional assessment techniques, and modules 2, 4, and 6 applied a new LAT assessment activity. Conventional assessment techniques and LAT assessment activities were alternated throughout the semester (Table 1).

Table 1

Modules and Assessment Types

Module	Topic	Traditional Assessment	LAT Assessment
1	Assessment in Literacy	Quiz - Multiple choice, True/False	
2	Vocabulary		Prediction Guide
3	Oral Language	Discussion Board	
4	Reading Comprehension		Quotation Commentary
5	Differentiated Instruction	Quiz - Short Essay questions	
6	Reading Fluency		Three-minute Passage

Due to sample size limitations, the research design had participants experience both the control and the treatment assessments. The modules incorporated tools provided by Canvas Learning Management System and add-ons, including Nearpod and *Perusall*. The content in the modules included readings from the course text, demonstration videos, literacy-based infographics, and content-based websites.

Participants

The participants were undergraduate Interdisciplinary Studies majors ranging from 21 to 46 years of age. The students sought one of four certification areas: EC-6 with ESL, 4-8th ELAR/SS with ESL, EC-6 with All-Level Special Education and ESL, or EC-6 with Bilingual Education. The all-female cohort attended class in the evening, taking a block of four to five courses during the week. Two of those courses were blended with both

classes meeting face-to-face for 1.5 hours each week with 1.5 hours of online instructional activities. The students had the option to participate or to not participate during the semester-long research study. Regardless of research participation, all students completed online modules and assessments as a requirement of the course.

The study required students to complete seven Likert surveys and open-ended questions. At the end of each module (LAT and traditional assessments), students responded to a series of survey questions regarding their attitudes and level of satisfaction with various aspects of the module. A survey instrument was developed by the researcher and validated by experts in the field. The goal of the survey was to measure student attitudes and satisfaction with each online module, specifically with assessment techniques. In addition, students addressed open-ended questions in the modules with LATs and at the end of the course.

For each LAT, students were asked to respond to the following six questions, using a scale of 1-5, 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree:

Q1: Clear expectations and learning outcomes

Q2: Helped me meet the course objectives

Q3: Introduced me to new ideas and stimulated my thinking

Q4: Helped me develop my creative thinking skills

Q5: Assessment methods were designed to demonstrate what I learned

Q6: Helped broaden my knowledge and understanding

In modules 2, 4, and 6, students were also asked to respond to one additional question (using the same 5-point Likert scale) regarding the specific LAT used in that module:

Q7: The Online Prediction Guide/ Three- Minute Passage/ Online Quotation Commentary helped develop a strong understanding of the module content.

The scores for questions 1-6 were examined, and the means calculated for each question and module. An ANOVA was used to identify any significant differences between the modules for each question. Where significant differences were indicated, subsequent t-tests were employed to identify specific differences.

Results

The mean and standard deviation for each of the objective questions (using a Likert scale of 1-5) from the survey were calculated. These questions measured student attitudes toward each of the learning assessment techniques. Table 2 presents these scores for each assessment technique (module) and question, as well as the total for the two categories of assessment (LATs and traditional). Modules 1, 3, and 5 were traditional techniques- multiple choice and true/false quiz, discussion board, and short essay. Modules 2, 4, and 6 were new learning assessment techniques- prediction guide, quotation commentary, three-minute passage.

Table 2

Participant Responses by Question and Module

Module	Q1		Q2		Q3		Q4		Q5		Q6	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
1	4.47	0.52	4.40	0.63	4.47	0.74	3.93	0.88	4.47	0.64	4.40	0.63
2	4.31	0.48	4.69	0.48	4.69	0.48	4.00	0.73	4.69	0.60	4.50	0.52
3	4.87	0.35	4.73	0.46	4.73	0.46	4.27	0.70	4.73	0.46	4.73	0.46
4	4.87	0.35	4.73	0.46	4.47	0.83	4.33	0.62	4.67	0.62	4.80	0.41
5	4.56	0.63	4.69	0.79	4.50	0.63	4.06	1.18	4.63	0.81	4.75	0.58
6	4.56	0.63	4.69	0.48	4.50	0.63	4.38	0.89	4.75	0.45	4.81	0.40

Q1: This module provided clear expectations and learning outcomes

As shown in Table 2, the respondents indicated a range of mean scores across the modules, from a low of 4.31 (SD .48) to a high of 4.87 (SD .35). Interestingly, the highest-ranked modules (tied) represented one traditional technique and one newer form of LAT. When the modules were combined (1, 3, 5 and 2, 4, 6), the traditional approaches scored slightly higher than the LATs but not significantly.

All these rankings were in the level of “agree”. An ANOVA revealed there were significant differences among the modules ($F = 2.91, p < .05$). Subsequent t-tests revealed the significant differences were between modules 1 and 3 ($t(25) = -2.48, p < .05$), modules 1 and 4 ($t(25) = -2.48, p < .05$), modules 2 and 3 ($t(27) = -3.69, p < .01$), and modules 2 and 4 ($t(27) = -3.69, p < .01$).

Q2: This module helped me to meet the course objectives

Similar to Q1, respondents reported scores in the “agree” category for each module. The two highest scores (tied) were modules 3 and 4, each with a score of 4.73 (SD .46). The module which received the lowest score was module 1 (mean 4.40, SD .63). The subsequent ANOVA revealed no significant differences among the scores.

Q3: This module introduced me to new ideas and stimulated my thinking

For Q3, module 3 was the highest rated, with a score of 4.73 (SD .46). The lowest scores were received for modules 1 and 4 (tied) with scores of 4.47 (SD .74 and .83, respectively). All scores were in the “agree” category. The subsequent ANOVA revealed no significant differences among the scores.

Q4: This module helped me develop my creative thinking skills

For Q4, scores tended to be lower than the previous questions. The highest score was found for module 6 with a mean of 4.38 (SD .89). The lowest score received was for module 1, with a mean of 3.93 (SD .88). This was actually the lowest score among all questions and modules. Overall, these scores were generally in the “agree” category. The subsequent ANOVA revealed no significant differences among the modules.

Q5: Assessment methods in this module were designed to demonstrate what I learned

Similar to Q4, the highest-ranked mean score was received for module 6 (4.75, SD .45), and the lowest score was received for module 1, with a mean of 4.47 (SD .45). All means were generally on the upper end of the category “agree”. The subsequent ANOVA revealed no significant differences among the scores.

Q6: This module helped broaden my knowledge and understanding

The highest mean for Q6 presented for module 6 (4.81, SD .40) with the lowest mean score for module 1 (4.40, SD .63). Q6 for module 6 was also the highest score among all questions and modules and was very close to a category of “strongly agree”. All means were on the upper end of “agree”. The subsequent ANOVA revealed no significant differences among the scores.

This study focused on comparing traditional assessment techniques with LATs; the mean scores of modules 1, 3, and 5 were combined and compared with the combined mean scores of modules 2, 4, and 6. These results are shown in Table 3. As Table 3 indicates, the modules using LATs outscored the modules using traditional assessment techniques for questions 2, 4, 5, and 6. For question 3, means were almost identical between these two groups (4.57, SD .62 versus 4.55, SD .65). The highest-rated questions for LATs were 2, 5, and 6 (tied) with a mean of 4.70 (SD .46, .55, and .46, respectively) indicating close to the category of “strongly agree”.

Table 3

Participant Responses by Question and Module Type

Modules	Q1		Q2		Q3		Q4		Q5		Q6	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Traditional (1,3,5)	4.63	0.53	4.61	0.65	4.57	0.62	4.09	0.94	4.61	0.65	4.63	0.57
LATs (2,4,6)	4.57	0.54	4.70	0.46	4.55	0.65	4.23	0.76	4.70	0.55	4.70	0.46

Subjective Responses

Students were invited to share open-ended responses on Q7 for modules 2, 4, and 6. For the module 2 assessment, the Online Prediction Guide, student responses included: “This module introduced me to the topic and then allowed me to reflect and test what I learned”, “This really

helped me understand the vocabulary and build my knowledge”, and “It was helpful to have an idea of what was most important before studying, and the review helped me solidify the topic in my mind.” Three of the 16 participants indicated that the Online Prediction Guide tool was the LAT they were most comfortable using.

For the Module 4 assessment, the Online Quotation Commentary, student responses included: “This tool helped me learn about a technology that I could use to collaborate with my classmates, and it was a nice switch-up from GoogleDocs”, “It aided in a way that I had to deepen my thinking on why it was a meaningful quote; plus, I could see what others thought was important”, and “I really liked the *Perusall* Annotation! It made me think deeper on my three highlighted points.” Eleven of the 16 participants indicated that the Online Quotation Commentary tool was the LAT they were most comfortable using.

For the Module 6 assessment, the Three-Minute Passage, student responses included: “Performing an elevator speech helped me summarize important parts of fluency and describe to others”, “This assessment gave me insight to what fluency was all about”, and “I was able to hear others thoughts about fluency and compare them to my thoughts, and it helped me get a better grasp of the subject.” Two of the 16 participants indicated that the Three-Minute Passage tool was the LAT they were most comfortable using.

Conclusion: Lessons Learned

By alternating traditional assessments and LATs in the course, students were allowed to learn a new assessment tool every other week. Students noted the objectives and expected outcomes of the modules were clear most of the time. Apparently, the objectives for the LAT modules were strongly aligned and assisted in making the intent of the learning more apparent to students. These comments support the notion that LATs are effective assessment tools for the online environment as they aid in learning. Students continued to have positive attitudes toward the assessment types throughout the semester and did not prefer one type of assessment over the other.

While students did not prefer traditional assessments over LATs, students were engaged in the online environment. Students were positive about content in an online format and were engaged with both the course

information and their peers. Peer reviews and discussions demonstrated participation, and they seemed energized by these interactions, entering more information and responsive text than required.

In a face-to-face classroom, the LATs can be used to flip classroom content. Students could be held accountable to preview and complete learning events online before the class meets. As a result, the instructor could begin class with an overview of the content and use the remainder of class time for product construction and deepening understanding of course information. Application of the LATs provides feedback to the student in the learning process and assures students arrive in class ready to learn beyond a superficial experience.

Active engagement with content is the most important part of learning. While technology can assist with active learning, students should not spend hours learning new technological tools or become overwhelmed with technology requirements. Technology should be appropriate and seamless, aiding in the teaching of new content. If a new technology is applied, then clear, simplified instructions should be provided by the instructor. Time spent learning technology must be balanced against the time required to learn the course information. Schramm (1977) suggested that learning is influenced more by the content and instructional strategy in the learning materials than by the type of technology used to deliver instruction.

In the aftermath of COVID-19, effective online learning attracts the attention of educators around the globe. Professional educators will continue to investigate new approaches for their students’ success, preschool through adult learners. Assessment of learning must change in online environments, and LATs offer new options. While the traditional online assessments continue to be effective, as this study shows, students appreciate a variety of assessment models. LATs provide a fresh approach to the online assessment of learning and can be added to the educators’ toolbox as they continue to improve pedagogy in an ever-changing world.

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UNIVERSITY-BASED TEACHER RESIDENCIES IN TEXAS: ADVANCED CLINICAL TRAINING FOR PRESERVICE CANDIDATES

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Abstract

Teacher education residencies are an innovative but underutilized clinical teaching practice. Perhaps the reason that university-based teacher preparation programs (TPPs) do not employ residencies more broadly may be due to the lack of clarity about what they are and how they add value to the clinical teaching experience. To address this issue, we begin this article with a brief history of teacher residencies. Second, a typology is offered to help demystify the teacher residency as a type of advanced field experience. We demonstrate the similarities and differences between traditional clinical teaching and a residency for TPP, and then frame the two foremost residency models: conventional and urban. Third, we highlight the Aggie Teacher Education Residency Model (aggieTERM) as an example of an aspirant urban residency model in action. Lastly, the overarching motivation for the use of residencies by TPPs cannot be mislaid, as teaching quality for high-need schools remains the foremost rationale for any innovation that seeks to improve field experiences for preservice teachers.

Keywords: teacher preparation, supervision, residencies, clinical teaching

Student or clinical teaching for preservice teachers, the essential capstone experience in teacher training (Gurl, 2019; Smalley et al., 2015; Steadman & Brown, 2011; Valencia et al., 2009), is in need of transformation (American Association of Colleges for Teacher Education [AACTE], 2018). Teacher residency models may represent one of the most significant reforms in clinical teaching (Darling-Hammond, 2010; Guha et al., 2017a; LiBetti, & Trinidad, 2018; Mourlam et al., 2019; National Center for Teacher Residencies [NCTR], 2018), and signal a powerful response to the enduring challenges of how to select, prepare, and retain highly qualified teachers (Guha et al., 2017b) for Texas schools. Teacher residency programs are, by definition, district-serving teacher education programs that pair a rigorous full-year classroom apprenticeship with masters-level education content. “Residency programs are partnerships among school districts, universities, and other stakeholders to prepare and retain effective teachers” (NCTR, 2018, p. 3). Teacher residencies are opportunities for preservice teachers to be authentically active in the classroom for an extended period and to “experiment with

specific and concrete strategies under realistic conditions” (Pankowski & Walker, 2016, p. 4). This is typically rare in traditional university-based teacher preparation programs (TPPs).

Some scholars argue that the reason traditional university based TPPs are failing to adequately prepare teachers for today’s classrooms is that colleges and universities are still preparing preservice teachers the way they did 50 years ago (Stein & Stein, 2016). Guha et al. (2017b) purport, “Although many teacher preparation programs have evolved substantially, traditional university-based programs have often been critiqued for being academically and theoretically focused, with limited and disconnected opportunities for clinical experience” (p. 31). If America is serious about improving public schools, its colleges and universities need to “make a significant improvement in selecting and preparing the teachers of tomorrow” (p. 191). The perceived stagnation in how teachers are prepared for the classroom has created concern among district leaders and administrators who worry about relying on traditional programs for the preparation of

teachers for their schools (Hammerness et al., 2016). Schools and universities share a symbiotic relationship so that each benefit from the shared training of beginning teachers. For these school-university partnerships, school districts receive short- or long-term human resource capital from student teachers (Ryan & Jones, 2014; Waitoller & Artiles, 2016), while the university-based TPPs receive training sites for their beginning teachers (Stricklin & Tingle, 2016).

The thesis of this article makes the case that residencies are an innovative but underutilized clinical teaching practice. Part of the reason TPPs do not employ residencies more broadly may be due to a lack of clarity about what residencies are and how they add value to the clinical teaching experience. To address this issue, we begin this article with a brief history of teacher residencies. Second, a typology is provided to help demystify the teacher residency as a type of advanced field experience. We demonstrate the similarities and differences between traditional clinical teaching practice and a residency for TPPs and then frame two overarching residency models: conventional and urban. Third, we highlight the Aggie Teacher Education Residency Model (aggieTERM) as an example of an urban residency in action. And lastly, the significance of residencies cannot be lost as teaching quality remains the foremost rationale for any innovation that seeks to improve field experiences for preservice teachers.

A Brief History of Teacher Residencies

The history of the teacher education residency has a circuitous timeline (See Figure 1). Unwittingly, all residencies can trace their genealogy to the training of Black teachers in Black communities during the 19th century. At its core, a teacher residency is a homegrown teacher training approach in which teachers from the community are recruited to teach in their community. In the early 19th century, the Normal School Movement drew, from near and far, the White female teacher to teach across the new nation (Hall, 1829; Meriam, 1905); she often taught in communities from which she was not reared. By contrast, the Black Normal School Movement trained, out of necessity, its teachers for its Black communities. Teaching was one of the few professionals accessible to Black women in the 19th through the mid-20th century (Foster, 1997; Hill-Jackson, 2017; College of Education and Human Development at Texas A&M University, 2019). Gist, Bianco, and Lynn (2019) surmised that for Black teachers:

Often times they are community-teachers-in-the-making with longtime dedicated service as parents, school aides, and activists. The notion of the

community teacher is grounded within the sociopolitical and historical context of communities of color (Murrell, 2001)...And as W. E. B. DuBois (1902) noted more than a century ago, “If the Negro was to learn, he must teach himself, and the most effective help that could be given him was the establishment of schools to train Negro teachers” (p. 1) who were from the communities of the children they served. (cited in Gist, Bianco, & Lynn, 2019, p. 13)

The training of Black teachers transpired in Black communities and Historically Black Colleges and Universities (HBCUs). While limited at their inception, schools of education located at HBCUs have been around since the 1850s. Hill-Jackson (2017) explained that members of the former slave communities formed alliances to begin the work of educating their children and neighbors in homes and churches; slowly one-room schoolhouses sprang up around the South for freed slaves, and:

By the late 1860s the National Land Grant Act of 1862, or the Morrill Act, distributed funds to institutions that emphasized agriculture and mechanical arts; but HBCUs received little to none of this funding. As a response, emancipationists urged Congress to authorize the Second Morrill Act of 1890 that ordered states with apartheid systems of higher education (the restriction of Negroes) to provide land-grant funding support for both systems (Redd, 1998, p. 33). Ultimately, “nineteen Black colleges were established under this provision of the Second Morrill Act...Despite their disparate origins all HBCUs addressed, in some form or fashion, three primary goals: (a) the education of Black youth, (b) the training of teachers, and (c) the continuation of the “missionary tradition by educated Blacks”. (Ogden et al., 1905, cited in Allen & Jewell, 2002, p. 244)

Further, Prairie View A&M University (PVAMU) was established by “the Sixteenth Legislature April 19, 1879, as Prairie View State Normal School in Waller County for the Training of Colored Teachers” (“College History: PVAMU Home”, n.d., para. 3). Therefore, PVAMU has the under-celebrated distinction as founding the first teacher preparation in the state of Texas. PVAMU program, like many HBCUs, was established to train Black teachers to engender “‘community cultural wealth’ that imbues them with and array of knowledge, skills, and abilities to effectively teach Black and Brown youth” (Gist et al., 2019, p. 14).

At the turn of the 20th century, the internship experience was taking root with a similar approach to teacher training. In 1909, Brown University began the first recognized internship in teacher education. “Graduates of

the university were placed in the Providence Public Schools for one full year as half-time salaried teachers under the supervision of a professor of education and supervising teacher” (Klecka et al., 2009, p. 10). For many decades in teacher education, internships operated in marginalized spaces—primarily used in alternate route programs (Boggan et al., 2016)—and did not a widely-utilized practice in university-based TPPs.

Gillam (2019) charted that the 1960s and 1970s gave rise to the pre-residency model comprised of federally-funded the Master of Arts in Teaching programs that started in the 1960s and 1970s at exclusive institutions of higher education. For example, “Columbia, Harvard, Stanford, and the University of Chicago launched yearlong postgraduate programs that traditionally placed teacher candidates in schools for year-long student-teaching internships in the classrooms with expert veteran teachers, while the candidates also took coursework from the university” (p. 20). Fast-forward a decade later, internships were redefined with the advent of professional development schools (PDSs), established out of a philosophy of shared responsibility for teacher preparation between universities and schools (Darling-Hammond, 1994; Teitel 2004) to prepare teachers for hard-to-staff school districts. McKinney et al. (2008) trace the history to reveal that PDSs:

evolved in the mid-1980s to focus on urban school reform while igniting public schools and university partnerships. The partnerships would assume greater responsibility for the preparation and retention of new teachers for urban districts when compared to traditional teacher preparation programs. (p.70)

According to Hallman (1998), the theory-to-practice ideas of internships were used extensively in PDSs in the state of Texas.

In 1991, the Texas Legislature passed legislation and authorized funding for the Centers for Professional Development of Teachers originally called Centers for Professional Development and Technology (CPDTs). The CPDTs are designed to support collaboration among public schools, universities, regional education service centers, and other organizations to improve teacher preparation and professional development...[By 1998] the CPDTs comprised 43 universities, 15 regional education service centers, and 113 school districts. (p. 3)

The best practices of PDSs have evolved into what are now referred to as grow-your-own programs (Skinner et al., 2011). Grow-your-own is a phrase used to define homegrown teacher training pathways for high school students (Goings et al., 2018) and paraprofessionals

(Bianco & Marin-Paris, 2019). For the TPP pathway, grow-your-own initiatives involve the preparation of preservice teachers through the shared governance of school-university partnerships (Schmitz et al., 2012).

The 1990s was a looming time of experimentation with the PDS model as internships were in operation in urban contexts (Haberman, 1991). By the beginning of the 21st century, an amalgamation of the PDS model and the internship evolved into the residency model by urban education scholars (Cantor, 1998; Groulx, 2001; Guha et al., 2017a; Guha et al., 2017b; Ng, 2003; Shakespear et al., 2003). Building on the medical education residency model, teacher preparation programs provide residents with both effective teaching theory and a year-long, in-school “residency”. This allows preservice teachers to practice and hone their skills and knowledge alongside an effective teacher-mentor in high-needs classrooms that are context-specific. Launched in 1999, the Urban Teacher Training Collaborative (UTTC) is one of the early university-based residency initiatives with a focus on community with a culturally relevant curriculum (Shakespear et al., 2003). The UTTC offered curriculum modules to familiarize its interns with the diverse communities and cultures from which their students come. “This effort is based on the belief that teacher preparation courses do a great job of focusing on students and content but not on communities or building relationships with adults in schools” (p. 3). Darling-Hammond (2008) also outlined the earliest teaching residency work such as Chicago’s Academy for Urban School Leadership (AUSL), the Boston Teacher Residency Program, and the Boettcher Teachers Program in Denver that were launched in a number of urban centers around the country at the start of the century.

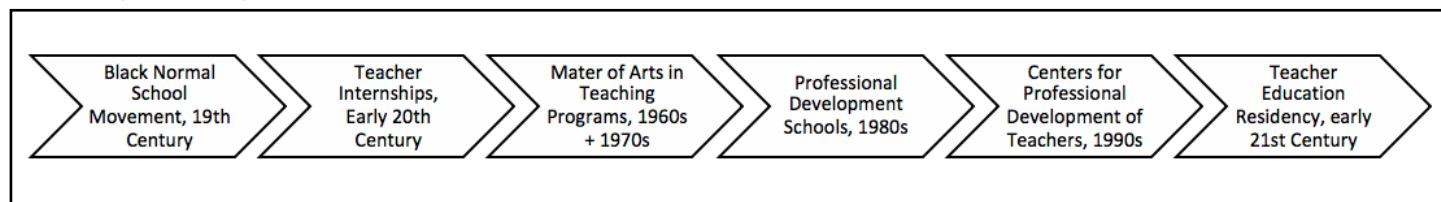
These programs carefully screen and recruit talented college graduates who are interested in a long-term career in urban teaching, offering them a yearlong paid residency under the tutelage of master teachers. During the year, while they learn to teach in the classroom of an expert teacher, recruits take carefully constructed coursework from partner universities who work closely with the residency sponsor. (p. 732)

The pioneering work of these programs collectively became known as the NCTR in 2007 (Gillam, 2019) and help launch national and state-wide calls for teacher preparation to move from generic field-based approaches to innovative residencies for preservice teachers. For example, in 2016, the Texas Education Agency (TEA), with the support of Commissioner Morath, set forth a Strategic Plan in which Goal 1 of 6 proposed that the “agency will improve educator preservice and in-service training, and implement systems of educator improvement” (p.4). A specific action item of the Strategic Plan sought to

“incentivize and support clinical residency models in teacher preservice programs” (Texas Education Agency [TEA], 2016, p. 4).

Figure 1

Timeline of University-Based Teacher Education Residencies



As a means to attend to the growing attrition and teacher-student diversity gap (Ingersoll, 2004; Zhang & Zeller, 2016) and inspire unique clinical experiences across the state, TEA started The Grow Your Own (GYO) Grant program. GYO is a competitive grant program, made up of pathway 1 (high school students), pathway 2 (paraprofessionals), and pathway 3 (university-based residencies for preservice teachers); intended to accelerate increased entry of qualified, diverse candidates into the teaching profession, particularly in rural and small school settings. In 2018, three university-based TPPs for pathway three received this grant award (Stephen F. Austin University, Texas Tech University, Texas Women’s University). In 2019, five TPPs received a Pathway 3 GYO grant (Texas Tech University, Texas Women’s University, Texas A&M University, Texas A&M University-Commerce, and Texas A&M University-Corpus Christi). In 2020, four TPPs received a TEA GYO - Pathway 3 grant (Texas Tech University, Texas Women’s University, Texas A&M University, and Texas A&M University-Corpus Christi). The total number of teacher education students enrolled in year-long Pathway 3 residencies is 192; 23 for Cycle 1, 109 for Cycle 2, and 60 for Cycle 3 (R. Coleman, personal communication, March 18, 2020). TEA reports over 41,000 first-time teachers in Texas classrooms for 2018 (TEA, 2019a). Therefore residencies—as a novel and widely applied field experience—have yet to make the types of inroads needed to transform the clinical experiences of preservice teachers. A shift to residency models compels a change in the quantity and quality of required clinical practices. These models vary in their locale, intensity, and application of clinical experiences.

(Re)Defining Field Experiences: Preclinical and Clinical Phases of Teaching

The backbone of any teacher preparation program is fieldwork (Kirk, 2019; Shelton et al., 2020). While field experiences have always been a part of teacher education, there is no disagreement among teacher education professionals that field experiences a critical feature of teacher preparation. McKinney et al. (2008) affirm there is an obvious “need for teacher preparation programs to develop a strong field experience that unites professional practice and pedagogical coursework” (p. 73). Field experiences reflect a practical orientation to teacher preparation (Hodges & Baum, 2019) and “commonly touted as the most meaningful part of preservice teacher preparation” (Knowles & Cole, 1996, p. 648). The fieldwork for traditional TPPs broadly embodies three major features:

1. *coursework and foundational courses* during the first two years of the program;
2. *methods courses specific to content area* focus or one’s certification area during the third year;
3. *clinical teaching experience (field experience)* during the culminating year.

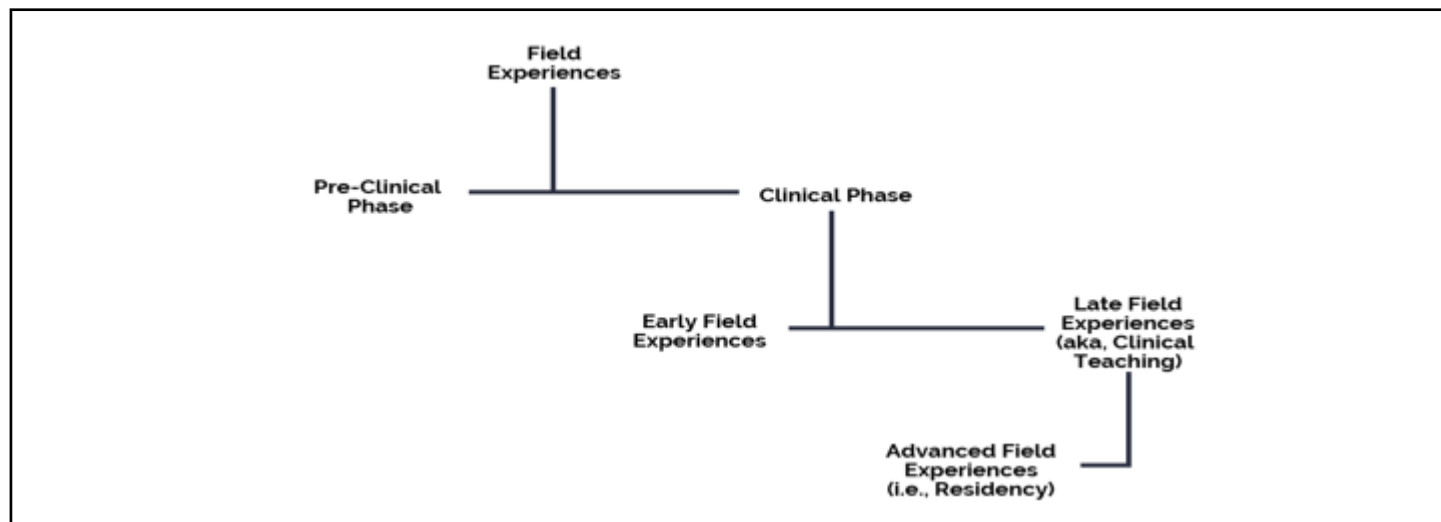
Field experiences intend to provide preservice teachers with “active involvement in school contexts so that the application of teaching approaches and methods can be experienced” (Dorel et al., 2016, p. 41). New teachers commonly report their TPP fieldwork to be the most useful component of their developing self-efficacy (Goodwin et al., 2016), and most of these teachers receive minimal support in developing a strong understanding of classroom dynamics before entering the field full-time (Pankowski & Walker, 2016). Additionally, field experience is critical not

only to bridge the gap between theory and practice, but also to “shaping preservice teacher’s beliefs and knowledge base” (Dorel et al., 2016, p. 42). The two phases of fieldwork at university-based TPPs are characterized by

their types of experiences: out-of-classroom experiences, or *preclinical phase*, and in-classroom experiences or *clinical phase* (see Figure 2).

Figure 2

A Typology of Field Experiences for University-Based Teacher Preparation Programs



Pre-Clinical Phase

As teacher candidates engage in field-related work such as volunteering and microteaching—in community and non-profit spaces where families and children are served—these types of experiences are determined to be preclinical. There are broad studies that propose every teacher should see himself or herself as a community teacher (Boyle-Baise, 2005; Boyle-Baise & McIntyre (2008); Burant & Kirby, 2002; McDonald et al., 2011; Murrell Jr, 2001; Zeichner et al., 2015), who spends time learning from, and valuing, families and the knowledge they bring to bear (González et al., 2006). These types of preclinical field experiences, such as working in museums (Hamilton & Margot, 2019; Hill-Jackson & Lewis, 2011; Nichols, 2014), should be littered throughout coursework before the clinical phase of teaching as they prime teacher candidates’ attitudes for diverse learners and families. While some restrict field experiences as hands-on experiences during the sheltered student teaching semester, scholars like McDonald et al. (2011) expand the idea of field experiences for candidates to include “intensive immersion experiences in communities” (p. 1672) prior to the clinical phase of teaching. Hallman (2019) proposes that the integration of community-based field experiences into teacher education programs as promising sites for teachers’ learning.

Clinical Phase

Once the teacher candidate transitions into school and classroom-related experiences, then the preservice student has officially entered the clinical phase of teaching. The clinical phase is comprised of early field experiences (such as observations, small group discussion, assisting the mentor or cooperating teacher, and mini-teaching) as well as late clinical teaching in which preservice teachers are placed in the classrooms alongside fully certified teachers.

Early field experiences. According to the American Association of Colleges for Teacher Education (2018), nearly nine out of ten teacher preparation programs in elementary and secondary education require teacher education candidates to participate in early teaching field experiences (i.e., observations, tutoring, and small group lessons). Per TEA requirements, preservice students are required to spend a minimum of 40 hours in early field experiences. Usually designated in early entry and methods courses, these experiences typically take place once or twice a week toward the beginning of the preparation program (Darling-Hammond & Cobb, 1995).

Late field experiences. These clinical experiences at the latter portion of teacher candidates’ training are designed to provide opportunities for students to observe, plan, implement, and evaluate instructional materials and

techniques to meet the varied learning needs of students. Being able to bridge theory to practice is essential to the development of effective, well-prepared, quality teachers (Hill-Jackson et al., 2019; McKinney et al., 2008; Select Committee of HSI-Serving Deans and Educators, 2016). Traditional clinical or student teaching typically takes place in the last semester and is part of the latter segment of the clinical phase for most TPPs in Texas. It requires one to display the knowledge, skills, and attitudes about teaching and learning that have accrued through the undergraduate experience. The clinical teaching semester is a valuable professional experience in teacher preparation since it represents the bridge between professional preparation and professional practice. TPPs at universities in Texas usually encompass a clinical or student teaching experience in which preservice teachers assigned to a campus receive 72 days of observation, modeling, and practice lessons.

Teacher residencies as advanced clinical teaching.

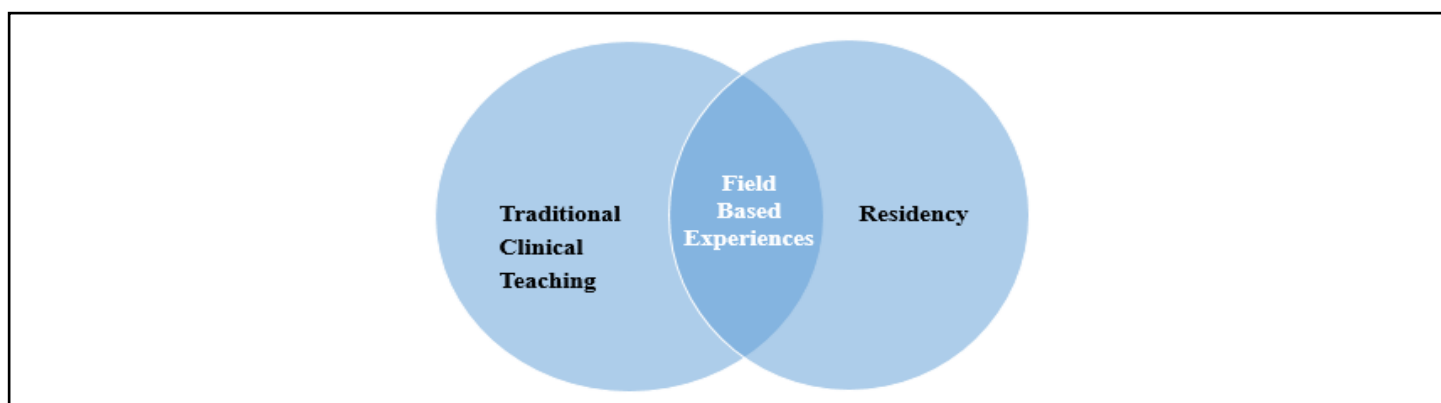
Some universities across the nation and Texas are shifting to a student teacher residency model. In this model, preservice teachers spend much longer than one semester at a school. Rather than being placed in a school for 12-16 weeks in the second semester of an academic year, the residency model provides college seniors access and immersion throughout an entire academic year. While all teacher residencies are clinical practice, not every clinical practice is a residency.

Teacher candidates have an extended opportunity to practice their craft under the close guidance of an experienced and effective PK-12 teacher who is licensed in the area that the candidate is preparing to teach. These extended residencies also include supervision and mentoring by a representative of the preparation program who, along with the PK-12 teacher, ensures the candidate is ready for program completion and recommendation for licensure. Typically, student/clinical teacher residencies allow college seniors to spend an entire academic year in a high-needs school. The intent of field experiences for residencies and clinical teaching experiences are intentionally similar, but they fundamentally differ in the preparation of the residents (see Figure 3).

- In traditional clinical teaching, the teacher candidate has experiences that are aligned with the university calendar; comprised of one semester (i.e. seventy-two days); carried out alongside one cooperating teacher and faculty supervisor, and are university driven.
- In residencies, the teacher candidate has experiences that are aligned with the school district's calendar, comprised of an entire school year, and carried out alongside one cooperating teacher and faculty supervisor. Further, opportunities to examine various classroom contexts are included, and all clinical decisions are school-university driven.

Figure 3

Differences and Similarities Between Traditional Clinical Teaching and a Teaching Residency



Residency programs meet the needs of their partner districts by creating a robust talent pipeline that provides and prepares teachers committed to closing achievement gaps. Furthermore, residency programs are widely recognized by key stakeholders for their positive impact on school climate and student achievement (NCTR, 2018, p. 13). A review of the literature on teacher education

residencies reveals that there are mainly two types of teacher residencies: conventional and urban.

Conventional residency model. This type of residency program is the most common and found in various types of school districts (e.g., rural, suburban, or urban) and initiated by traditional colleges of education around

programs that are considered high-need (i.e., STEM, special education, bilingual education, etc.). College students begin their senior year with master teachers in high-need schools. Rather than spend their final months as a student on their university campus, they begin working in the school districts as residency students, putting to practice the pedagogical theories they have studied at the university. The crucial elements of a conventional teaching residency include more one-year clinical experience (Darling-Hammond, 2010), increased opportunities to connect practice to theory (Cuenca et al., 2011; Retallick & Miller, 2010; Zeichner, 2010), enhanced induction (Wang et al., 2008), stipend (Stein, 2019, para. 6-7), and effective mentors (Darling-Hammond, 2014; Dorel et al., 2016; Goodwin et al., 2016).

Urban residency model (URM). The crucial features of an urban residency model encompass all the elements of a conventional model, but also include additional qualities that are unique to the urban experience. The URM is comprised of best practices in field experiences located in urban or high-needs environments for a one-year term. URM train preservice teachers alongside effective mentors, leverage the support of a site-specific instructional coach (Podsen & Denmark, 2013; Gardiner, 2011; Hobson et al., 2009), follow the school district's academic calendar, offer graduate credit, are implemented at any year in the teacher preparation program, focus on culturally relevant teaching, and are driven by mutually beneficial school-university partnerships (see Table 1).

The term “urban” as it applies to school systems, has been loosely defined as well as debated. For this article, we will use the definitions provided by Milner (2012), who offers three descriptions for different types of urban environments. *Urban intensive* encompasses large, dense urban centers with greater than one million residences like Dallas and Houston. *Urban emergent* defines those centers with less than one million residents, often near urban intensive school districts, and experiencing similar educational challenges. Finally, *urban characteristic* refers to districts in suburban or even rural schools that are beginning to take on characteristics of districts in other urban areas. Obstacles associated with changing demographics, students with low socioeconomic status, and increasing immigrant populations establish rural and suburban districts' urban characteristics. Many scholars of urban and multicultural education propose that teaching internships and residencies must be reoriented to propel equity pedagogy for underserved learners and:

Social reconstructivist teacher education programs add a substantive agenda, connecting pedagogy with social justice. They seek to develop a teaching force with the skills and dispositions, not only to teach in these

schools of greatest need, but also to be change agent social justice educators dedicated to challenging deeply held notions of schooling and society. (Shakespear et al., 2003, p. 5)

Urban education scholars believe that offering teacher residencies that prepare teachers for targeted settings with urban characteristics will support increased teacher quality by providing authentic clinical experiences where the teacher candidates will likely be hired (Gaikhorst et al., 2015; Hammerness et al., 2016; McKinney et al., 2008) and where their training to teach diverse learners can be enhanced. Traditional clinical teaching experiences and conventional residencies continue to neglect culturally sustaining approaches in the field experiences of preservice teachers and

programmatic approaches to multicultural concerns, culturally relevant teaching, or social justice issues typically remain isolated from the core teacher education curriculum. In part and as a result, the overall impact of such efforts on preservice teachers' beliefs and practices is limited and often shorter. In the context of the increasing demand to prepare teachers for schools with diverse students, teacher education programs dissatisfied with the limitation of current approaches continue to search for structural, curricular, and pedagogical solutions. (McDonald et al., 2011, p. 1670)

Since two out of three P-12 learners in the state of Texas are diverse learners (TEA, 2019b), TPPs that offer teacher residencies must give special attention to the shifting demographics in Texas.

The Aggie Teacher Education Residency Model (aggieTERM)

In response to the pressing need to support teachers in becoming agents of change for diverse student bodies, the Aggie Teacher Education Residency Model (aggieTERM), housed in the College of Education and Human Development at Texas A&M University, began in 2019 as a selective residency program for prospective teachers to teach in high-need school districts (Department of Teaching, Learning and Culture [TLAC], n.d., para. 2; Katz, 2019. Based on Bryan ISD's employment needs, the aggieTERM program's first cohort finished in spring 2020. It produced and supported 11 early childhood through grade six bilingual teacher candidates, with English as a second language endorsement, in a year-long clinical teaching experience for Bryan ISD. Although partnered with a rural-suburban school district, the aggieTERM residency embraces the best practices of a URM. Bryan ISD's student body includes approximately 16,000 students - nearly 70% are at-risk students, 26% speak English as a

second language, and 76.8% hail from economically disadvantaged households (Texas Tribune, n.d.).

The aggieTERM program leverages a 5-point Comprehensive Community Induction Framework[®] (CCIF). There is an impressive body of research on the aspects of teacher preparation that have the most impact on quality teachers. The CCIF[®] (see Figure 3) is informed by a review of the current research on residencies and induction and illustrates key considerations for a robust and meaningful comprehensive induction program. The CCIF[®] is driven by five fundamental attributes that researchers link to quality residencies:

1. *A coherent vision of teaching between school and university partners.* The preparation of future classroom teachers must prepare them for culturally diverse classrooms. The aggieTERM program serves as the laboratory in which residents have opportunities to implement a variety of instructional strategies, materials, and technologies for working with diverse populations in high-need schools. Residents placed in high need schools have frequent and supported opportunities to apply evidence-based theories of child development and high leverage teaching practices in real school settings—driven by culturally relevant pedagogy (CRP). CRP is a pedagogical mindset and set of teaching approaches to empower students socially, intellectually, and politically (Ladson-Billings, 2014). As residents gain in the knowledge, skills, and dispositions of an equity pedagogue, they concurrently gain a sound understanding of their role as agents of change. Residents learn how to abandon a deficit perspective of students' cultures (Ford et al., 2001), and to use instruction to validate P-12 students' cultures to elevate interests and thereby improve academic performance (Borrero, & Sanchez, 2017; Brown et al., 2019; Christ & Sharma, 2018).
2. *Comprehensive strategies that enhance clinical experiences.* Comprehensive approaches to support preservice teacher programs accelerate the professional growth of new teachers, reduce the rate of new teacher attrition, decrease human resources costs for school districts, and increase student learning (Ingersoll et al., 2016). Residents receive closely supervised interaction with faculty, experienced teachers, principals, other administrators, and school leaders. Beginning teachers who receive multiple supports are less likely to leave the profession after the first year (Ingersoll & Smith, 2004). A comprehensive approach to onboarding beginning teachers can nurture the growth of teaching quality of beginning teachers (Davis & Higdon, 2008; Mitchell et al., 2019). The aggieTERM program consists of a plethora of activities for all stakeholders and takes advantage of existing school and university structures that allow experimentation and adaptation.
3. *Shared governance.* The key to a successful school-university partnership is authentic alliances between each entity whereby the mutual benefits drive the relationship, vision, goals, and outcomes. The nature of the collaboration dictates a shared commitment for selecting residents, professional learning, the collection and analyses of data, and retention of residents to positively impact P-12 students' academic and emotional achievement (Burns et al., 2016; McCall et al., 2017).
4. *Developmental induction training for clinical teachers and mentors.* The teaching profession has a retention problem. New teachers leave the suburbs at an average rate of 35% after five years (Ingersoll et al., 2016). In most high-need schools, new teachers are departing at alarming rates; some estimate upwards of 50% are gone by year five (Blake 2017; Hill-Jackson et al., 2019; Hill-Jackson & Stafford, 2017). Breaux and Wong (2003) advise that an induction process is the best way to send a message to your teachers that you value them and want them to succeed and stay. Induction activities for aggieTERM include orientation to the workplace, but then continues to be a planned and systemic approach to supporting the beginning teacher into the profession (Kozikoğlu, 2018; Mitchell et al., 2019) and features socialization, mentoring, and guidance through beginning teacher practice. Induction works (Carver & Feiman-Nemser, 2009; Ingersoll & Smith, 2004; Johnson & Birkeland, 2003; Mitchell et al., 2019; Weiss & Weiss, 1999) but it must be more than the guidance provided to new teachers in the first weeks of their teaching assignment. Beginning teachers and their mentors need a prolonged set of learning experiences that utilize job-embedded induction activities (Bolen, 2018), sustained over the first two to three years of their career (Kearney, 2019), utilizes professional learning communities (De Neve & Devos, 2017), promotes a growth not evaluative model (Amrein-Beardsley & Collins, 2018). The aggieTERM program that our instructional mentors also receive training that is growth-oriented (Luet, Morettini, & Vernon-Dotson, 2018; Weisling & Gardiner, 2018) through the We Teach Texas P12 Mentoring and Coaching Academy; learn more at <https://education.tamu.edu/mca/>.
5. *Anchored in the community.* This attribute is based on the belief that good teachers know the school, while exemplary teachers understand their learners'

community. The aggieTERM program utilizes mentors, a site coordinator/coach, university supervisors, community mentor, and a school-university leadership team to provide a ‘culture of community’ for the aggieTERM teacher candidates. We do this with community service, community tours, and professional gatherings at sporting events, game nights, book clubs, cultural field trips, and holiday gatherings. All stakeholders engage to form a sense of belonging for the resident and are willing to “go off script to build connections, letting the candidates know that we care about them professionally and personally” (Coburn, 2020, para. 6). Teacher education experiences that are embedded in the community (Hill-Jackson, 2017) positively impact candidates’ perceptions of diverse learners (Murrell, 2001).

aggieTERM: A Three-Pronged Residency Scheme

The general themes of aggieTERM’s CCIF[®] can be organized into two overarching goals: To provide an orientation and activities to familiarize the inductee with high-need ISDs and to cultivate the professional knowledge, skills, and dispositions of the inductee. The residency scheme for supporting novice teachers in the CCIF[®] is cemented in evidence-based approaches that are *comprehensive, coherent, and sustainable* (Wong, 2005).

Comprehensive. The aggieTERM program structure consists of many activities, components, strategies, and stakeholders. Comprehensive induction programs accelerate the professional growth of new teachers, reduce

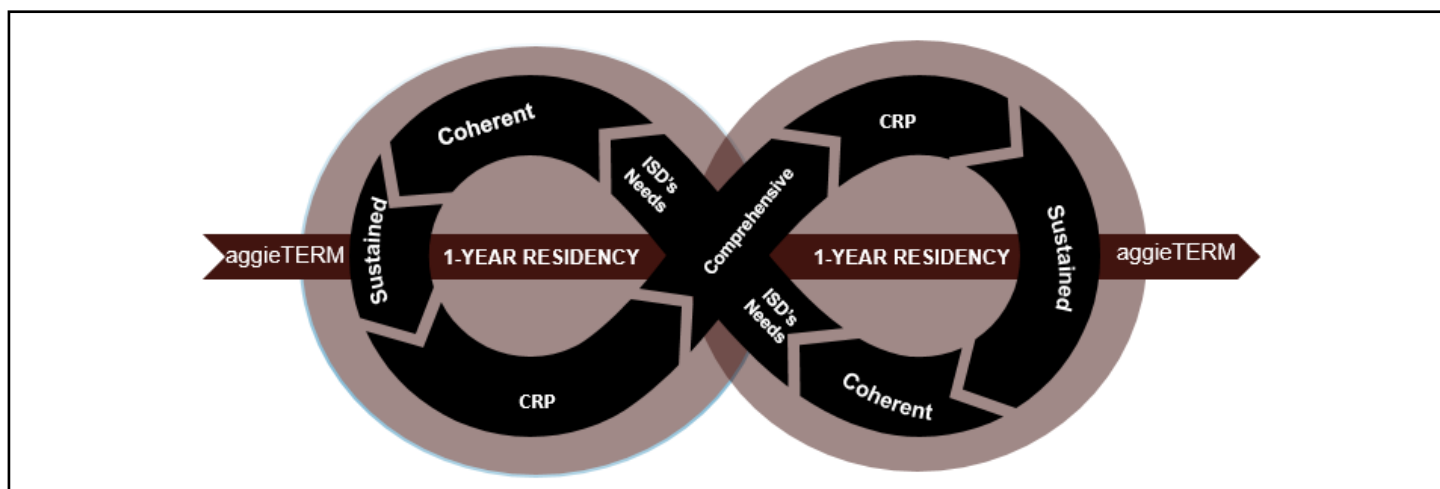
the rate of new teacher attrition, decrease human resources costs for school districts, and increase student learning (Ingersoll & Strong, 2011). aggieTERM utilizes mentors, a site coordinator/coach, university supervisors, program leaders, community mentor, and an ISD-CEHD leadership team to provide a ‘culture of community’ for the aggieTERM teacher candidates.

Coherent. The various factors, program endeavors, and priorities are linked to each other and undergirded by the 10 Teacher Induction Standards (New Teacher Center [NTC], 2018). Leveraging clinical teaching structures at the university, alongside district-level programs and processes for beginning teachers, aggieTERM can adapt to integrate processes to connect a community of support for logically teaching residents.

Sustained. The ideal form of induction is well-articulated and sustained for many years. Following best practices, aggieTERM will include support to its teachers beyond the first year of the residency. Novice teachers need ongoing emotional (Dickee et al., 2015; Hill-Jackson, 2018; Ripski et al., 2011) and instructional (Dunne & Villani, 2007) support for the first three years of their practice. Meaningful induction may improve the efficacy of new teachers (NTC, n.d.), and it helps them forge deep connections with the school district and the community (Wang et al., 2008). Figure 4 exhibits the CCIF[®], which continuously embeds the requisites of high-need ISDs and CRP in ways that are comprehensive, coherent, and sustained.

Figure 4

aggieTERM’s Comprehensive Community Induction Framework[®] (CCIF)



The aggieTERM program is embedded in a rural-suburban environment but leverages the sensibilities of a URM. The aggieTERM trains teachers that have a unique cultural match to the district that they serve. In addition,

the preservice teachers are selected because they embody a disposition for diversity and are willing and eager to receive additional professional development to enhance their cultural sensitivity for underserved learners.

Table 1

Program Indicators of a Traditional Clinical Teaching, Conventional Residency, and an Urban Residency

Program Indicators	Traditional Clinical Teaching	Conventional Residency	Urban Residency
Candidates are required to complete TEA's 72 days or 1-semester of classroom experience	X	X	X
Candidates receive training alongside a mentor and university supervisor	X	X	X
Candidates are in the field for two semesters, year-long experience		X	X
Candidates are training alongside an instructional coach/site supervisor		O	O
The program follows the school district's academic calendar		X	X
Candidates take graduate credit courses or are enrolled in a graduate program.		O	X
Implemented any year in the preclinical or clinical phase of teacher education.			X
Candidates have a disposition for culturally responsive teaching.		O	X
The school and university leaders share governance of the program		X	X

Note. X=indicator present; O=indicator may be present

The relational-cultural knowledge and CRP that residents gain through urban-minded residencies further enhance their prospective as well-rounded, amply prepared future educators. Preservice teachers who have a positive mindset toward working in urban school environments with students from diverse backgrounds, are characterized as more capable of meeting the needs of these underserved schools (Hill-Jackson et al., 2019; Pankowski & Walker, 2016). Teacher education scholars report that teacher residencies produce classroom-ready teachers who are committed to teaching in high-need school districts (Dorel et al., 2016; Hammerness et al., 2016).

Implications for Teaching Quality

“A clear definition as to what constitutes teacher quality has become a national debate, [and] teacher education programs have borne harsh criticism for not producing quality teachers” (Tracz et al., 2017, p. 8). Teaching quality is the most important school-based factor associated with student achievement (Goldhaber et al., 2017). Empirical studies even show that “one standard deviation increase in teacher quality raises student achievement in reading and math between 10% and 25% of a standard deviation” (p. 354). Through the No Child Left Behind (NCLB) Act of 2002, the federal government

required each state to define “highly qualified teacher” and develop a method for producing teachers who fit the definition (Miller-Levy et al., 2014). Many scholars agree that teaching quality can be dramatically improved if states and districts work together to connect coursework and clinical experiences that enhance teachers’ capacities, effectiveness, and cultural responsiveness.

Rethinking Teaching Quality

There is substantial variation in what counts as a “highly qualified” teacher, as measured by various education agencies and academic scholars (No Child Left Behind, 2002). Past definitions focus on moral character, personality, and subject competence. In contrast, contemporary definitions emphasize the value added to cultural responsiveness, teachers’ academic credentials, and “teachers’ ability to engage students in rigorous, meaningful activities that foster academic learning for all students” (Mitchell, 2001, p. 22).

While it may be challenging to identify a single designation of teaching quality, a brief review of current literature reveals four themes regarding ways to increase the general quality and overall effectiveness of today’s U.S. teacher population: 1) selective recruitment (McMahon et al., 2015; Stein & Stein, 2016); 2) improved teacher preparation programs (Guha et al., 2017a; Stricklin & Tingle, 2016); 3) effective mentoring during preservice and early career teaching (Darling-Hammond, 2014; National Council on Teacher Quality, 2018); and 4) extensive practice (Dorel et al., 2016; Pankowski & Walker, 2016). Developing the skills needed to be successful in school settings means utilizing a residency model that places preservice teachers in programs with these indicators of effective practice.

The quantity of fieldwork experience for preservice teachers in a residency is challenging. Furthermore, while more advanced clinical teaching opportunities can positively influence student outcomes, it has also been found to be a predictor of the length of time the novice teacher will spend in the teaching profession (Dorel et al., 2016). Teacher candidates must be provided with maximum exposure to the day-to-day reality of their chosen profession. Traditionally trained teachers in the U.S. only receive an average of 177 hours of supervised classroom teaching experience before becoming the teacher of record, and 75% of this time is accumulated in the final semester of student teaching (Pankowski & Walker, 2016). Most residencies, on the other hand, offer a significantly higher number of preservice clinical preparation hours (Guha et al., 2017a), and the time is most often accrued over the final year of the TPP, not just the last semester.

Further, evidence confirms that teaching quality is one of the few characteristics that significantly affect student performance (Coleman et al., 1966; Darling-Hammond, 2009; Goldhaber, 2015; Goldhaber et al., 2017; McKinney et al., 2008; McMahon et al. 2015; Select Committee of HSI-Serving Deans and Educators, 2016; Stein & Stein, 2016). Extended time in the classroom through participation in residencies is important because “the longer preservice teachers practice in the actual classroom setting, the more likely they are to increase their sense of efficacy, which in turn can positively affect student outcomes” (Dorel et al., 2016, p. 49). Darling-Hammond (2008) affirmed that the most pressing rationale for teaching residency is because it:

provides an important vehicle for the nation to begin working on the critical problem of teaching quality for our most underserved students. In the long run, this idea may be a stepping stone to a system that ultimately provides the stable, high-quality learning environments children need and deserve. (p. 730)

Those who seek to develop teacher residencies are encouraged to provide authentic training for candidates whose demographic profile mirror the high-need community. Further, residencies have a history in social justice and committed to a community curriculum that uplifts, inspires, and prepares future teachers to connect with and understand the community they serve (Murrell, 2001; Shakespear et al., 2003). “This approach seeks to disrupt the status quo, and therefore is a minority view, sometimes seen as subversive. It is not hard to imagine the many obstacles which stand in the way of bringing social reconstructivist teacher education theory into practice (Shakespear et al., 2003, p. 5)

To develop residencies that are devoid of a critical lens for community and justice is to produce residencies that will surely rise (Guha et al., 2017a; Guha et al., 2017b; Darling-Hammond, 2008), but destined to fall (Gist et al., 2019). The failure to adopt this fundamental philosophy of social justice is to commit to developing a residency in name only; repackaged traditional clinical experiences with the same old university-based TPP ways of thinking.

Conclusion

The field of teacher education is primed for teacher residencies; a new paradigm in field experiences to modernize clinical practices. We began this paper by sketching over 150 years of the teacher residency in its many iterations—from community training of teachers in the Black community to today’s TEA-funded GYO programs. Since 2018, a very small number of university-based TPPs in Texas, just 0.005%, have risen to the charge

and have implemented as year-long residencies for preservice teachers.

Second, using a typology, we attempt to unpack field experiences by outlining two phases and proposing that practices by preservice teachers should occur in the community and represent the preclinical phase. The clinical phase of field experiences is further explained by early (observations, tutoring, and small group lessons) and late (observations, mini-lessons, and full classroom responsibility) field experiences. Residencies are a form of late field experiences that impact just 0.005% of clinical teachers in university-prepared TPPs in the state of Texas. We delve deeper and separate residencies into conventional residency models and URM—both are advanced late field experiences, support preservice teachers in a one-year term, include training alongside an effective mentor, are driven by mutually beneficial school-university partnerships, and follow the school district’s academic calendar. In addition to these residency features, URMs often occur in urban settings and are further buoyed by a site-specific instructional coach, offer the potential for graduate credit, tender implementation at any year in the teacher preparation program, and advance integration of culturally responsive teaching practices.

Third, we operationalize a URM by sharing the aggieTERM program with the CCIF®—a structure that centers culture and community in a structure that provides: (1) a coherent vision of teaching, (2) comprehensive clinical experiences, (3) shared governance, (4) developmental induction for clinical teachers and mentors, and (5) anchored in the community. As rural and suburban Texas school districts become increasingly diverse, it may be appropriate for residencies to adopt models that mimic urban residencies by integrating cultural competence curricula, thereby allowing preservice students to develop deep connections to the communities they serve.

Finally, we propose that teacher residency programs are worthy of expansion and offer an innovative approach to preparing and retaining highly qualified teachers—especially for new educators who will teach in underserved communities. In Texas, clinical practices are undergoing a transformation with the advent of residencies. However, they are still investigational and require promotion to become ubiquitous and scaled as they focus on providing teachers who are community-minded and dedicated to ensuring justice for learners in high-need schools.

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BUILDING BRIDGES: STRENGTHENING NEW TEACHER INDUCTION THROUGH DIGITAL MEANS

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Abstract

The research on new teacher induction encourages educational preparation programs and school districts to create innovative, sustainable initiatives that support new teachers and increase teacher retention in the field. While traditional mentoring programs and ongoing professional development have always been provided for new teachers, programs are beginning to experiment with digital induction tools, including asynchronous (webinars) and synchronous (blogs, websites, social media, podcasts) as a means to support new teachers. This paper details the initial steps, current findings, and future goals to establish a sustainable digital induction program that expands upon an existing one-day professional development session offered by one university-based Educator Preparation Program (EPP). Suggestions for the creation and implementation of the blog site and recruitment of author participants will be shared in addition to content from posts, working challenges, and future goals.

Keywords: digital induction, new teacher mentoring, mentoring

The recruitment and retention of high quality, diverse teachers, especially in shortage areas, continues to be a local, state, and national issue. The literature on teacher turnover and attrition is plentiful. Research on teacher attrition is alarming as it is reported that over 50% of beginning teachers leave the profession within the first five years (Carver & Feiman-Nemser, 2009; Ingersoll & Smith, 2004; Ingersoll, 2012). This statistic is not just a recent trend; Investigative studies from the last 30 years have confirmed that beginning teachers are indeed at risk for high levels of attrition (Ingersoll et al., 2018; Ingersoll & Smith, 2004).

Longitudinal comparisons that evaluate teacher retention statistics over the last 30 years confirm the teacher induction problem. In a recently released report by Ingersoll et al. (2018), it is estimated that 44% of new teachers leave the profession within the first five years. Of this number, half of the turnover occurs in roughly 25% of schools that are typically urban, high-poverty, and high-minority. And while there does appear to be a marked improvement in the number of minority teachers graduating from teacher preparation programs and being hired, these teachers are often among the first ones to leave the profession (Ingersoll et al., 2018).

Teacher education preparation programs around the country have engaged in the battle to curb high levels of teacher attrition among new teachers by restructuring and implementing innovative practices to better prepare and sustain novice teachers as they transition from the preservice environment (Potter et al., 2015). Critical teacher shortage areas currently include positions in the science, technology, and math (STEM) fields, special education, and bilingual education (Cowan et al., 2016). Furthermore, schools have difficulty filling middle and high school positions, especially in high-poverty and high minority schools (American Association of Colleges for Teacher Education [AACTE], 2013). Additionally, the student population continues to grow more ethnically and linguistically diverse, yet four out of five teachers are white (AACTE, 2013). In tandem, enrollment in Educator Preparation Programs (EPPs) across the nation have continued to decline by approximately ten percent, despite the projected need for more than one million new teachers over the next ten years (Barth et al., 2016). As a result of this data, both school districts and university EPPs are urged to create sustainable initiatives to recruit and retain teachers to meet the needs of a diverse student population.

Teachers frequently cite elevated responsibility compounded by a lack of control as contributing reasons for leaving the profession (Allen, 2005). New teachers are notably more likely to leave the profession due to a lack of investment in their early development (Curran & Goldrick, 2002). Furthermore, current research in teacher education indicates that the more support a new teacher receives in the first year of teaching, the less likely the new teacher is to leave the profession within the first five years (New Teacher Center [NTC], 2016). Comprehensive, purposeful, and multi-year support programs can accelerate the professional growth of novice teachers, can increase teacher retention, and can improve student learning (NTC, 2016). University-based induction programs and support are of benefit to beginning educators. Desimone et al., (2014) and Bastian & Marks (2017) assert that university-based induction programs are able to support recent graduates as they know the strengths and challenges of their candidates and can further scaffold mentoring supports that are targeted to the individual.

Additionally, recent graduates feel more comfortable asking former professors for guidance as they are no longer in a position of authority, unlike asking their school administration in fear of looking “incompetent” to a person who oversees their performance. Glazerman et al. (2010) found that students taught by new teachers who received at least two years of purposeful induction support demonstrated more significant learning gains in reading and math than in classrooms where new teachers who did not receive such support. A 2016 policy guideline report by the NTC summarized that there are four main components of an effective, purposeful, and comprehensive induction system, including quality mentor partnerships, effective school administrators, multiple support structures in place for new teachers, and ongoing program evaluation.

New Teacher Academy: The Face-to-Face Experience

In a continued effort to support newly graduated teachers from one university-based EPP, a New Teacher Academy (NTA) was formed in 2014. Since its inception, the NTA has grown and now includes partnering with a local alternative certification program to provide high-quality professional learning during the transition period of graduation/program completion to the first year of teaching. The NTA is a one-day face-to-face (F2F) targeted professional development session (approximately 6 hours) with small and large group sessions focused on topics to enhance beginning teachers’ knowledge and skillset regarding how to best meet the needs of diverse learners in their classroom (classroom management, differentiated instruction, working with special populations, technology

integration to enhance learning). Sessions are facilitated by current K-12 teachers, administrators, and learning coaches from an array of districts. The structured day allows for a variety of interactive and hands-on sessions.

Approximately 100 participants attended the most recent (2019) NTA offering at the university. The F2F component of the NTA allowed participants to learn new strategies to implement in their first year of teaching. For example, one session topic focused on effective classroom organization and management strategies. The facilitator of the session spoke of how to set up and arrange the “check-in” station for Meet the Teacher night. A participant commented, *“I never thought about how to set up for Meet the Teacher night. I mean, I knew about it, but I never thought about how I could best set it up so it was organized.”* Another session focused on using technology to better meet the needs of students receiving Section 504 or Special Education services. This session was facilitated by a current Educational Diagnostician and a district learning technology coach, and it showed various applications on how teachers could meet student accommodations and modifications. A participant noted, *“The IEP breakout session was great. I learned how Screencastify can be used for oral administration accommodations.”*

The feedback on the overall learning experience and value participants received from attending the NTA was positive. Every participant identified that *“NTA was worth the time”* and suggested (strongly agree or agree) that the information gleaned from the experience was *“very worthwhile and applicable.”* On the survey, participants did note that they *“wished it was two days instead of one (day), and more choices for break-out session topics were included.”* However, because of the nature of new teachers and their lack of experience in the classroom, NTA administrators often receive continued requests for information on classroom topics and support that a one-day session simply cannot provide.

Moreover, 64% of participants indicated that they would be interested in participating in a year-long mentoring experience. This was a compelling finding from the event that suggests additional forms of mentoring and professional learning are needed for beginning teachers. While the NTA served as a “mentoring mechanism” to support recent graduates and completers (F2F) before stepping foot into their first teaching job, additional supports and ongoing professional practices are necessary to support beginning teachers. Additionally, the EPP created other means, including a digital induction platform, to provide more targeted support for first-year teachers. Time for a first-year teacher is limited; thus, the EPP

worked to incorporate digital platforms to support beginning teachers as much as possible.

Digital Induction: Maximizing Opportunities for Growth

Anyone living in the realm of technology and the teaching profession has most likely heard of teaching blogs and sites such as Cult of Pedagogy, Edutopia, or TeachThought. The rapid expansion of technology via social media has created a niche for professional educators. Articles, blogs, teaching videos, and other professional-oriented topics are widely shared and accessed by a digital community of teachers. Whereas once professional development required a physical presence at a sit-and-get session or a book checked out from the campus professional library, technology has suddenly increased the ability for teachers to asynchronously reflect upon their practice while reading a blog post or teaching article in the dentist's office. This extends to the world of lesson planning and lesson planning ideas via digital collection boards such as Pinterest.

Furthermore, the COVID-19 pandemic announcement on March 11, 2020 (World Health Organization, 2020) created an almost instantaneously reliance on digital forms of instruction and professional development. Following this announcement, countries, states, businesses, and schools shut down immediately in an effort to slow the pace of virus transmission. Teachers, suddenly dependent on digital means of instruction and online platforms to reach their students, had to adapt to a new way of teaching and learning overnight with no face-to-face forms of professional development available. A plethora of professional development articles and resources about tools to use, strategies for teaching online, and emotional support emerged almost immediately. Consider these headlines explicitly geared towards teachers in the wake of new online teaching methods:

Teaching Through a Pandemic: A Mindset for This Moment (Merrill, 2020).

The Difference Between Emergency Remote Teaching and Online Learning (Hodges et al., 2020).

4 Tips for Teachers Shifting to Teach Online (Farah, March 2020).

How Effective Is Online Learning? What the Research Does and Doesn't Tell Us (Loeb, 2020).

Everything You Need to Know About Building a Great Screencast Video (Farah, April 2020).

Distance Learning: A Gently Curated Collection of Resources for Teachers (Gonzalez, 2020).

What does this mean for new teacher induction? Obvious implications are that digital forms of support via written blogs, recorded webinars, articles, and compilations of resources can be necessary and effective tools to reach new teachers where they are. Furthermore, these types of resources are easily accessible to facilitate the growth process in a limited timeframe or as a way to accommodate an immediate need when resources are limited. This would be especially relevant for new teachers working in districts in which no formal mentoring or induction program exists.

Existing studies in new teacher digital induction programs focus on the use of digital means as a source of creating an online community and reflective practice. New teachers in these studies frequently report positive benefits in the program, such as the influence upon instructional practice, ability to provide support, and facilitation of reflection through wikis, discussion boards, and coaching support (Kileavy & Moloney, 2010; Taranto, 2011). However, a common critique of such programs is that reflective journaling and posting requirements often enhance rather than relieve concerns and time constraints of the new teacher (Hutchinson & Colwell, 2012; Mitchell et al., 2017). Research conducted by Zuidema (2012) found that through digital email exchanges, teachers adopted an inquiry stance while building a digital community. In their review of the research on mentoring of beginning teachers, Ingersoll & Strong (2011) suggested that mentoring and induction programs for beginning teachers positively impact teacher retention and student achievement; these can and should include digital forms of community.

A natural extension of the digital community is the rapid expansion of social media applications. Social media provides a platform to disseminate professional information that it is readily accessible from a computer or personal device. Additionally, school districts are supporting teachers' use of social media to showcase instructional quality and professional development collaborations. Many teachers can use instructional breaks or personal time to locate and access information through social media posts. Studies on the use of social media within professional development formats indicate that teachers view and use social media as tools to build a network of mentoring support, impact knowledge, and affect their current teaching practice (Risser, 2013; Trust, 2012).

A digital induction site expands on established perspectives in teacher induction while also focusing on an underused component of induction, that of using real-time or synchronous tools (webinars or virtual conferencing) and

asynchronous offerings such as blogging, video media, and social media to foster digital community as an induction process. This entirely digital format helps to bridge the gaps of time, distance, and communication among graduates who are unable to regularly utilize the support services that our university can provide.

The purpose of creating the NTA digital induction site is to establish multiple support structures and partner with local school districts to support new teachers transitioning from preservice to service. Texas is currently a state in which no formal induction support policies are mandated (Texas Education Agency, n.d.; New Teacher Center Report, 2016). The goal of the project is to facilitate natural connections and support as an extension of the EPP university partnership rather than to create added tasks and requirements for new teachers (i.e., the bridge). Thus, the program implemented intentional design by disseminating information through written blogs and social media as a method to provide professional development extensions of the one-day NTA event and to create authentic professional conversations about teaching practice, specifically geared for the new teacher. This site serves as a digital induction community in which participants can learn, receive mentoring support and advice from veteran educators, exchange knowledge, ask questions, and contribute once more established in their teaching careers. Specific goals of the project include:

1. Creating a digital means to support new teachers in their first one to three years of teaching as an extension of the one-day New Teacher Academy by providing blogs, podcasts, and webinars on topics of particular interest to *new* teachers. The intent is to establish an active partnership between the EPP and our surrounding school districts. Writers and contributors to the site comprise of members among the university faculty, surrounding school district administrators and leaders, and university alumni actively working in the field.
2. Providing continuing support for current preservice teacher education students by connecting active educational practitioners to educational leaders and alumni working in the field.
3. Serving as a recruitment tool for teachers to return to the university as they seek to advance their own professional development needs. Many graduates return to the university after entering the teaching profession to pursue graduate degrees in Educational Leadership, Special Education, or Curriculum and Instruction. The site provides all pertinent information about the various programs offered at the university.

Current graduate students are also among the contributors who write for the blog, which serves to help develop their professional trajectory as many experience a pseudo peer-reviewed publishing forum.

The Process

Year 1- Early Implementation: Creation, Design and Recruitment

The development of this project occurred in several early implementation stages. NTA administrators identified a need for continued support following the one-day NTA event. Because one of the goals of the project was to serve as a collaborative effort and not merely the voice of a few individuals, recruitment of writers and contributors was necessary. A blogging guideline document was crafted to provide several concrete tips on how to write an effective blog piece. For instance, the guideline sheet discussed how to write specifically for new practitioners in the field rather than for an academic research-based journal audience. We recruited writers for the blog by sending out a call for contributors and blog posts among the various networks, by sharing the need at university faculty meetings, and by emailing university alumni and district partners. The NTA site was then constructed using WordPress as a free web hosting platform: Tabbed categories include the various components of the website. Specifically, the following pages were created:

- About Section – This section details the New Teacher Academy, founders, and purpose of the New Teacher Academy Site.
- Contributors – This tab hosts photographs and biographies for all contributors and writers. The blog recruitment document is also housed in this section as we continue to recruit writers and contributors.
- Graduate Degrees – Information about all university graduate degrees is posted on this page, including direct links to the official university page.
- Job Postings – The NTA and teacher education program frequently receive job postings of available opportunities in surrounding school districts. All job postings that we receive are posted here.
- Resources – This page hosts relevant links and resources that are available to our graduates and anyone accessing the website.
- Webinars – Links to webinars, including archived recordings, are housed in this section.

- The blog section of the website is the home or static front page for anyone accessing the site, and all content is archived by date and tags.

Before crafting and releasing blog posts, an informal survey was distributed to university alumni and NTA participants to discover topics of interest to new teachers. This information was used to compile a tentative list of subjects that was both relevant and timely to their practice in the classroom. For instance, some respondents marked that they would like more information on how to conduct a parent-teacher conference. Knowing that this is typically an important hallmark in the early part of a school year, writers crafted a blog submission for release in the early part of the year rather than at the end.

The digital induction site officially launched at the introduction of the 2017-2018 academic year with an introductory post explaining the purpose and features of the site. Topics that were covered this year included the first days of school, technology in the classroom facilitating parent-teacher conferences, classroom management, assessment, and professional goals. Writers and contributors included voices from both district partnerships and university faculty, including a faculty member who had recently gone back to the K-12 classroom on sabbatical leave through the university. A total of 13 original posts were disseminated during this first year of the project.

Year 2- Gaining an Audience and Incorporating Social Media

While the launch of the site was initially successful in that it pushed out consistent content, the hosts quickly realized that while WordPress tracked views, there was no way of knowing who was actually accessing the site. Furthermore, the site did not attract a wide following by simply releasing posts. Using existing contacts from the NTA event and social media forums, emails were sent out to try and attract consistent followers. Blog posts were also posted on social media sites such as the university department and college Facebook and Twitter accounts. The site is also available to the university's current preservice teacher education and student teaching interns. A specific Twitter account was created to reach this particular population of teaching graduates who were now in the field.

Based upon initial statistics, the site went from approximately 20 views per post to a more consistent following of about 50-70 viewers per post. The site is open, so at this time, there is no way of knowing who reads it. However, it is assumed that current preservice teachers, educational faculty, and NTA alumni are primarily responsible for viewing the content. A comments section is

open for viewers to post responses to questions or their ideas, but this feature has not been consistently used. Comments we did receive posted on the site include:

- *Thank you for creating such a blog, I still don't have a teaching job, but I'm sure all the resources posted will help me prepare when I get my turn. I hope new teachers share; it is really helpful.*
- *I really enjoyed [name's] piece on the cultural classroom. It definitely gives teachers a new perspective regarding how to reach and teach our students. Great piece!*

Year 3- Sustainability and Students as Partners

The third year became more about the sustainability of the project. It takes extensive time to solicit, edit, and publish posts for the blog that have been both vetted in content and revised for quality. Furthermore, multimodal elements of a blog require finding royalty-free stock images to use in the posts. Finding relevant images to match the content in the blogs can be time-intensive for a faculty member also charged with teaching, curriculum design, scholarship, and service duties. Other more administrative type tasks such as having to update listservs based on the most recent NTA attendance, updating old and broken links, and getting fresh content on the site also took extensive time.

One solution was to have students in the university's EPP graduate programs serve as writers for the blog (most of which are current K-12 educators). This was a significant move and served to help bridge the preservice to inservice gap by featuring the perspectives of students who were many years into their teaching careers and thus, often had the most authentic voices. It also helped to solve the problem of continually recruiting fresh writers and topics to release on the blog without creating the undue hardship of the blog administrators continuously writing blog contributions.

In one of the graduate courses for a degree in Teaching, Learning, and Curriculum, students were charged with writing two blog posts as a course assignment that infused elements from a curriculum studies and perspectives class. Specifically, the blogs had to be geared toward the audience of new teachers but had to incorporate themes discussed in the class. Some of these themes included various teaching philosophies, care mentality, lesson planning design and approach, curriculum elements such as the implicit, null, and hidden curriculum, teaching critical thinking and problem solving, and multicultural education. Students were told upfront that exceptional works would potentially be edited and chosen for

publication on the blog site. Students were also given the blog to see a model of how to write theoretical concepts toward a different audience. In other words, they had to understand what they were writing about so well, to make it understandable and applicable to a new teacher, which requires a different writing skill than composing a research paper. Eventually, this opportunity was opened up to other students in other graduate programs at the university. Thus far, eight graduate students have had their works featured on the site.

The Findings: Thematic Elements for New Teachers

Contributors to the digital blog were not given specific topics to on which to write. Faculty members, district leaders, and graduate students wrote on topics of interest and expertise to their particular educational experiences. However, all contributors were given guidance about the purpose, audience, and guidelines of the blog. For instance, writers were told that the target audience would be new teachers in their first three years of teaching practice.

The majority of posts had to relate to topics that are of paramount for beginning teachers. Classroom management and classroom engagement were written about from multiple teachers and faculty members. Moreover, the integration of technology to support all students and enhance their learning was also touched on several times. Goal setting, handling the pressures of teaching, and understanding and meeting student needs were also addressed. Based on feedback and comments related to the topics, it was apparent that readers appreciated authentic, evidenced-based pieces with tips and ideas that could be implemented in the classroom almost immediately. New teachers didn't want to read through extensive reviews of literature; instead, they wanted to learn about the topic, how to best incorporate it in the classroom, and how it could enhance their students' learning experience.

Lessons Learned: Challenges as Future Goals

Previous work in the field of new teacher induction (Semington et al., 2016) reports on the difficulties in maintaining and recruiting consistent participation in synchronous, real-time professional development sessions such as webinars. Challenges initially arose when planning this type of induction offering since teachers were limited by time and preference to other face-to-face or digital offerings. Thus, the NTA decided to begin the digital induction program and NTA site by offering asynchronous options in the form of written articles (blog posts) or podcasts that can be accessed more flexibly, do not require

an extensive amount of time, and are easily accessible on mobile devices and social media accounts.

A future goal is to begin hosting more synchronous forms of professional development, such as through webinars and live virtual conference sessions (i.e., Zoom, Skype, Google Meet, etc.). In Semington et al. (2016), webinars began as regular options during the year, with 3-4 offerings per semester. Attendance at the webinars was consistently reported much lower than content offering in the asynchronous formats, although many individuals accessed the content in recorded form later. However, due to the current reliance on digital forms of professional development via webinars and virtual conferencing in a post COVID-19 schooling era, a foreseeable need and interest in this type of development is expected. The EPP experimented with these types of professional development offerings in the spring 2020 semester when all face-to-face interactions with current preservice teachers were no longer feasible. Clinical student teaching seminars moved quickly to a fully online, synchronous format via Zoom and Google Meet, and students adapted and participated in the sessions. Over 100 students participated live and used both the chat and discussion features to interact with hosts. This option could easily be expanded to include the education community of recent graduates and new teachers as part of a purposeful induction support tool. Furthermore, the recording abilities of these tools make accessibility much easier for teachers with multiple responsibilities and time constraints.

One future goal of the project is to develop and implement a method for studying the impact of the blog and social media usage upon teaching practice. Specifically, when and how do teachers access the information? Do they share the site with other colleagues? How do they implement the content in their teaching practice? Do teachers feel supported and more confident in their teaching practice after viewing the content? Questions such as these get to the heart and purpose of implementing such a project – positively influencing teaching practice and providing ongoing support, especially in a time when face-to-face interactions and professional development is not feasible and is highly dependent upon technology.

Expanding upon digital teacher development and induction through digital means should always be a primary goal. While blogs are certainly meaningful tools to access information and can always be archived and readily accessed, the NTA developers would like to continue exploring the use of synchronous tools such as virtual conferencing and webinars and asynchronous media tools such as podcasts and short instructional videos. This

suggests a more extensive commitment in the form of digital and media editing capabilities, which means that recruiting and implementing this form of digital induction will no doubt require more time and preparation.

Conclusion

This best-practices, work-in-progress paper, provides a foundational understanding of the complexities of new teacher induction, specifically regarding digital induction programs as innovative ways to support new teachers. The authors foresee that this form of induction support for new teachers will become especially relevant and at the forefront of teacher support methods in the current cultural climate reliant on technology while social distancing in the wake of the COVID-19 pandemic. This paper discusses the specific implementation phases of the digital induction and reviewed both the early and current planning stages and behind-the-scenes work to recruit contributors, attract followers, and introduce quality, relevant content. A main challenge of getting the project up-and-running includes attracting and retaining followers, while also measuring the impact upon new teacher practice. This is no easy task. We may consider taking another approach and looking at how the writing elements of veteran graduate teachers aids in developing their practice over time.

We consider the project successful if our participants find the content meaningful toward positively impacting classroom practice if they return to the site or share the site with other teachers who could potentially benefit, and if the site helps to recruit students to further their education through additional professional development opportunities,

including returning to the institution for advanced degrees. It seems evident that F2F induction support, coupled with digital means, can be very impactful to beginning educators. Findings from initial implementation suggest that digital teacher induction is ongoing and continually changes to meet the needs of the various participants in the program. Some of the challenges and future goals of the project include the creation and delivery of professional development webinars and implementing strategies to build and maintain strategic partnerships for completing blog postings. Finally, we desire that our project continue to facilitate the ongoing discussion of how to best meet the needs of supporting novice teachers in the field via both F2F and digital formats. We ask fellow teacher educators to ponder these questions:

- What are the needs of your program and new teacher graduates, and what specific topics and themes would be of utmost importance?
- How can EPPs design and evaluate digital induction programs to ensure that they are actually helping our new teachers? What research strategies should be implemented?
- How can EPPs evaluate the lasting impact of a digital induction program upon teacher retention and development of practice in the classroom?
- How can digital induction programs best support new teachers in the era of the COVID-19 pandemic when new teachers are still learning to teach when teaching is now fully online?.

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Contribution of Research

EFFECTS OF PRIMARY GRADE LITERACY FIELD EXPERIENCES ON PRESERVICE TEACHERS' SELF-EFFICACY

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Abstract

Learning to read is an essential skill, yet many new teachers enter the profession unprepared to be effective literacy teachers. Teacher preparation has been at the forefront of many reforms in education. However, discrepancies still exist in how teachers are prepared to enter the profession. This study investigated preservice teachers' sense of efficacy for primary literacy instruction by the amount of field experience. Participants were preservice teachers who had been accepted into the educator preparation program at small, private universities in Texas and were seeking Early Childhood-Grade 6 certification. This article discusses the importance of field experience in the preparation of teachers for the primary literacy instruction, and describes the results of the study, which indicated that median scores were statistically significant between groups.

Keywords: self-efficacy, field experience, literacy

Learning to read is a major achievement of the first years of school for young children. If literacy instruction and acquisition are diminished, then all other educational achievements are likely to decline (International Literacy Association [ILA], 2016). These students rarely catch up with their peers without intensive instruction provided by experts (Moats, 1999). What is learned during the early grades, especially related to literacy, can make a lasting impact on how students perform in subsequent years (Bornfreund, 2011).

Teaching children to read is a challenging task and requires a set of specialized knowledge and skills. Teachers are a critical factor in the performance of students, and the instruction that teachers provide directly impact literacy achievement (ILA, 2015). According to the ILA (2016), students have a right to a highly qualified literacy educator who is well prepared and can address the diverse needs that exist in today's classrooms. The challenges that face literacy teachers today are "complicated, unprecedented, and pervasive" (ILA, 2016, p. 2). These challenges include increasing numbers of English language learners, new curriculum standards, digital technologies, and high-stakes assessments (ILA, 2016). Much recent discussion and debate have taken place concerning what should be included in the curriculum for future teachers in general and specifically related to

literacy. These conversations must be rooted in research and evidence-based practices.

Currently, there is a significant discrepancy between states in certification guidelines, credit hours needed, and field experiences provided in literacy preparation for primary grade teachers. Major components that have been identified as critical to a successful teacher preparation program include coursework, field experiences, and collaboration among those who work together in teacher preparation, with field experience being the most influential factor (Helfrich & Bean, 2011). Teacher preparation for literacy instruction in primary grades is a complex issue, and the need to understand effective practices is critical.

Theoretical Framework

Self-efficacy, as it relates to teaching, is the teacher's belief in their ability to help students learn (Hoy & Spero, 2005). Teachers who begin their teaching career with a strong sense of self-efficacy build upon the belief that they can succeed and are more willing to persist through challenges rather than giving up when things are difficult (Tschannen-Moran & Hoy, 2001). To some extent, the self-efficacy beliefs of teachers can become self-fulfilling prophecies because teachers who believe they will not be successful are more likely to put forth less effort and give

up easily, thus confirming their belief (Tschannen-Moran & Hoy, 2007).

Mastery experiences, such as field experiences that involve working with students, are considered the most powerful influence in increasing self-efficacy beliefs (Bandura, 1997). Mastery experiences that are not too challenging or too easy provide the most significant increase in self-efficacy. These “just-right” experiences build resilience and perseverance and provide the necessary skill set to persist when faced with difficulties or setbacks. This is especially important for preservice teachers because “efficacy beliefs are considered to be most pliable early in learning” (Tschannen-Moran & Hoy, 2007).

It is important to note that efficacy is specific to the context. Teachers may feel confident in their ability to teach one content area but feel inadequate to teach another. Accordingly, research shows that a teacher may feel efficacious for overall teaching tasks but not have a strong sense of teacher self-efficacy for literacy instruction (Tschannen-Moran & Johnson, 2011). One reason that self-efficacy is so vital in literacy instruction is due to the instantaneous, complex teaching decisions made when working with students (Tschannen-Moran & Johnson, 2011). Thus, there is a need to better understand how to increase preservice teachers’ self-efficacy for literacy instruction.

Statement of the Problem

Research shows that educator preparation programs should provide opportunities for preservice teachers to practice what has been learned in the university classroom in a mentored setting with school-aged students to bridge theory with practice (Helfrich & Bean, 2011). Research is needed to measure the gains of preservice teachers as a result of different field experiences (Otaiba et al., 2010). Capraro et al., (2010) recommend additional research to look more intensely at field experiences to determine “which of all the extra efforts are most worthwhile” (p. 147). Studies are also needed that focus on the change of teachers’ sense of efficacy for teaching reading from the beginning of the teacher preparation program through various points throughout the program (Helfrich & Clark, 2016; Kent et al., 2013). The problem is that little is known about teacher self-efficacy for specific content areas, such as literacy, and the factors that contribute to increased levels of self-efficacy (Tschannen-Moran & Johnson, 2011).

Extensive research exists in the area of general teacher self-efficacy, but there is little research in the specific area of literacy (Tschannen-Moran & Johnson, 2011). More specifically, little research has been done to study the self-

efficacy of preservice teachers for teaching reading (Haverback & Parault, 2008). This study was significant because little is known regarding the impact of the amount of field experiences on preservice teachers’ self-efficacy for primary literacy instruction. Understanding the impact can guide educator preparation programs as they design coursework and plan field experience opportunities to train preservice teachers.

Purpose Statement

The purpose of this study was to determine whether there are significant differences in preservice teachers’ self-efficacy for primary literacy instruction based on varying levels of field experiences as measured by the Teachers’ Sense of Efficacy for Literacy Instruction (TSELI) developed by Tschannen-Moran and Johnson (2011). This study examined preservice teachers’ perception of their ability to teach literacy to students in the primary grades, which includes early childhood through second grade. The research question was: Are there differences in preservice teachers’ sense of efficacy for literacy instruction by the amount of field experience to include no/introductory field experience, a reading practicum experience, and clinical teaching experience?

Literature Review

Although there are many topics in education that people disagree on, the importance of literacy instruction is often an area of common ground. Literacy is considered the “essential education, the learning through which all other learning takes place” (ILA, 2016). Not only is reading important in every other academic field, but it is also necessary for most aspects of life (National Research Council [NRC], 2010). What is learned during the early grades, especially related to literacy, can make a lasting impact on how students perform in subsequent years (Bornfreund, 2011). If literacy instruction and acquisition are diminished, then all other educational achievements are likely to decline (ILA, 2016).

However, learning to read is not innate (Frey & Fisher, 2010; Sousa, 2014). Children are born with the biological structure needed to learn to read, but the brain is not hardwired for reading as it is for speaking (Frey & Fisher, 2010). No area of the brain is specialized for reading, and learning to read is one of the most difficult cognitive tasks (Sousa, 2014). Reading is a complex and elaborate process that involves decoding abstract symbols into sounds that make words that have meaning when put together. In today’s society, students have to process text at high levels and be able to interpret ideas, analyze arguments, and synthesize information from multiple sources (NRC, 2010).

These are not easy tasks for students to master and are equally difficult for teachers to teach.

Teaching reading is professional work with a specialized knowledge base that must be mastered by teacher candidates (Phelps, 2009). Merely being a good reader does not guarantee that one will be a good reading teacher. To be successful, teachers must acquire specialized content knowledge, as well as the ability to combine that with effective teaching methods, also known as pedagogical content knowledge (Leader-Janssen & Rankin-Erickson, 2013). In 2015, the ILA released a *Preliminary Report on Teacher Preparation for Literacy Instruction* that summarized data gathered from a variety of state department websites and state officials. The ILA noted the importance of effective literacy instruction from the very first day of school and the critical role that teachers play in helping students achieve in the foundational skills of reading, writing, speaking, and listening. Yet, they found a lack of explicit guidelines for literacy coursework and practicum experiences in many state education department guidelines (ILA, 2015).

Components of Literacy Instruction in Teacher Preparation Curriculum

Teacher preparation programs must equip beginning teachers with the knowledge, skills, and dispositions to help all students become effective readers and writers (ILA, 2016). Much recent discussion and debate have taken place concerning what to include in the overall preservice teacher curriculum and in the specific curriculum related to literacy instruction. When examining the components of teacher preparation programs, the most valuable for preparing preservice teachers to teach literacy are coursework, an integrated field component, and collaboration between the preservice teachers, university instructors, and teachers in the field (Helfrich & Bean, 2011). In a review of research, Copeland et al., (2011) found that the amount of coursework in reading and the opportunity to engage in practicum experiences resulted in an increase in teaching reading with competence. Substantial evidence supports the need for coursework and field experiences to build the teaching capability of new teachers and disproves fast-track programs that do not contain these necessary components (International Literacy Association [ILA] & National Council of Teachers of English [NCTE], 2017).

Additional instructional time is essential in literacy coursework because the knowledge and skills required to teach primary students differ from what is needed to teach late elementary school students. Students in the primary grades are still developing foundational literacy skills and need specialized instruction in the areas of oral language development, print awareness, phonological awareness, and

beginning phonics. Literacy courses designed for preservice teachers seeking certification in a wide grade span such as prekindergarten through fifth or sixth grade tend to be very broad and lack focused attention on emergent and early literacy skills that are unique to younger primary grade students (Bornfreund, 2011). In Texas, a new certification band for early childhood through third grade (EC-3) was added in May 2018 with standards focusing on the science of teaching reading to provide greater coursework and training in the theory and practice of teaching early reading skills (Classroom Teacher Certification Standards, 2018). Current licensure practice across the states varies greatly and may not provide the necessary focus on emergent and early literacy.

For years, there has been debate over methodology in reading instruction. However, content knowledge and pedagogy for coursework should be grounded in rigorous, peer-reviewed research rather than ideology or politics (ILA, 2016). Unfortunately, there can be a mismatch between what research supports regarding early literacy instruction and the knowledge base of teachers (Bos et al., 2001). Teacher preparation programs must help future teachers develop a deep understanding of the knowledge and skills that successfully promote early literacy development in primary grade students (Pressley & Allington, 2015). The work of the National Research Council, the National Reading Panel, and the International Literacy Association demonstrates the consensus that beginning readers should possess six foundational skills: oral language, phonemic awareness, phonics, fluency, vocabulary knowledge, and comprehension strategies (NRC, 2010). There are other essential parts of the knowledge base, including the study of multiple literacies, multimedia and multimodal texts, child development, and diverse learners, that should be covered in the teacher preparation curriculum (ILA & NCTE, 2017). Moreover, the subject matter content and pedagogy must be applied to practice. It is not enough to learn the theories of literacy development; instead, these theories must be used in authentic contexts with guidance and mentoring through field experiences (ILA & NCTE, 2017).

Field Experiences

In teacher preparation programs, the practice component typically comes through a variety of field experiences that allow preservice teachers to focus on the process of teaching (Lipp & Helfrich, 2016). The practice-focused curriculum allows teacher candidates to apply what has been learned in a mentored setting where a cooperating teacher and university supervisor can provide feedback. Direct explanation and brief modeling of teaching strategies are not sufficient for helping preservice teachers transfer the strategies into planning and practice

(Kropiewnicki, 2006). More recently, some advocate a shift is needed in the focus of the teacher education curriculum from knowledge to practice with extensive opportunities for preservice teachers to participate in the interactive work of teaching in a program that is grounded in clinical practice (Ball & Forzani, 2009; Darling-Hammond, 2014; National Council for Accreditation of Teacher Education., 2010).

Many differences exist in the field experiences required by educator preparation programs. The extensive variability includes differences in an element such as design, implementation, quality of supervision, and the connection to coursework (Singh, 2017). Preservice teachers who participate in a field experience component that includes interactions with a small group of students are able to implement the content knowledge learned in the teacher education program to the school setting (Helfrich & Bean, 2011; Clark et al., 2013). Preservice teachers reported that the field experiences were valuable regardless of the amount of time spent in the field and helped them understand how to teach reading (Helfrich & Bean, 2011). In fact, field experience and student teaching are considered by some to be the most valuable components (Bornfreund, 2011). Acknowledging the impact that field experience can make on the level of preparedness for a beginning teacher is an important step in the most meaningful aspects of teacher preparation (Clark et al., 2013). Yet, there is still no consensus among teacher educators or in the research on field experience, to support a minimum or a recommended amount during teacher preparation.

Aligning Field Experiences to Coursework

A divide between theory and practice can exist in teacher preparation if there is not an intentional effort made to link the two. One way to prevent this divide is to align field experiences with coursework (Allsopp, DeMarie et al., 2006). Research shows that preparation programs should rely equally on both coursework and field experience and find ways to connect what is happening across these two components (Helfrich & Bean, 2011). Pairing field experiences with coursework provides the opportunity to bridge the gap between theory and practice (Retallick & Miller, 2010). Preservice teachers need many opportunities to deepen their understanding in an environment where they can learn by doing (Lipp & Helfrich & Clark, 2016). Darling-Hammond (2014) asserts that a critically important part of teacher preparation is “extensive and intensely supervised clinical work—tightly integrated with coursework” (p. 550). The most robust programs require preservice teachers to spend significant time in the field where what they learn in their coursework is simultaneously reinforced in the field (Darling-Hammond,

2014). One of Bornfreund’s (2011) recommendations is to provide more field experiences that are specifically connected to coursework for preservice teachers in the early grades. The skillset needed in the academic world as compared to the classroom is different, and field experiences serve as a transition between the two. Research supports that the pairing of coursework and field experiences “allow preservice teachers to better explain, defend importance, and feel confident to teach using these literacy skills” (Lipp & Helfrich, 2016, p. 58).

Field Experiences in Literacy

In a study of university-based programs receiving the International Literacy Association Certificate of Distinction for effectively preparing future teachers for literacy instruction, the highest-rated programmatic feature was “carefully structured and sequenced public school-based teaching experiences, included from the first course to the end of a literacy teacher education program” (Lacina & Block, 2011, p. 343). Each literacy course included field experiences that were systematically sequenced across semesters to correspond to the appropriate knowledge and skill level of the preservice teachers. In another review of research on methods courses and field experiences for preservice teachers in the area of English and reading, Clift and Brady (2005) noticed a trend that emphasized “the importance of planned, guided, and sustained interactions with pupils (children and adolescents) within early field and student teaching settings” (p. 316). Preservice teachers’ ideas about teaching and learning changed as a result of reflecting on field experiences with individual students or small groups if they worked with classroom teachers who supported what was taught in the methods course (Clift & Brady, 2005). Even though research demonstrates the importance of a variety of field experiences, there is little evidence that states require preservice teachers to participate in literacy-focused field experiences prior to student teaching (ILA, 2015). States have mandates for the number of hours of field experience, but, at best, the requirement related to literacy is embedded.

Recently, the International Literacy Association has also reinforced the importance of field experience as it relates specifically to literacy instruction. The ILA called for literacy to be included in every aspect of clinical practice (ILA, 2016). In their latest publication on teacher preparation, the application of knowledge in authentic teaching contexts is one of the four critical quality indicators for preservice teachers’ learning (ILA & NCTE, 2017). The ILA stated that preservice teachers needed the opportunity to apply their pedagogical and content knowledge through multiple experiences in the classroom with students while being provided strong mentor support (ILA & NCTE, 2017). The need for high-quality teachers

who are well prepared to teach literacy to students is critical in today's knowledge-based society. Teacher preparation programs must ensure that all research-based components of reading instruction are thoroughly taught in coursework and closely linked to opportunities to practice in the field with students. Collaborative field-based experiences that are provided throughout the educator preparation program are essential to prepare preservice teachers to effectively teach literacy beginning in their first year of teaching.

Data Collection

The participants for this study were drawn from a voluntary convenience sample of preservice teachers who were pursuing Early Childhood through Grade 6 (EC-6) teacher certification and had been admitted to educator preparation programs at small, private, four-year universities in Texas. Data was collected at the end of the spring semester of 2019.

The levels of field experiences for this study were defined as:

- No/Introductory field experience – Preservice teachers had not participated in any direct field experience or had completed the state-required minimum of 30 hours of field experience in their certification area (EC-6) with at least 10 hours being in a primary grade (EC-2) classroom. Preservice teachers were not expected to prepare lessons, although they may tutor individuals or small groups of students.
- Reading practicum experience – Preservice teachers were enrolled in or had completed a reading methods course at the university that includes a practicum experience at a local school. As part of the practicum, preservice teachers prepared and taught reading lessons to individuals or small groups of students. A minimum of 10 hours should be at the primary grade (EC-2) levels.
- Clinical teaching experience - Preservice teachers had participated in clinical teaching, which is an all-day capstone experience during the last semester of college. A minimum of 5 weeks should be at the primary grade (EC-2) levels. During these weeks, preservice teachers

prepared lessons and taught reading in a variety of settings, including the whole class, small groups, and/or individual students.

The instrument that was utilized in this study was the Teachers' Sense of Efficacy for Literacy Instruction (TSELI) developed by Tschannen-Moran and Johnson (2011). The purpose of the TSELI is to measure teachers' sense of efficacy for literacy instruction. The TSELI is a relatively new, subject-specific instrument based on the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Hoy, 2001). The TSELI consists of 22 questions that examine various aspects of literacy instruction. Questions ask "to what extent" the teacher has the current ability, resources, and opportunity to implement strategies or provide instruction related to literacy. The questions are scored on a unipolar response scale with a 9-point continuum.

Data Analysis

Due to lower than expected total participants and unequal groups, the researcher determined that the Kruskal-Wallis H test, a rank-based nonparametric alternative to the ANOVA, was the more appropriate test to run to produce the most valid and reliable results. Data screening was conducted using boxplots to look for extreme outliers in the data. Assumptions that must be met for the Kruskal-Wallis H test included: one dependent variable measured at the continuous or ordinal level; one independent variable consisting of at least two categorical, independent groups; independence of observations; and similarly shaped distributions.

Descriptive Statistics

The TSELI scores were the dependent variable for this study, and the amount of field experience was the independent variable. The descriptive statistics were reported for $n = 59$. See Table 1 for descriptive statistics. Because the Kruskal-Wallis H test was used, the most appropriate measure of central tendency is the median. The median increased from no/introductory field experience, reading practicum experience, and clinical teaching experience, in that order. See Table 2 for median scores.

Table 1*Descriptive Statistics*

	n	M	SD	Min	Max
No/Introductory field experience	14	126.00	27.00	78	166
Reading practicum experience	35	157.34	23.81	88	192
Clinical teaching experience	10	163.20	25.65	124	198
Overall	59	150.90	28.26	78	198

Table 2*Median Scores*

	n	Mdn
No/Introductory field experience	14	129.50
Reading practicum experience	35	160.00
Clinical teaching experience	10	164.00
Overall	59	155.00

Results

The Kruskal-Wallis H test was statistically significantly different, indicating that there were differences in preservice teachers' sense of self-efficacy for literacy instruction between the field experience groups: no/introductory field experience, reading practicum experience, and clinical teaching experience. Median scores were statistically significant between groups, $\chi^2(2) = 13.212$, $p = .001$. Based on this data, the researcher rejects the null hypothesis.

Post hoc testing was conducted using the Bonferroni correction to determine the difference between groups because the null hypothesis was rejected. The post hoc test revealed that the mean increase from no/introductory field experience to reading practicum experience was statistically significant ($p = 0.002$), as well as the increase from no/introductory field experience to clinical teaching experience ($p = 0.008$). The pairwise comparison of reading practicum experience to clinical teaching experience ($p = 1.000$) was not statistically significant.

Discussion

The construct of self-efficacy, based on Bandura's social cognitive theory, is often used in educational research to determine teachers' perceptions about their

ability to yield the desired learning outcomes of all students (Tschannen-Moran & Hoy, 2001). Mastery experiences are the most powerful influence on self-efficacy (Bandura, 1997). Successful teaching experiences that are "just-right" in the level of challenge boost teachers' self-efficacy dramatically and increase their belief that they will continue to be successful (Tschannen-Moran & Hoy, 2007). Preservice teachers need more than a direct explanation and modeling to apply what they have learned (Kropiewnicki, 2006). This study showed that the median score on the TSELI increased based on the amount of field experience, and the difference between no/introductory field experience group was statistically significant when compared to the reading practicum group ($p = 0.002$) and the clinical teacher group ($p = 0.008$).

Although coursework was not explicitly included in this study, students participating in a reading practicum experience would more than likely be enrolled in a literacy course or have previously taken a literacy course. Therefore, it is reasonable to suggest a connection since this study showed a statistically significant difference between no/introductory field experience and a reading practicum experience. The results of this study also correlate with research that novice teachers whose educator preparation programs required more field experiences, over 150 hours prior to clinical teaching, had a higher sense of

self-efficacy for instructional decision-making (Maloch et al., 2003).

A review of the literature on inputs of teacher preparation programs showed that three of the most valuable components for preparing preservice teachers to teach literacy are coursework, an integrated field component, and collaboration between the preservice teachers, university instructors, and teachers in the field (Helfrich & Bean, 2011). The leading organizations in literacy education and advocacy, the International Literacy Association and the National Council of Teachers of English (2017), emphasize that there is strong evidence showing the importance of field experiences in building capacity in new teachers. Field experiences afford preservice teachers an opportunity to practice what they have learned in coursework by working with students in authentic school settings to become better at teaching (Helfrich & Bean, 2011; Clark et al., 2013). The results of this study align with prior research that shows field experience has a positive effect on preservice teachers.

The opportunity to participate in practicum experiences, along with reading coursework, showed an increase in teaching reading competence (Copeland et al., 2011). Preservice teachers who worked with small groups in classrooms that supported what they were learning showed growth (Clift & Brady, 2005). Additionally, structured practicum experiences resulted in a higher preparedness to teach reading and a better understanding of why they implemented certain strategies (Otaiba et al., 2010). The literature continues to show that field experience and student teaching are considered by preservice teachers to be some of the most valuable components in educator preparation (Bornfreund, 2011). This corresponds with the results of this study, where the reading practicum and clinical teaching demonstrated a statistically significant positive increase in the self-efficacy of preservice teachers as compared to those with no/introductory field experience. This study was significant because it examined field experience in primary literacy, which is a more highly specialized area.

Implications

Learning to read is essential in every other academic field and is necessary for most aspects of life (NRC, 2010). Although much is known about how to teach children to read, there are significant differences in the requirements of educator preparation programs in the design, implementation, and duration of field experiences (Singh, 2017; Zeichner, 2010). Recognizing this importance, the ILA (2016) called for literacy to be included in every aspect of clinical practice. The implications of this research can help educator preparation programs include

specific field experiences in literacy, especially in the primary grades, where learning to read is essential. Preservice teachers need multiple experiences working with students in authentic classroom settings that provide opportunities to apply their pedagogical and content knowledge (ILA & NCTE, 2017). Yet, not all programs offer field experiences focused on teaching young children to read.

The Council for the Accreditation of Educator Preparation (CAEP, 2013) requires educator preparation programs to ensure that preservice teachers develop discipline-specific concepts and principles. However, at the state level, guidelines lack detailed requirements for literacy coursework and practicum experiences (ILA, 2015). No defined set of requirements for field experiences exists, and specifically, no explicit requirements for field experiences in primary literacy. Preservice teachers reported that any amount of time spent in field experiences was valuable (Helfrich & Bean, 2011).

Without a strong research base, it is difficult to advocate for the addition of such specialized field experiences. The results of this study show a statistically significant increase when preservice teachers participate in a reading practicum field experience. These experiences, typically requiring students to teach a small group of students, provide a gradual release of responsibility in a supportive environment. Educator preparation programs have the opportunity to design curriculum that includes multiple opportunities for real-world experiences that will have a lasting impact on a teacher's self-efficacy and preparedness for teaching reading to students in the primary grades.

Based on the research on teacher self-efficacy, it is clear that these types of successful teaching experiences in beginning literacy can build a strong, positive sense of self-efficacy for preservice teachers. This foundation will serve them well as they transition and become novice teachers with their classes. Novice teachers in the primary grades who start their careers with a strong sense of self-efficacy will be able to better manage the challenges that are inherent to the first year of teaching while being ready from day one to teach the literacy skills that are so important.

Limitations

A limitation of this study relates to the sample population and the use of a convenience sample. The study focused only on six small, private schools in one state. Would there be differences if different sizes and types of educator preparation programs were included? The use of a convenience sample, collecting data from available subjects, potentially limits the diversity of the sample

population and can cause a discrepancy in the representation of groups within the sample (Creswell, 2009). Participation was voluntary, as no students were required to complete the survey. Are there differences between those preservice teachers who chose to complete the survey versus those who chose not to participate? This is further evidenced by the fact that 32 participants at least opened and started the survey but did not finish it.

Another limitation relates to the factors that were considered in the study. The study does not identify all of the possible causes of differences in self-efficacy scores, including the amount and quality of coursework, quality of the field experiences, or collaboration between the professor and the classroom teacher. How much do these factors influence the perception of self-efficacy in preservice teachers as compared to the amount of field experience?

Next Steps

This study adds to the research base on self-efficacy for preservice teachers. Specifically, it adds a focus on self-efficacy based on the amount of field experience in the area of primary literacy. Next steps to expand this research include:

1. Repeating this current study with a larger student population that includes preservice teachers from public and private universities in Texas would provide additional evidence that there is a statistically

significant difference based on field experiences in self-efficacy for primary literacy instruction.

2. A correlation study would be another area of research that could examine the relationship between preservice teachers' self-efficacy beliefs and their instructional competency as measured by the new Science of Teaching Reading assessment or the edTPA Literacy Task for elementary education.
3. Qualitative or mixed methods research would provide additional insight into the preservice teachers' perspectives on the other factors that influence self-efficacy during field experiences, such as reading practicums and clinical teaching.

Conclusion

Teachers are a critical factor in the literacy development of students (ILA, 2015). Because a positive sense of efficacy correlates to higher student achievement, educator preparation programs must provide preservice teachers with the appropriate knowledge and skills needed to help students succeed (Tschannen-Moran & Hoy, 2001). Field experiences, including reading practicums and clinical teaching, allow preservice teachers the opportunity to practice in authentic settings with support and feedback, and increase teacher self-efficacy for literacy instruction.

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Contribution of Research

CAEP 4: AN EXPLORATION OF MEASURES USED TO ASSESS TEACHING EFFECTIVENESS

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Abstract

This study adopted a case study research design, using qualitative methods to examine three types of data that a university might collect and apply to assess the effectiveness of their teacher preparation program (TPP). Based on the triangulation of data from three sources, investigators determined how principals rated teachers, 0-3 years, who participated in the study. Responses from the teacher and principal interviews revealed that the overall preparation of graduates was proficient as supported by results from the Texas Teacher Evaluation and Support System (T-TESS) and Charter School instrument ratings. However, graduates seemed indecisive regarding aspects of the learning environment such as student management and classroom community.

Keywords: educator preparation, teacher preparation, program impact, CAEP accreditation

The current notions of teacher education accountability involve both an emphasis on what happens during teacher preparation and examination of the demonstrated outcomes of graduates in terms of teaching practice and the success of graduates' P-12 pupils (Viesca et al., 2013). After two decades of policy that relates to teacher education, teacher quality, and reliable instruments to evaluate teacher preparation programs, experts call for additional research that can help define accountability and guide in the development of teacher education programs (Bartell et al., 2018). Five broad standards outlined by the Council for the Accreditation of Educator Preparation (CAEP, 2013) serve as guidance for a teacher preparation program's accreditation. Standard One relates to content and pedagogical knowledge. Standard Two relates to clinical partnerships and practice. Standard Three targets candidate quality, recruitment, and selectivity. Standard Four focuses on program impact. The fifth standard enables a TPP to outline quality assurance and continuous improvement procedures.

Over time, implementation of the No Child Left Behind Act (NCLB; U.S. Department of Education, 2002),

the Race to the Top grant competition (U.S. Department of Education, 2009) and state-level action to develop TPP report cards and instruments (Iasevoli, 2017), policymakers and practitioners have pressed to assess TPPs based on the value-added estimates of program graduates. For the present study, value-added data represents students' performance and gains related to state academic assessments. Value-added data has provided TPPs valuable feedback regarding graduates' impact on student achievement (Bastian et al., 2016; Henry et al., 2013; Peck & McDonald, 2014). Nonetheless, a focus on value-added is limited, and these limitations indicate a need for a broader set of teacher workforce outcomes to aid TPPs' accountability and improvement efforts. (American Educational Research Association [AERA], 2015; Henry, Kershaw et al., 2012).

Considering the fluidity surrounding TPP accountability, the present study aimed to examine data that a university might collect and apply to assess the effectiveness of their TPP (CAEP, 2013). Investigators employed an explanatory case study design to explore two broad questions. The questions examined the following:

1. What were the strengths and weaknesses of the teacher preparation program as measured by principal interviews, teacher interviews, and teacher evaluation measures?
2. What was learned through different teaching evaluation measures and interviews as a source of information for the current teacher preparation program?

Summary of Literature

The current study focused on CAEP Standard 4.2, which relates to measures a TPP might submit to demonstrate the quality of graduates' teaching. However, most of the recent research refers to value-added measures leaving a call for "substantial investment in research on value-added measures and on alternative methods and models of educator and educator preparation program evaluation" (AERA, 2015, p. 1). Acknowledging the strong demand for holistic measures to evaluate TPPs, investigators highlight four research studies that applied multiple outcomes to explore teaching effectiveness.

Boyd et al. (2009) employed multiple measures through qualitative and quantitative methods to conduct a comprehensive analysis of 31 elementary TPPs. The inquiry involved several of their graduates who accepted positions in New York City Public Schools. Features of the TPP program were analyzed through the collection of data considered to be indicators of program quality such as program structure, number of reading, math, and child development courses, field experiences, and preparedness to teach emergent bilingual students. Additionally, the relationship between teachers' value-added data in the aforementioned subjects was analyzed. Faculty, program directors, directors of field experiences, and other administrative staff of these programs, candidates, and graduates were interviewed and surveyed. These data revealed variations in the effectiveness of the teachers prepared among universities with some programs graduating teachers who had a substantially greater effect on student achievement. First-year teachers who received more oversight of student teaching experiences were significantly more effective in New York City schools. The overall conclusion was TPPs can influence teacher effectiveness, specifically that of first-year teachers.

Building on existing examinations of multiple measures, Strunk et al. (2014) assessed the relationships between value-added measures of teacher effectiveness and an observational measure of teacher practice using pairwise correlations and a series of ordinary least squares regressions and found moderate correlations between value-added and observation-based measures. These findings indicated that teachers received similar but not

entirely consistent signals from each performance measure. The pilot sample was conducted with 371 teachers in the Los Angeles Unified School District (LAUSD) and included approximately 100 schools, 125 site administrators, and 210 second observer raters. LAUSD's teacher evaluation system entailed five standards (Planning and Preparation, Classroom Environment, Delivery of Instruction, Additional Professional Responsibilities, and Professional Growth). Results revealed that value-added and teacher evaluation measures failed to align perfectly with each other. Positive and significant relationships were noted between Academic Growth Over Time (AGT) scores and ratings on Standard 1 (Planning and Preparation), Standard 2 (Establishing a Culture for Learning), Standard 3 (Delivery of Instruction), and Standard 5 (Professional Growth). Strunk and colleagues' results (2014) showed that it is possible for the results from early implementations of observation-based measures of effectiveness to have similar relationships with value-added measures. However, associations between the two measures were only low to moderate, which implies that teachers may receive different indications of their effectiveness from each measure.

Accordingly, results from descriptive statistics suggested that using observational ratings to evaluate Teacher Education Programs (TEPs) were positively and significantly related to rankings based on student achievement gains. Ronfeldt and Campbell (2016) found significant and meaningful differences between TEPs, which were fairly strong across modeling approaches. Ronfeldt and Campbell (2016) compared various TEPs' evaluation ratings, observational ratings, and value-added data of 9,482 teachers staffed in 1,553 Tennessee schools who graduated during 2009-2010 and 2012-2013. Participating subjects were employed in Tennessee public schools during the 2011-2012 through the 2013-2014 academic years. Although investigators suggested that using observational ratings (OR) to evaluate TEP quality is a worthwhile approach, they believe this represents a complement to the use of value-added measures, not a replacement.

Bastian et al. (2018) found similar results with exploring teacher evaluation ratings along with the inclusion of additional data by performing a large-scale quantitative study that included over 35,000 North Carolina teachers. Data were collected through the University of North Carolina's system from 2011-2013 on early career teachers with less than five years of experience and who were evaluated by a school administrator. First, investigators established baseline data such as dimensions from the North Carolina Teacher Evaluation System along with school characteristics, GPAs at entry into teacher education, less than five years teaching, and routes to

certification. They applied logistic regression, likelihood ratio test, and the Brant tests to compare the evaluation ratings for teachers initially prepared at in-state public universities with teachers prepared outside of the state, at private universities, and who were alternatively certified. Four significant conclusions resulted from data analyses.

1. Teacher preparation programs are significantly associated with the evaluation ratings of program graduates.
2. It is important to adjust for elements of school context when analyzing the evaluation ratings of the graduates. (teacher demographics, free and reduced lunches, elementary, middle, or high school)
3. Teacher preparation programs' selection criteria and preparation experiences accounted for Evaluation results.
4. Information from Teacher evaluation ratings is different from value-added and more comprehensive (Bastian, Patterson, & Pan, 2018, p. 442).

Methodology

Research Design

A case study research design was used to examine the effectiveness of one TPP in rural East Texas. Given that teacher preparedness and proficiency was of interest, (i.e., teachers who recently graduated from the TPP), the case study allowed investigators to gain an in-depth understanding of how their graduates were performing in a natural context, which was their classroom and/or school (Crowe et al., 2011). Qualitative methods were utilized to analyze data in the current study.

Data

The collection of data took place over one semester in the Spring of 2019. Data were collected from three sources, which included interviews with teachers and principals as well as instruments the principals used to assess the performance of their teachers. By collecting multiple sources of data, researchers were able to obtain a greater insight into the phenomenon being studied, and this triangulation of information also helped to assure a greater level of validity (Patton, 1999). This added to the credibility of the study.

Interviews were conducted by the three researchers that authored this paper. The interviews were held at the convenience of and location requested by the principals and teachers. Most were held at the schools where the teachers and principals were employed. During the interviews, semi-structured questions were used. The use of semi-structured interviews provided investigators with a set of questions that would be used as a guide, but that would also allow for flexibility in clarifying answers or posing follow-up questions to participants. Due to this, the length of the interviews varied.

Each interview question related to a particular domain on the Texas Teacher Evaluation and Support System, a widely used measure in Texas that is the "recommended appraisal process designed to evaluate teachers and establish a system of support" (Texas Education Agency [TEA], 2016, p. 1). Teachers were asked to answer six questions that pertained to areas such as knowledge of students and differentiation, assessment, expectations, resources used, areas of strength, and areas in which they would like to improve (Figure 1). Principals were asked to respond to six questions as well. Of the six questions, two related to planning, two related to instruction, one related to the learning environment, and one related to professional practices and responsibilities (Figure 2).

Figure 1*Teacher Interview Protocol*

Interview Protocol (Teacher)
1) Provide examples of how you differentiate instruction and demonstrate knowledge of students and how they learn ? (What is your class effective indices percent?)
2) Other than the methods of assessment required by your district, how do you assess your students' progress? Explain what you do with the data you collect.
3) What resources, including content and knowledge of best practices, do you use when planning and delivering your lessons?
4) What are your strengths in teaching and why?
5) What are your classroom expectations and what methods do you implement to maintain those expectations? Explain how you introduce the classroom expectations to the students and what you do if those expectations change during the year.
6) What are areas of your teaching you would like to improve? How do you plan to strengthen these areas?

Figure 2*Principal Interview Protocol*

Interview Protocol (Administrator)
<u>PLANNING</u>
1) Please provide examples of how _____ has planned lessons that reflect best practice and align assessments with the standards.
2) Please provide examples of how _____ differentiates instruction and demonstrates knowledge of students and how they learn? (What is _____ class effective indices percent?)
<u>INSTRUCTION</u>
3) How has _____ demonstrated clear and accurate communication to support student engagement and deeper learning of the content?
4) What do you think are _____'s strengths in teaching and why?
<u>LEARNING ENVIRONMENT</u>
5) What kind of classroom environment does _____ create and how does he/she maintain that environment throughout the year?
<u>PROFESSIONAL PRACTICES AND RESPONSIBILITIES</u>
6) What are areas of _____'s teaching that you think he/she could improve? How do you support _____'s development in these areas?

Interview data were transcribed and coded separately by the three researchers. The researchers then met, discussed their coding, and came to a consensus on each theme. This consensus also assured a greater level of validity through analyst triangulation, again adding credibility to the study (Patton, 1999; Strauss 1987).

Additional data were collected through principal evaluation measures, which included the T-TESS and one campus created teacher evaluation measure. The T-TESS is based on Texas Teacher Standards and includes a rubric that addresses four domains, such as planning, instruction, learning environment, and professional practices and responsibilities (TEA, 2016). It also includes sixteen dimensions under those four domains (TEA, 2016). Teachers are assessed through the rubric on five performance levels. The levels are categorized as Distinguished, Accomplished, Proficient, Developing, and Improvement Needed (TEA, 2016). Although no specific reliability and validity measures are available on the T-TESS instrument, Lazarev et al. (2017) found the rubric to be “internally consistent at both the domain and dimension levels” (p. 1). Additionally, according to the results of Lazarev et al.’s 2017 study, the T-TESS rubric shows “potential to be an effective, consistent, and efficient evaluation rubric” (p. ii).

Given that one site did not use the T-TESS as a teacher evaluation measure, a crosswalk of the T-TESS and the campus-created measure was conducted to determine commonalities between dimensions or areas that were assessed with each instrument. All but one component, or dimension equivalent, was present on both instruments. The only item not assessed on the campus-created teacher evaluation measure was knowledge of students. See Appendix C for the T-TESS/Campus Created Teacher Measure Correlation.

Participants

Participants included five alumni who completed the Early Childhood (EC-6) or Middle Grades (4-8) programs at the TPP. The teachers’ principals also served as participants. The principals varied in years of experience and were female, two of which were Caucasian, one of which was African American, and one of which was Other.

The teachers’ experience ranged between 0-3 years and, of the teachers, three were female (two African American, one Caucasian), and two were male (both Caucasian). Years of experience was pretty evenly distributed, with one teacher being in his third year (Caucasian male), two teachers being in their second year (African American female and Caucasian female), and two

teachers being in their first year (African American female and Caucasian male). All were teaching in grades Pre-K/K, 3rd, or 5th at public schools in Texas. Four of the schools were “traditional” public schools, and the remaining school was a charter school. Each school varied in academic ratings. The schools were located in four different districts that varied in the representation of racial/ethnic minority student populations, of free lunch, and of location (i. e., urban, suburban, and rural areas). It is important to note that except for the charter school where one teacher was employed, the remaining three schools qualified for Title I status. For a school to qualify for Title I funds, the poverty rates of students must be above 40%, indicating that the majority of the teachers were teaching in low-income schools (U.S. Department of Education, 2008).

Discussion of Findings

Findings from the current study aligned with previous research that multiple sources of data can provide useful information regarding a TPP’s areas of strength and refinement (Bastian et al., 2018; Ronfeldt & Campbell, 2016; Strunk et al., 2014). Furthermore, teacher evaluation instruments were among the different data sources TPPs have applied. Researchers focused on two initial questions to guide the research: (1) What were the strengths and weaknesses of the teacher preparation program as measured by principal interviews, teacher interviews, and teacher evaluation measures? (2) What was learned through different teaching evaluation measures and interviews as a source of information for the current teacher preparation program?

Findings

For the first research question, the researchers first reviewed the data from the teacher evaluation measures to determine the strengths and weaknesses of the different grade level teachers represented in the study. A ranking of proficient or higher was considered an area of strength while a ranking of developing or lower an area of weakness. No teachers participating in the study were ranked lower than developing in any category. All grade levels represented received an overall ranking of proficient or higher for the T-TESS Dimensions of Standards and Alignment, Data and Assessment, Knowledge of Students, Communication, Classroom Environment, Routines and Procedures, and Professional Development. Grades levels Pre-K/K demonstrated a strength in Professional Demeanor and Ethics and ranked in a category indicating an area of weakness in the Dimensions of Differentiation, and Monitor and Adjust. Teachers in grades 3rd and 5th demonstrated strengths by ranking proficient or higher in the Dimensions of Activities and Goal Setting.

After reviewing data collected from both teacher and principal interviews and principal evaluations of teachers, the researchers determined the T-TESS Dimensions, where significant differences were evident. T-TESS Dimensions were considered a strength if teachers received a ranking from their evaluator of distinguished/highly effective, accomplished, or proficient/effective whereas those ranked by their evaluator as developing/partially effective or improvement needed/ineffective were classified as those who had an area of weakness for that dimension. Not all results for each T-TESS Dimension demonstrated a significant difference, nor was there a considerable difference based on the data collected. Based on principal evaluations and interviews only, the T-TESS Dimensions of Differentiation and Monitor and Adjust ranked as an area of weakness for teachers. Based on principal interviews and evaluations only, principals considered teachers' T-TESS Dimension of Professional Demeanor and Ethics to be an area of strength. For the T-TESS Dimension of Classroom Environment, Routines and Procedures, the principals and teachers differed in their respective evaluation measures. Researchers in the current study found contradictions among data sources. Principal evaluations, interviews, and evaluation measures indicated the aforementioned dimension as an area of strength, whereas teachers provided inconsistent responses in their interview process, which indicated they considered the T-TESS Dimension of Classroom Environment Routines and Procedures to be an area of weakness. Strunk et al. (2014) found inconsistencies between value-added and observational measures. Bastian et al. (2018) used school context such as teacher demographics, free and reduced lunches, elementary, middle, or high school to adjust variations among evaluation ratings.

For research question two, the researchers focused on the evaluation measures again as the initial tool for assessment. Although the T-TESS was the guideline for analyzing data, one school used its own appraisal system. A comparison of the two evaluation measures was completed to determine reliability (see Appendix C). Researchers discovered that the other evaluation measure aligned with the majority of the categories of the T-TESS dimensions except for evaluating the teacher of their Knowledge of Students. Since the majority of participants were evaluated with the T-TESS as the preferred evaluation measure, and only one area Dimension was not represented with the district created evaluation measure, the researcher used the T-TESS Dimensions evaluation data only as a guide for areas of focus. It was notable that all grade level teachers represented in this study ranked Proficient or higher in all categories of the Planning Dimension, which indicated to the researchers that the education program

effectively prepared their candidates with understanding and implementation of Standards and Alignment, Data and Assessment, Knowledge of Students, and Activities. It was also notable that all grade level teachers represented in this study ranked Proficient or higher in two out of three categories of the Learning Environment Dimension.

For the Dimension of Instruction, participants demonstrated inconsistency in their ranking in the different areas within this Dimension. Some participants scored as high as Accomplished, whereas some scored Developing. Achieving Expectations and Content Knowledge and Expertise were two areas where participants inconsistently scored. Pre/K and K teachers scored Developing in the Planning areas of Differentiation and Monitor and Adjust. However, all grade level teachers scored Proficient or higher in the area of Communication.

Discussion

Along with this information and other data collected, the researchers discussed the possibilities of additional findings from this study that would provide direction on how to improve upon their education program. The researchers wanted to explore the areas to continue current practices when teaching knowledge and application to teacher candidates, and areas to enhance existing curriculum and instruction practices for the education program. Based on data collected from the teacher evaluation measures, the researcher determined the education program effectively-prepared their candidates versus those areas where the program could improve. Areas that indicated a notable strength for all teacher candidates included Classroom Environments, Routines, and Procedures, Classroom Culture, Professional Demeanor and Ethics, Goal Setting, and Professional Development.

There were also areas based solely on the evaluation measures results that the researchers noted as areas for which the education program should improve. Based on inconsistencies in teacher and principal survey feedback, and overall rankings scored below Proficient on the evaluation measures, there were five areas that the researchers found as places to focus for future program development. Some areas were consistent with what professors noticed teacher candidates struggled with while in student teaching and confirmed that all teachers needed continued professional development in those areas; Differentiation, Monitor and Adjust, and Goal Setting. Other areas were not consistent with the expectations of the current education program and warranted further evaluation: Activities, and Professional Demeanor and Ethics. The inconsistencies in data require further

exploration; however, the most impressive inconsistency for the researchers would be the differentiation in principal and teacher rankings. More often than not, the teachers self-evaluated at a lower ranking than that of their evaluator, which may indicate a lack of confidence in their ability or a lack of communication from their evaluator for that area.

Limitations

Although the data collected provided invaluable intel for future program development to prepare teacher candidates, there were some limitations that future studies could address. If the study was implemented again by the researchers, two adjustments would be applied for the interview survey and participants. For the interview surveys, there was little feedback for the T-TESS Dimensions of Achieving Expectations, Content Knowledge and Expertise, and Managing Student Behavior; therefore, the researchers had to rely on rankings from the evaluation measures only. Due to limited information in these areas, interview protocol should be reexamined to prompt responses in the aforementioned areas. Schools that employ an instructional coach or assistant principal of curriculum and instruction may be a better resource to interview for teacher evaluation; however, it is the administrator of the campus who is trained and certified to complete the teacher evaluation measure used by the school/district. In addition to the teacher evaluation measure and interview with the principal, the researcher could interview the instructional coach or assistant principal of curriculum and instruction as an additional measure of comparison.

The participant group was small, but valuable information was gained through the one-one-one interview protocol and surveys. If the study was implemented again, it is recommended to revise the protocol to involve field supervisors working with student teachers. Student teacher field supervisors would allow for a larger participant group because the supervisors work with current student teachers in areas where graduates of the education program are employed. Because the supervisors are scheduled to be in designated school districts several times throughout a semester, Supervisors could follow-up with teachers and principals hired on campuses each year to collect additional data for the education program as part of their scheduled student teaching supervision visits. In a study by Lazarev and researchers (2017), “the T-TESS rubric demonstrated potential to effectively differentiate teacher performance

and served its purpose of yielding meaningful feedback that can support targeted professional development” (p. i). In addition to the collection of data informing changes to the current education program, the education program would have the opportunity to provide focused professional development opportunities for districts/campuses in the areas of weakness noted by campus/district data.

Implications/ Conclusions

Education programs may learn how to enhance their program to meet the current needs of teachers in the first years of their careers if choosing to complete a study similar to the one discussed here. Professors of education programs strive to implement best practices within the delivery of the education program curriculum that mirror the expectations the teacher candidates will implement as teachers. As a result of this goal, professors of education programs should look to the T-TESS Dimensions as a guide. Teachers are evaluated on their knowledge and implementation of the Instruction Dimension of Differentiation; therefore, education programs and campus/districts should consider the same for teachers. The T-TESS rubric or other campus created measures that are aligned with the T-TESS Dimensions have “...demonstrated potential in effectively differentiating teacher performance and served its purpose of yielding meaningful feedback that can support targeted professional development,” (Lazarev et al., 2017, p. 4). Although researchers thought teacher candidates were knowledgeable about all areas related to the T-TESS Dimensions, there were some unexpected areas where teachers did not demonstrate Proficient or higher. Based on this information, education programs may determine whether to further explore the expectations of districts/campuses and evaluate the curriculum for the established program. Although the protocol provided in this study could be an initial starting point for implementing a similar study, other educational programs may adjust or add components to meet the need of evaluation measures.

The overall goal for any evaluation measure should be improvement; the same applies for this study. The researchers initiated this study to learn about the current education program and ways to improve the curriculum and delivery of curriculum to meet the needs of beginning teachers. The researchers not only discovered areas to focus on for improvement but also identified future protocols that could support graduates of the education program.

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Contribution of Research

A REVIEW OF TEXAS EDUCATOR PREPARATION PROGRAM POLICY

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Abstract

Over the last two decades, the Texas legislature has made broad and sweeping policy changes governing and regulating educator preparation and certification in order to supply Texas schools with competent, effective educators. A time-stamped version of the Texas Administrative Code (TAC) detailing the rules governing educator preparation and certification does not exist online in a searchable format. This makes it difficult to compare changes to TAC over time. The purpose of this paper is to document the policy changes affecting Educator Preparation Programs (EPPs) and teacher certification in Texas from the formation of the State Board of Educator Certification in 1995 through the present day.

Keywords: educator preparation programs, educational policy

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The preparation of effective educators for Texas public schools is of paramount importance in assuring a high quality of life for all Texans. To underscore the public significance to the state's prosperity, over the last two decades, the Texas legislature has made broad and sweeping policy changes governing and regulating educator preparation and certification. The purpose of this paper is to document the policy changes affecting Educator Preparation Programs (EPPs) and teacher certification in Texas from the formation of the State Board of Educator Certification in 1995 through the present day.

Background

In 1995, there were 3.8 million students in Texas public schools, and enrollment was steadily growing. As a means to meet the demand for high-quality educators, and in response to a specific teacher shortage in rural areas, inner cities, and in some subject areas, the Texas Legislature passed Senate Bill 1 (74th Texas Legislature, 1995) establishing the State Board of Educator Certification (SBEC). SBEC was granted the rulemaking authority to govern EPPs, recognize public school educators as professionals, and allow educators the

authority to govern the standards of their profession (Texas Education Code §21.031, 1995).

By 1999, with almost 4 million students in Texas public schools and the accountability movement well underway, the legislature created alternative pathways to educator certification. It tasked SBEC with ensuring the quality of all Texas teachers with the passage of House Bill 714 (76th Texas Legislature, 1999). In response, SBEC educator preparation and certification rules in effect prior to 1999 were repealed (previously in Chapter 137) and replaced by newly created Chapters 227 through 232 of the Texas Administrative Code (TAC). First established to oversee the preparation of a robust supply of high-quality educators for the state, the TAC regulating the SBEC began with a focus on flexibility and innovation. It gradually shifted focus to improvement, accountability, compliance, and oversight. Since then, subsequent legislatures and SBEC have made consistent incremental changes to statute and to regulatory code that directly impacted EPPs and teacher certification.

Data and Methods

This policy review chronologically follows the political process to understand the changes to EPP policy at all levels. The evolution of legislative policy and TAC is not linear. There are official and unofficial feedback channels in which EPPs and school districts respond to policy and rule changes, which often lead to policy refinement. As such, this paper attempts to capture as many of these influences as possible in this context.

Because no timestamped record of TAC, the official description of all Texas state agency rules, exists, this study examined the Texas Register to understand changes over time. In order to adopt rules into the TAC, proposed regulations are published to the Texas Register, and a public comment period is required before adoption. At times, the proposed changes to the TAC are initiated by the Texas Legislature, and the specific legislation requiring TAC change was reviewed and is referenced throughout the paper. Other times, TEA staff, practitioners, or the SBEC initiated TAC change, primarily to clarify rules previously published and new processes implemented. These instances are also described throughout the paper, and their corresponding Texas Register references are included.

Archived issues of the Texas Register (n.d.) were accessed through the Portal to Texas History, an online repository of documents curated by the University of North Texas. Current versions of the TAC and legislative references to corresponding changes were reviewed through the Texas Secretary of State (n.d.). When statutory changes were referenced as initiating change in the TAC, the corresponding bills were also located on Texas Legislature Online (n.d.). At the end of each chapter, a reference table for specific Texas Register and Texas Legislature references is included. The following policy review chronologically discusses changes to each of the chapters in the TAC regarding the State Board of Educator Certification.

Policy Review

Chapter 227: Provisions for Educator Preparation Candidates

The current Chapter 227, composed of Subchapter A: *Admission to Educator Preparation Programs* and Subchapter B: *Preliminary Evaluation of Certification Eligibility*, has greatly evolved from the original language in the chapter. The chapter was expanded over time as concerns of educator quality and child safety dominated legislative agendas. The following paragraphs document the changes to Chapter 227.

The first iteration of Chapter 227, adopted in 1999, largely reflected the rules in the preceding Chapter 137 (21 TexReg 9341), which established the EPP as the entity responsible for attracting and retaining suitable candidates for certification. Each EPP was required to have policies in place for screening applicants for college-level skills and maintaining published and consistently applied academic criteria for admission (24 TexReg 5011). To increase the number of teachers, the legislature passed House Bill 713 (76th Texas Legislature, 1999), allowing SBEC to adopt rules to implement the *Teach for Texas Grant* program and the *Teach for Texas Pilot Program Relating to Alternative Certification* which expanded and incentivized participation in baccalaureate, post-baccalaureate, and alternative certification educator preparation programs in the state. The programs were designed to address a shortage of teachers in the state by providing financial aid to 1) undergraduates who would choose teaching as a career and 2) persons with college degrees who could receive teaching certificates through alternative certification programs but would not have access to financial aid through higher education (25 TexReg 3530).

Rule review. Chapter 227 was not changed again until 2008 when following regular agency review, the rules were reorganized to repeal the Teach for Texas Pilot Program (TEC Chapter 21, Subchapter B) to carefully define terms used throughout the administrative code for EPPs, as well as clarify admissions criteria for those applying for initial certifications and post-baccalaureate certifications at university-based and alternative certification programs. Undergraduate university-based programs could only be offered at an institution of higher education recognized as accredited by the Texas Higher Education Coordinating Board (THECB). Other state-sanctioned pathways (e.g., alternative certification or post-baccalaureate programs), could only admit students with baccalaureate degrees conferred by an institution of higher education recognized as accredited by THECB (33 TexReg 10011).

Admissions criteria required all types of EPP participants to have a minimum grade-point average of 2.5 (or 2.5 in the last 60 semester credit hours) or documentation of work, business, or career experience equivalent to the grade-point average requirement. Additionally, all EPPs were to assess participant qualifications for program entrance with an application and an interview or other screening process. Before admission, participants seeking initial certifications were required to have a minimum of 12 credit hours in subject-specific content or pass a content certification exam and demonstrate basic academic ability through qualifying scores on the Texas Academic Skills Program test, the

Texas Higher Education Assessment, Accuplacer, SAT or ACT (33 TexReg 10011).

After the changes in 2008, Chapter 227 was not altered again until 2010, when the legislature passed Senate Bill 9 (80th Texas Legislature, 2007) requiring criminal background checks for all educators. Several stakeholder meetings were held to develop background check procedures. In 2010, following the receipt of the Attorney General's opinion regarding authority and the extent of the criminal history checks, Subchapter B was added to Chapter 227 to establish procedures for a preliminary criminal history evaluation (35 TexReg 9502).

Tri-agency review. Chapter 227 was again modified when the legislature passed House Bill 2012 (83rd Texas Legislature, 2013) requiring the TEA, SBEC, and Texas Higher Education Coordinating Board (THECB to conduct a joint review of rules for educator certification. After the three agencies conducted the review and solicited stakeholder feedback, the recommended changes were not adopted into rule until 2016. In the comprehensive changes adopted in 2016, the responsibility of EPPs to inform applicants about required background checks, admission and completion requirements, and EPP performance over time were clarified in the *General Provisions* (§227.1) section of Chapter 227. In the *Definitions* (§227.5) section, several terms were explained, including *contingency admission*, which was required to be offered and accepted in writing (41 TexReg 1238). Other terms (e.g., *incoming class*, *candidate*) were defined to clarify the implementation of admissions criteria.

In the *Admission Criteria* section (§227.10), language was added to distinguish between the admissions requirements of the various types of programs and the language requiring all EPP candidates to meet all admission

criteria before passing a pre-admission certification examination. House Bill 1300 (84th Texas Legislature, 2015) added an extenuating circumstance waiver to the requirement and exempted career and technology candidates from the GPA requirement. Despite the exemptions, the incoming class for each year could not have an overall GPA of less than 3.0 (41 TexReg 1238).

In addition to the GPA admission requirements, the 12 credit-hour requirement of content-specific course work remained but was increased to 15 credit-hours for mathematics and science certifications at or above Grade 7. These admission requirements were in addition to a screening instrument or interview to allow the EPP to assess the candidates' appropriateness for the teaching field for which they apply (41 TexReg 1238). Following these adopted rule changes, EPPs sought clarification for several terms and requirements. SBEC responded by publishing several clarifications (e.g., number of years of data required to be published publicly, contingency admission requirements) to improve consistency in rule implementation and reporting (41 TexReg 8198).

Recent changes. In May 2018, Chapter 227 was amended to incorporate technical changes from the previous legislative session regarding the Texas Occupations Code and notification of potential ineligibility of EPP candidates with criminal histories to be denied certification. To safeguard against the possibility of an EPP recommending a candidate with deficiencies in basic requirements, language in Chapter 227 was added for EPPs to check candidate requirements and notify the candidate in writing prior to admission. Other changes included applying the contingency and formal admission rule to master's program students (41 TexReg 3355). Table 1 summarizes the changes to Chapter 227 chronologically.

Table 1*Chapter 227: Provisions for Educator Preparation Candidates*

Proposed Rule	Adopted Rule	Summary
May 1999 24 TexReg 3814	July 1999 24 TexReg 5011	Chapter created; created Teach for Texas Grant Program and Teach for Texas Pilot Program Relating to Alternative Certification
Feb 2000 25 TexReg 656	April 2000 25 TexReg 3530	Rules for implementation of Teach for Texas Pilot Program
August 2008 33 TexReg 6697	Dec 2008 22 TexReg 10011	Defined terms, codified admissions requirements
July 2010 35 TexReg 6001	Oct 2010 35 TexReg 9501	Preliminary criminal history evaluation established
Nov 2015 40 TexReg 7776	Feb 2016 41 TexReg 1238	2013 tri-agency review; HB 2012, 83 rd Texas Legislature, 2013; HB 1300 and 2205, 84 th Texas Legislature, 2015
July 2016 41 TexReg 4756	Oct 2016 41 TexReg 8198	Rule clarifications for implementation and reporting of previous changes
Jan 2018 43 TexReg 12	May 2018 43 TexReg 3355	EPP Candidate deficiency notice in writing

Chapter 228: Requirements for Educator Preparation Programs

Created in 1999, Chapter 228 established the rules and regulations that govern how Educator Preparation Programs (EPPs) function, including preparation, curriculum, coursework, training, assessment, and professional conduct. The *General Provisions* section of Chapter 228 originally emphasized the joint responsibility for teacher preparation required collaboration between EPPs and Prekindergarten through 12th grade public and private schools, encouraged various means of certification, and held all programs to the same standard of performance (25 TexReg 3816). The Executive Director of the SBEC was granted authority to approve new EPPs and to oversee regular review of continuing EPPs, approve certification fields offered by EPPs, and adopt curricular proficiency standards. Those oversight roles were to be developed in accordance with other lawfully governing bodies (i.e., Texas Higher Education Coordinating Board, boards of regents) and with input from an advisory committee of stakeholders including higher education, Prekindergarten – 12th grade public and private education, business and community, and regional education service centers (24 TexReg 3815).

The Consortium of State Organizations for Teacher Education (CSOTTE) assisted in the development of the original components of the proposed rules for Chapter 228,

which outlined the required curriculum and placed parameters around the standards to be adopted. Specifically, the teacher preparation curriculum was to be based on the approved standards and proficiencies adopted by SBEC. Each program was to provide evidence of the ongoing, field-based experiences relevant to each certification field and ensure participants gained experience with a wide variety of students throughout their program tenure. These current, field-based experiences were separate from the 12 weeks of full-day teaching each participant was required to complete prior to certification. Additionally, each EPP was required to ensure candidates and program instructors adhered to the Code of Ethics and Standard Practices for Texas Educators (24 TexReg 3815).

Since all EPPs were standardized under common curricular standards, they could be held similarly accountable under the Accountability System for Educator Preparation (ASEP). Chapter 228 provided guidance to EPPs in assessing and evaluating participant and program performance to ensure candidates were prepared for certification. This included establishing benchmarks and assessment of progress throughout the program in content knowledge, professional development, and professional ethics. Not only were EPP participants monitored for progress, but the efficacy of the program curriculum and

instruction was evaluated to inform program improvement, with a specific focus on induction (24 TexReg 3815).

Highly qualified. In 2001, as part of the No Child Left Behind Act of 2001, the federal government set standards for public school teachers in schools supported with federal funds often referred to as highly-qualified teachers. SBEC found that the existing administrative code did not consider Alternative Certification Program (ACP) participants that held a Probationary Certificate as highly-qualified. In 2003, SBEC amended definitions in Chapter 228 to distinguish between student teachers (participants in an EPP who had not yet received their degree) and probationary certificate holders (participants in ACPs with degrees and serving as the teacher of record) (28 TexReg 4810). Curriculum standard language was also clarified to ensure the production of highly-qualified teachers in all EPPs (28 TexReg 4811).

Practical clarifications. In December of 2008, Chapter 228 was amended to reflect discussions and decisions made in a series of meetings held throughout 2007-2008 with stakeholders. Changes to definitions in Chapter 228 included clarifications for the standardization of EPPs. For example, the amended code specified that clinical teaching, internship, and student teaching should occur in a TEA-accredited public school or TEA-recognized private school and stipulated the teacher of record be an educator who teaches the majority of the instructional day, as opposed to one class period (33 TexReg 10016).

SBEC codified changes to the preparation approval process, like opening new locations, ensuring public institutions had THECB-approved degree plans before applying to be an EPP, and changing to ten-year applications. Applicants approved under older statute were still required to be reviewed every five years (33 TexReg 6699). Rules were also expanded in Chapter 228 to clarify the process for gaining approval for new certification fields and classes, including a modified process for EPP accommodation of SBEC changes to certification grade levels (33 TexReg 6700).

Section §228.30 *Educator Preparation Curriculum* was reorganized and expanded to include specific minimum requirements for program coursework and training. Program curriculum was to include instruction in 17 different areas, including ethics, child development, assessment, differentiated instruction, and special populations (33 TexReg 6700). Under the new Section §228.35 *Preparation Program Coursework and Training*, all initial certification programs were to require a minimum of 300 clock-hours mandated to include 80 hours of

training, followed by 30 clock-hours of field-based experience, and six clock-hours of test preparation. Initial certification programs were additionally required to provide 12 weeks of clinical teaching, student teaching, or internship, during which they were assigned a mentor. Further, EPPs were prohibited from granting test approval to candidates until they met all requirements for admission and were fully accepted into the program (33 TexReg 6701).

After the implementation of the rule changes effective in December 2008, another set of stakeholder meetings was held in March and June 2010 to clarify questions most commonly asked of TEA staff about programs utilizing schools other than TEA accredited public schools as sites for student and clinical teaching (e.g., Head Start programs) (33 TexReg 8033). Changes throughout Chapter 228 were made and adopted in December 2010 to reflect stakeholder input to approve additional sites (35 TexReg 11239). In 2011, the legislature passed two bills that impacted Chapter 228: Senate Bill 8 (82nd Texas Legislature, 2011) required flexible options for field-based experiences and Senate Bill 866 (82nd Texas Legislature, 2011) required dyslexia training for undergraduate university-based programs (37 TexReg 1586).

Tri-agency review. In 2013, the Legislature passed House Bill 2012 (83rd Texas Legislature, 2013), which required the TEA, SBEC, and THECB to conduct a joint review of EPPs, in addition to the regular Texas Sunset Commission (Texas Government Code §2001.039) review of SBEC rules. The purpose of the joint review was to ensure EPP requirements reflected current teaching standards.

As a result of the joint review with TEA and THECB staff and feedback from four stakeholder meetings, significant changes to the teaching standards in §228.30 were made to align with the newly adopted TAC Chapter 149 *Commissioner's Rules Concerning Educator Standards* (30 TexReg 4955). The standards in Chapter 149 were developed to inform the teacher appraisal process required under TEC §21.351, and the changes to Chapter 228 aligned the appraisal standards in Chapter 149 to the educator preparation curriculum standards in §228.30 (39 TexReg 4355). Additional updates to Chapter 228 were driven by university deans, leaders of alternative certification programs, and public comments made during stakeholder meetings and the rule adoption comment period. A definition for post-baccalaureate program was added, the clinical teaching definition was expanded to include 24-week half-day assignments, the requirement for EPPs to spend six clock-hours on test preparation was

removed, and the 45-minute observation time requirement was removed (39 TexReg 8391).

Also, in 2013, the Sunset Advisory Commission completed its regular rule review. It recommended that SBEC develop processes for addressing formal complaints launched against EPPs, including procedures for reporting, tracking, resolving, and establishing consequences when necessary (39 TexReg 8872). To comply, TEA staff presented a formal complaint process and proposed rules for adoption at stakeholder meetings throughout 2014. The rules, adopted in 2015, required each EPP to post the formal complaint process on its website. TEA staff would be responsible for processing and investigating the complaint, informing the EPP and the complainant of the findings when recommending a resolution, and reporting results, and recommending sanctions to SBEC when necessary (40 TexReg 1372).

Compliance. Another series of SBEC work sessions and stakeholder meetings were held throughout 2015 and 2016 to address the overall quality of teachers in Texas to comply with the Every Student Succeeds Act (2015) and to address legislative changes made in the 84th Legislative Session (41 TexReg 6318). Generally, the particular emphasis placed on compliance in Chapter 228 was to improve the quality of Texas teachers by improving EPP content and rigor. Definitions in Chapter 228 were amended to apply consistent rules to programs and allow appropriate levels of flexibility across all program types.

Specifically, the approval process for new and continuing entities was clarified in rule, including a description of the evidence an EPP must present at a review. Also, just as university-based programs were held to THECB standards for online coursework, EPPs not based at a university and offering coursework online were required to meet online accreditation or certification standards. EPPs were required to provide a minimum of 300 hours of coursework and training, with 150 hours aligned to ten performance standard proficiencies

conducted before clinical teaching or internships. With a new requirement to conduct four field-observations rather than three, clinical teaching and internships were increased from 12 weeks to 14 weeks of 65 full days or 28 weeks of at least 130 half days. Exceptions were made to provide for alternative options to clinical teaching, and probationary certificates were required for internships (41 TexReg 10280).

Recent changes. In addition to several necessary clarifications regarding notification of successful and unsuccessful internship completions and observation requirements, the 85th Legislature (2017) passed Senate Bill 1839, which made several amendments to Chapter 21 of the education code regarding certification (43 TexReg 3963). Senate Bill 1839 required the TEA to provide data to EPPs to evaluate their impact, added an early childhood certification (as did House Bill 2039), added digital learning to the EPP curricular requirements, allowed up to 15 of the field-based experience hours to be fulfilled while employed as the teacher of record or serving as a long-term substitute teacher, and instructed SBEC to adopt rules to recognize the certifications of other states as a solution to the teacher shortage problem (43 TexReg 3963). The corresponding sections of Chapter 228 were amended to accommodate these changes, and §228.30c7 was added to provide the digital learning curricular requirements.

During the same legislative session, House Bill 3349 was passed to address a shortage of teachers certified to provide instruction in specific workforce training areas. The bill resulted in the addition of §228.35b, which mandated an abbreviated program of certification preparation for professionals in a trade or professional workforce training area. The new Trade and Industrial Workforce Training certification reduced the required 300 clock-hours to 200 to acknowledge that individuals receiving this certificate have prior wage-earning experience in the respective subject area (43 TexReg 8093). Table 2 lists changing requirements for EPPs over time.

Table 2*Chapter 228: Requirements for Educator Preparation Programs*

Proposed Rule	Adopted Rule	Summary
May 1999 24 TexReg 3815	July 1999 24 TexReg 5011	Chapter Created
June 2003 28 TexReg 4809	Oct 2003 28 TexReg 8608	NCLB HQ
August 2008 33 TexReg 6697	Dec 2008 33 TexReg 10016	Practical Changes
Sep 2010 35 TexReg 8033	Dec 2010 35 TexReg 11239	Student teaching site other than TEA accredited public school
March 2012 37 TexReg 1586	Aug 2012 37 TexReg 5747	82 nd Legislature SB8 flexible field-based, SB 588 dyslexia
June 2014 39 TexReg 4351	Oct 2014 TexReg 8388	83 rd Legislature HB 2012 TEA, SBEC, THECB Joint review; SB 460 student mental health training requirements
Nov 2014 39 TexReg 8872	March 2015 40 TexReg 1372	Formal complaint process
August 2016 41 TexReg 6318	Dec 2016 41 TexReg 10280	84 th Legislature, 2015 Senate Bill 1296 regular review; House Bill 2205 added a non-voting member to SBEC for alt cert programs, increased EPP reporting to SBEC; House Bill 1300 (allows a passing content test to sub for low GPA; SB 674 Mental health training requirements
June 2018 43 TexReg 3963	Dec 2018 43 TexReg 8091	85 th Legislature, 2017 SB 7, 1839 HB 2039, 3349, and 1963

Chapter 229: Accountability System for Educator Preparation Programs

Adopted in 1998 with the purpose of holding EPPs accountable for the creation of a strong, diverse workforce, Chapter 229 and its nine subchapters detailed the manner in which SBEC determined the accreditation statuses of EPPs. At that time, the primary means of accreditation rating was the certification test pass rate. However, commendations for successes in several areas of teacher performance and support were recognized by SBEC (22 TexReg 11628). In the event that a program was placed under review for poor performance, an oversight team appointed by SBEC was enlisted to provide support. In addition to accreditation status determination, Chapter 229 also required an EPP to submit an Annual Report that included data on six different performance measures: applicants, admissions, retentions, completers, employed, and teachers retained in the profession (22 TexReg 11628).

Amendments to Chapter 229 in 1999 allowed EPPs to use the best score of a participant within a year, accounted for small group performance, and provided flexibility by requiring all demographic groups meet the 70% first-time pass rate or the 80% cumulative pass rate for accreditation (24 TexReg 6745). Changes to accountability reporting in 2002 included the reporting of certification test scores for all EPP participants, rather than the previous reporting of only the test scores for program completers. This change, in addition to those to reporting timelines, better aligned the ASEP to federal Title II reporting (27 TexReg 603).

New accountability. Accountability standards remained largely unchanged until Senate Bill 174 (81st Texas Legislature, 2009) was passed, which changed both the nature and scope of EPP accountability. The new accountability system went beyond reporting participant certification test scores to make accountability information readily accessible to the public via a consumer information website (34 TexReg 8618). To accommodate the necessary

changes, Chapter 229 was repealed, and a new Chapter 229 was adopted. The new gave SBEC the authority to establish the standards of accountability and stated the purpose of the accountability system was to hold the EPPs responsible for participant readiness to teach. The new *Definitions* section added, refined, and clarified terms used in the accountability requirements. These definitions became important for reporting purposes as EPPs must differentiate between classes of participants such as *completers*, *first-year teachers* (first year of employment), and *new teachers* (first year of employment with a standard certificate). *Beginning teacher* is defined as a classroom teacher with less than three years of experience created time parameters for when an EPP should be accountable for a program completer (34 TexReg 8618).

The new section, *Required Submission of Information, Surveys and Other Data*, added layers of complexity to the accountability process. For the first time, EPPs, EPP candidates, first-year teachers, new teachers, beginning teachers, field supervisors, administrators, mentors, site supervisors, and cooperating teachers had to submit data to TEA for accountability documentation. Survey evaluations included EPP performance surveys from completers and Principal surveys regarding both individual beginning teacher performance and EPP performance. In addition, a chart detailed the data EPPs were required to submit to the agency through the ASEP. TEA was to collect and report on its website information for each EPP in three categories: Accreditation Status, Annual Performance Report, and Consumer Information. The performance indicators were

required to be disaggregated by ethnicity and gender categories according to policy established by the Higher Education Opportunity Act (2008) (34 TexReg 8618).

Accreditation Status (§229.4) was determined annually based upon performance standards set in rule by SBEC. The indicators included certification examination pass rates, beginning teacher performance based upon school administrator appraisals, student achievement improvement of students of beginning teachers, and EPP compliance with field supervision data collection requirements of first-year teachers (34 TexReg 8618). When the rule was adopted in 2010, only the certification exam pass rates were immediately implemented. Performance standards for the pass rates were phased in, requiring a 70% certification exam pass rate for the 2009-2010 academic year, 75% for 2010-2011, and 80% for 2011-2012. All other indicators were either in the pilot state, under development, or not yet addressed (35 TexReg 2849). The field supervision data collection compliance indicator was piloted in the 2009-2010 academic year. Implementation for other compliance indicators was incremental. For accreditation, the performance standards were 90% compliance in 2010-2011, 95% compliance in 2011-2012, and 100% compliance by 2012-2013. For all indicators, a small group exception was utilized to combine the performance of small (<10) groups of EPP participants over the course of three years (35 TexReg 2849). The accreditation statuses and the performance standards for each are described in Table 3 (35 TexReg 2849).

Table 3*Accreditation Statuses and Performance Standards (§229.4, 2010)*

Status	Description	Performance Standard
<i>Accredited-Not Rated</i>	Fully Accredited- assigned to newly approved	None- assigned after initial approval until data is available
<i>Accredited-Warned</i>	Fully Accredited	Fails to meet any one of four performance standards in any one year; fails to meet any one of four performance standards for any two gender or ethnicity groups in any one year; or fails to meet any one of four performance standards for any gender or ethnic group for two consecutive years
<i>Accredited-Probation</i>	Fully Accredited	Fails to meet any one of four performance standards for two consecutive years; fails to meet any one of four performance standards for any three gender or ethnicity groups in any one year; or fails to meet any one of four performance standards for any gender or ethnic group for three consecutive years
<i>Not Accredited-Revoked</i>	Not Accredited- cannot recommend candidates for certification	Fails to meet any one of four performance standards for three consecutive years; assigned Accredited- Probation for two years and SBEC determines revocation is necessary

If accreditation was revoked, EPPs could apply again in two years. If the accreditation status assigned was *Warned* or *Probation*, the EPP was required to submit an action plan for TEA review with the stipulation that TEA could prescribe measures to be included in the action plan (35 TexReg 2849).

Tri-agency Review. After the adoption of the new Chapter 229 in 2010, the ASEP language was not revised again until 2014, as a result of the joint review by THECB, TEA, and SBEC required by House Bill 2012 (83rd Texas Legislature, 2013). This review, and the associated public meetings, produced changes to Chapter 229 regarding definitions, required information submissions, accreditation status determination, and revocations (39 TexReg 8395).

With ASEP requiring the submission of data not just from the EPPs, but also from individuals, school districts, and charters, SBEC needed a means to ensure timely and accurate submission of data from all parties. In the 2010 version of Chapter 229, the language stated, “Any individual holding a Texas-issued educator certificate who willfully or recklessly failed to provide information...” (39 TexReg 4358). The phrase “willfully or recklessly” was removed so that intent and mindset would not need to be proven before action was taken to hold parties accountable (39 TexReg 8395). Additionally, public comment supported enforcement language that provided SBEC the

ability to exercise more discretion when revoking the certification of those that failed to provide data (39 TexReg 8395).

The tri-agency review of 2014 also updated the timelines and submission protocols in ASEP data requirements to reflect reporting required by Title II of the Every Student Succeeds Act (2015). Because several of the EPPs are small, the definition of group size in the accountability system was another point for consideration. The minimum group size criteria was increased from 11 to 21 to ensure accreditation status would not be based on the performance of one EPP participant. The language for accreditation status determination was amended to reflect the group size changes (39 TexReg 8395).

After review, changes were also made to the process for revocation of an EPP’s ability to recommend candidates for certification. Before 2014, an EPP assigned as failing accreditation by SBEC could then request a records review by TEA. The findings were presented to SBEC before final adoption of the EPP’s revocation. If applicable, SBEC’s decision could be appealed to the State Office of Administrative Hearings (SOAH), where a final decision was rendered with no further appeal options. To align SBEC’s role as the final arbiter of decisions, remove TEA as a decision-maker, and give EPPs an impartial review, the process was amended. An EPP assigned a failing

accreditation rating by TEA staff could request an informal hearing with TEA staff. TEA then prepared the final recommendation and notified the EPP of the result. If the recommendation proposed termination, the EPP could request a hearing before a SOAH administrative law judge who determined the appropriateness of the revocation before TEA sent the final recommendation to SBEC. SOAH issued an administrative decision based on a preponderance of the evidence standard (rather than the 2009 substantial evidence standard). If the final recommendation for revocation was submitted to SBEC, an EPP could appeal SBEC's decision in district court (39 TexReg 8395). Following the 2013 review by the Sunset Advisory Commission, Chapter 229 was further amended in 2015 to clarify SBEC's authority to revoke accreditation for noncompliance with SBEC rules and to revoke an accreditation status only after an EPP had completed a one-year probationary accreditation period (40 TexReg 1375).

Recent changes. House Bill 2205 (84th Texas Legislature, 2015) made ASEP a broader accountability system with expanded performance standards and the inclusion of principal appraisals for first-year teachers as a performance indicator. Several definitions were amended for consistency across chapters of the administrative code, and definitions for *new teacher* and *incoming class* were added to comply with the established admission criteria standards. To comply with the admission and accountability requirements of the bill, additional changes included disaggregation of performance standards by race, ethnicity, and gender, and the addition of the teacher satisfaction survey to the ASEP reporting system (41 TexReg 10302). The minimum size criteria to assess subgroup performance for accreditation was reduced from 20 to 10 to increase reporting transparency (41 TexReg 10302). For the first time, the data on performance standards were also disaggregated by certification category

or class so that performance on one particular certification test could affect the accreditation of an EPP (41 TexReg 10302).

Performance standards in Chapter 229 revised in accordance with House Bill 2205 (84th Texas Legislature, 2015) included separate accreditation performance indicators for the pedagogy and content area test pass rates, which were set at 80% and 75% for the 2016-2017 school year, respectively. They mandated an increase of 5 percentage points each year until reaching 90%. Similarly, performance standards for the newly adopted Principal appraisals were set at 70% for the 2016-2017 school year and mandated an increase of 5 percentage points each year until reaching 90%. The performance standard for the frequency and duration of field supervision was set at 95%, and the quality of field supervision, assessed using an exit survey, was set at 85% for the 2016-2017 school year and increased each year by five percentage points (41 TexReg 10302).

In 2019, rules governing the inclusion of principal appraisals as a performance indicator in ASEP were changed so that the performance standard of teachers appraised as “sufficiently” or “well-prepared” was set to 70%, without increase over time (44 TexReg 1120). In addition, the performance standards for the separate pedagogy and content test indicators were clarified, along with the distinction between the frequency and quality indicators for the field supervision indicators. (44 TexReg 1120). SBEC provided multiple options for an EPP that fails to meet a performance indicator in addition to the submission of an action plan to the TEA (44 TexReg 1120). The EPP could obtain technical assistance or professional services, be appointed a monitor (44 TexReg 7689. Table 4 reviews chronological changes to the EPP accountability system.

Table 4*Chapter 229: Accountability System for Educator Preparation Programs*

Proposed Rule	Adopted Rule	Summary
Nov 1997 22 TexReg 11628	Feb 1998 23 TexReg 1021	Creation of Chapter 229
June 1999 24 TexReg 4670	Aug 1999 24 TexReg 6745	Best score, flexibility for demographic group inclusion
Nov 2001 26 TexReg 2718	Jan 2002 27 TexReg 603	Aligned Chapter 229 with Title II
Dec 2009 34 TexReg 8618	April 2010 35 TexReg 2849	81 st Legislature (2009) SB 174; Figure 229.3(f)(1)
June 2014 34 TexReg 4358	Oct 2014 39 TexReg 8395	House Bill 2012, 83 rd Legislature 2013 required joint review of EPP standards and admission
Nov 2014 39 TexReg 8874	Mar 2015 40 TexReg 1375	Accreditation revocation possible only after 1-year probation
Aug 2016 41 TexReg 6338	Dec 2016 41 TexReg 10302	House Bill 2205, 84 th Legislature, 2015 More robust accountability system, standards set
Oct 2018 43 TexReg 7070	Mar 2019 44 TexReg 1120	Principal Appraisal standard hold
Aug 2019 44 TexReg 7689	Dec 2019 44 TexReg 7689	Commendations for high-performing EPPs, ASEP manual adopted into rule, clarify accreditation status, document and track field supervision for all candidates, the pass rate for certification examinations would be based on all examinations approved by the EPP, allow for a contested case hearing of a certification class or category

Chapter 230: Professional Educator Preparation and Certification

When Senate Bill 1 (74th Texas Legislature, 1995) created the State Board for Educator Certification (SBEC), rules concerning the preparation and certification of educators were transferred from the State Board of Education in Chapter 137 to the newly created SBEC in Chapter 230. In 1996, the subchapters in Chapter 230 were transposed mostly unchanged from the preexisting Chapter 137 text. Table 5 provides a list and description of the first subchapters of Chapter 230 (21 TexReg 11481).

Beginning with the adoption of the Texas Essential Knowledge and Skills (TEKS) as the state's curricular standards in 1997, Chapter 230 required several updates to specify the teaching certificates required for each new class

assignment (23 TexReg 8675). The first iteration of those changes was adopted in 1998. Over the next four years, changes were made to Chapter 230 to align the rule to the SBEC's *Framework for Educator Preparation and Certification* (25 TexReg 566). These changes included additions to certification requirements (e.g., Drivers Ed, librarian, and counselor certifications) (24 TexReg 6746; 26 TexReg 760; 27 TexReg 605) and also granted EPPs flexibility in determining candidate admission requirements (24 TexReg 5012). Changes continued through the SBEC's reorganization of several chapters in 2005 and 2006, where older certifications were removed, and temporary and probationary certifications were added to Chapter 230 (31 TexReg 4422; 32 TexReg 1073).

Rule review. During the 2012 regular rule review (Texas Government Code §2001.039,) a comprehensive

reorganization was proposed and adopted that transferred Subchapters A-Z into a newly created Chapter 230. The function of Chapter 230 was to serve as the “foundation for the practices and procedures related to educator preparation and certification” (37 TexReg 5748). Nine original subchapters (Subchapters A, B, M-P, Q, S, and V) were consolidated into Chapter 230 Subchapters A-H (Table 3). The subchapters reorganized the rules and procedures for

the testing and assessment of educators, issuing the various types and classes of certificates, obtaining permits including emergency certification and certification requirements for out-of-state/country educators, and rules pertaining to paraprofessional certification (37 TexReg 5748). Table 6 compares the changes made to the subchapters before and after reorganization.

Table 5

Chapter 230 Subchapters, 1996 (21 TexReg 11481)

Subchapter	Description
Subchapter A	Educator Preparation Accountability System
Subchapter D	Local Cooperative Teacher Education Centers
Subchapter E	Centers for Professional Development and Technology
Subchapter F	Professional Educator Preparation
Subchapter G	Program Requirements for Preparation of School Personnel for Initial Certificates and Endorsements
Subchapter H	Alternative Certification of Teachers
Subchapter I	Standards for Approval of Institutions Offering Graduate Education Programs for Professional Certification
Subchapter J	Graduate Education Programs for Professional Certification
Subchapter K	Alternative Certification of Administrators
Subchapter L	Post-Baccalaureate Requirements for Persons Seeking Initial Teacher Certification through Approved Texas Colleges and Universities
Subchapter M	Certification of Educators in General
Subchapter N	Certificate Issuance Procedures
Subchapter O	Texas Certificates Based on Certification and College Credentials from Other States
Subchapter P	Requirements for Provisional Certificates and Specialized Assignments or Programs
Subchapter Q	Permits
Subchapter R	Record of Certificates
Subchapter S	Paraprofessional Certification
Subchapter U	Assignment of Public School Personnel
Subchapter V	Continuing Education
Subchapter Y	Definitions, Added in 1997 (22 TexReg 3563)
Subchapter Z	General Provisions Relating to the Transition of Authority to the SBEC (repealed March 1998 (23 TexReg 3261))

Table 6

Chapter 230 Subchapters, 1996 and 2012 Comparison

Chapter 230 Subchapters (2012)	Descriptions and 2012 Additions	Original Chapter 230 Subchapters (1996)
<i>A: General Provisions</i>	New: Specified purpose (determining pedagogy and content test proficiency) and definitions that provide continuity between all entities who train, hire, and place educators	-
<i>B: General Certification Requirements</i>	Specified who can be certified and what requirements need to be met in order to be certified	M
<i>C: Assessment of Educators</i>	Regulated certification examinations and professional educator preparation. To be in compliance with Senate Bill 867 and Senate Bill 54 (82 nd Texas Legislature, 2011), two rules were added to make necessary accommodations for persons with dyslexia (§230.23) and test exemptions for the hearing impaired (§230.25).	B
<i>D: Types and Classes of Certificates Issued</i>	Defined types of certificates and length of their validity (§230.31 the establishment, implementation, and evaluation of teacher certification standards (§230.35), and the issuance of temporary teaching certificates (§230.39) (§230.33). Stipulated the characteristics and roles for which certification is required. Defined probationary certificates (§230.37) and visiting international teacher certificate (§230.41)	A
<i>E: Educational Aide Certificate</i>	Designated requirements and qualifications of an applicant, including English language proficiency.	S
<i>F: Permits</i>	Approval, issuance, and renewal of emergency permits	Q
<i>G: Certificate Issuance Procedure</i>	General application procedures for a certificate (§230.91), the role and responsibility of an EPP in recommending candidates for certification (§230.93), clarification of effective dates of certificates and issuance of permits (§230.97), information about fees for certification services (§230.99), fees for permits (§230.103), submitting fees for correction when in error (§230.104), and issuance of additional certificates based on examination (§230.105). New additions included amendment to the procedures in §230.91, making the virtual record the official record of a certificate in a printable format resulting in repeal of old Rule §230.433 regarding duplicate certificates. The <i>Teacher of Students with Visual Impairments Supplemental</i> was added to the list of supplemental certificates based on examination, which cannot be added through certification by examination.	N
<i>H: Texas Educator Certificates based on Certification and College Credentials from Other U.S. States or Territories</i>	Outlined the process individuals certified in other states (or territories) can obtain Texas certification. A new rule was added to this section called <i>Application Procedures</i> (§230.117), making a credential review and fee payment mandatory for those meeting the requirements of the subchapter. Those who do not submit all the necessary documents have one year to comply or must reapply.	O

SBEC Review. From December 2015 through June 2016, SBEC requested policy options from stakeholders focused on ways to improve educator quality through revising EPP standards to improve EPP programming and regulating the training teachers received (41 TexReg 6318), and over the next year and a half work sessions and stakeholder meetings were held to propose changes to Chapter 230 (41 TexReg 6351). Changes were adopted in December 2016 and included several to educator preparation admission and program requirements (41 TexReg 10309).

Also, during 2015, at the suggestion of the Sunset Advisory Commission in its report to the 83rd Texas Legislature (2013), rules were proposed and adopted regarding the fee structure for educator preparation and certification. The Sunset Commission recommended that fees be evaluated and adjusted to cover costs and achieve equity across payees. As a result, fees for a preliminary criminal history evaluation, a credential review from out of state, and issuance of a temporary certificate were decreased. Exceptions to the supplemental fee assessed to pay for the cost of the internet portal were removed (41 TexReg 6318). (41 TexReg 10309).

Several changes were codified in 2016 concerning testing and certification categories. In August, to comply with the requirements of House Bill 2205 (84th Texas Legislature, 2015), amendments regarding the assessment of educators were adopted. A limit was placed on the number of attempts on any certification examination to five unless *good cause* was demonstrated. *Good cause* was defined as meeting a combination of score and clock-hours of educational activities (e.g., score within one standard deviation of the mean and 100 clock hours of educational activities). Hearing-impaired candidates were exempt from testing examinations that have not been evaluated for reliability and validity for use with those with hearing impairments (41 TexReg, 6191).

Individuals from non-English speaking countries seeking a post-baccalaureate certification were required to pass the Test of English as a Foreign-Language Internet-Based Test (TOEFL-iBT). This was amended again in 2017 to increase the requirement from passing the speaking section of the TOEFL-iBT to passing all four sections of the test unless an individual's baccalaureate degree came from one of the countries on TEA's published list of English-speaking countries (42 TexReg 5680).

The educational aide certificate validity period was reduced from a five-year certificate to a two-year certificate based on data from 2014-2015, showing only about 20% of educational aides remained after two years. The issuance

of temporary teaching certificates was repealed because SBEC no longer issued 8-12 certificates for which the temporary certificate was aligned and because school districts had not participated for several years, therefore, making the certificate obsolete. Several vocational certificates (marketing, health science, and trade and industrial education) were added to the list of certification by examination, accompanied by the licensure and wage-earning experience requirements that EPPs must verify before test approval was granted. The virtual certification was also approved for teacher of record (41 TexReg 10309).

A new certification type, *Intern Certificates*, was added in 2016, establishing the intern certificate for all certificate classes except educational aide. The intern certificate was initially suggested to replace the probationary certificate. It was envisioned that individuals who applied for the intern certificate would have passed all certification requirements for that area (e.g., content and pedagogy) to ensure minimal competence. After input from stakeholders, TEA proposed a two-tiered licensing process that tied certification with the level of support and progress through a teacher education program. The differences between the two certificates was related to TEAs objective to staff classrooms where there is minimal supervision with individuals who meet the minimum competency in both content and pedagogy. The intern certificate, valid for one year, required that an individual has only to pass the content examination in the certificate field and must be held if participating in a paid internship supervised by an EPP. The probationary certificate could be issued to individuals who had successfully completed both content and pedagogy examinations and was limited to two annual renewals. Prior to this change, a probationary certificate could be renewed for up to three years (41 TexReg 10309).

The use of *Emergency Permits* was also changed in 2016 to restrict the ability of a district to renew an emergency certificate and increase the credit hour requirements in a subject to be taught from 6 to 12 hours. TEA's stated action for the rule amendments was to return the emergency permit to its original intent as an immediate need certificate rather than as a temporary certificate. Amendments to the rule limited the validity of the emergency permit from two years to one year with no option for renewal starting in the 2017-2018 school year. Exceptions for emergency permits include assignments for teachers of the visually impaired and Junior Reserve Officer Training Corps instructors, where each has its own set of respective required criteria (41 TexReg 10309).

Rules regarding EPPs' responsibility for recommending candidates for certification by TEA deadlines were also amended to clarify deadlines for when the standard certification must be completed and recommended by EPPs. Language in other rules was amended to clarify the need for an EPP or district to pay a fee for correction when the mistake on a certificate was due to a submission error; the process by which an individual can surrender a certificate no longer wanted as part of the official certification record; and the fee to change the effective date on a certificate (41 TexReg 10309).

Recent changes. In May 2018, *Educator Assessment* was again amended to update the list of required tests needed for the various certifications issued through SBEC (43 TexReg 3089). This amendment removed the testing requirements for 13 certificates no longer issued, added six new certificates with test requirements, and corrected the names of six certificates. The new *EC-6 and 4-8 Core Subjects* certificate and testing requirements replaced the *EC-6 and 4-8 Bilingual Generalist*, *EC-6 and 4-8 Second Language Generalist*, *EC-6 and 4-8 Generalist* which were phased out. Also removed were testing of the *8-12 Journalism*, *8-12 Physics/Mathematics*, *8-12 Mathematics/Physical Science/Engineering*, and several *Business Education* certificates. Testing information about the new *6-12 Dance*, *6-12 Junior Reserve Officers Training*, and *EC-12 Korean and Portuguese* certificates was added. Several certification name changes were made, including *Pre-Kindergarten-12 to Early Education-12* (43 TexReg 3089). Updates were made to Figure §230.21(e) in December 2018 to accommodate the new *Principal as Instructional Leader* endorsement and certificate (43 TexReg, 8109).

Other certification changes were adopted in 2018. After September 1, 2017, to apply for a probationary certificate, both the content and the pedagogy portions of the exam must be passed before certificate issuance, and

the certificate is valid for a maximum of two years. Individuals pursuing a *Principal as Instructional Leader* intern certificate were required to pass the new TeXeS Principal as Instructional Leader examination. In addition, the Visiting International Teaching Certificate was adopted, defining the Visiting International Teaching Program as a J-1 Visa Exchange Visitor Program officially approved by the U.S. Department of State. This change required that any party establishing a Visiting International Teacher program in Texas must first contact the State Department to validate the program before contacting TEA for issuance of an approved Visiting International Teacher certificate. School districts serving as sponsors were required to provide extensive support; participating individuals were required to meet background and criminal activity checks as well as demonstrate language, content, and pedagogical competence (43 TexReg 8109).

An increase in the number of reported cases of cheating in 2018 resulted in the term *candidates* being added to the list of individuals who are responsible for testing security and confidentiality integrity. When defined in 1997, the list of responsible individuals was established under the term *certified educators*, which included teachers, teacher interns or teacher trainees, librarians, educational aides, administrators, and counselors (22 TexReg 1368). A section was also added prohibiting the solicitation of information about test content along with language describing the penalties for violations of the rule (e.g., exclusion from taking the examination, denial of certification, voiding of a score, loss of test attempt (43 TexReg 3089). Exemptions to the five-time certification test limit included cancelled examination scores, piloted examinations. They mandated provisions of House Bill 3349 (85th Texas Legislature, 2017) for those applying for the Trade and Industrial Workforce Training certificates (43 Tex Reg 8108). Table 7 summarizes changes to Chapter 230.

Table 7*Chapter 230: Professional Educator Preparation and Certification*

Proposed Rule	Adopted Rule	Summary
Oct 1996 21 TexReg 9333	Nov 1996 21 TexReg 11481	Transferred authority from SBOE to SBEC following the creation of SBEC in SB1, 74 th Texas Legislature, 1995
Feb 1997 22 TexReg 1368	April 1997 22 TexReg 3563	Added Subchapter Y: Definitions
Nov 1997 22 TexReg 11632	Mar 1998 23 TexReg 3261	Repealed expired 230.901 regarding transfer of authority to SBEC
May 1998 23 TexReg 4756	Aug 1998 23 TexReg 8675	Updated class assignments for TEKS- based courses
Dec 1998 23 TexReg 12603	March 1999 24 TexReg 1615	Assignment criteria for new TEKS courses- (e.g., Career & Technology Education, ELA, Reading, Social Studies, Fine Arts)
Dec 1998 23 TexReg 12629	March 1999 24 TexReg 2303	Section 230.414 regarding crimes deemed to relate to the education profession relocated to 249.16
May 1999 24 TexReg 3818	July 1999 24 TexReg 5012	Allows EPPs multiple avenues to determine candidate eligibility- adds TASP test to the approved list
June 1999 24 TexReg 4674	Aug 1999 24 TexReg 6746	Drivers Ed teacher certification preparation requirements added
Oct 1999 24 TexReg 8862	Jan 2000 25 TexReg 566	Changes to make all programs consistent through the implementation of SBEC's <i>Framework for Educator Preparation and Certification</i>
Jan 2000 25 TexReg 493	March 2000 25 TexReg 2059	Educational Aide certificate
Nov 2000 25 TexReg 11221	Jan 2001 26 TexReg 760	School librarian and School Counselor assignment; grandfathers in certificates and teaching assignments prior to 1990
Nov 2001 26 TexReg 9726	Jan 2002 27 TexReg 605	Subchapter J: Preparation Requirements for Educators other than classroom teachers
April 2002 27 TexReg 2677	May 2002 27 TexReg 4695	Certification preparation requirements for TEKS-based courses; Repealed ACP only certificates
Nov 2002 27 TexReg 10696	Jan 2003 28 TexReg 931	Alignment of older ExCET and newer TECAT certification exams to create personnel assignment solutions for teachers certified under both exams
Mar 2006 31 TexReg 2783	May 2006 31 TexReg 4422	SBEC's 2005 changes in certification preparation requirements; removing some older certifications
Nov 2006 31 TexReg 9566	March 2007 32 TexReg 1073	Temporary certificate preparation
Mar 2012 37 TexReg 1590	Aug 2012 37 TexReg 5748	Repeal and reorganization of Chapter 230
March 2016 41 TexReg 1772	Aug 2016 41 TexReg 6191	Limit certification attempts
Aug 2016 41 TexReg 6351	Dec 2016 41 TexReg 10309	No new emergency certifications; added virtual certification
June 2017 42 TexReg 3344	Oct 2017 42 TexReg 5680	TOEFL-iBT four-section requirement
May 2018 43 TexReg 3089	Dec 2018 43 TexReg 8108	New certification grade-level configurations

Chapter 231: Requirements for Public School Personnel Assignments

The text in Chapter 231, originally Subchapter U of Chapter 230, historically served as a link between teaching certifications and classroom assignments. Chapter 31 was created after regular rule review in February 2009, when SBEC proposed the assignments of personnel stand alone as an independent chapter. The chapter codified the requirement of appropriate credentials for assignments, applied the rule to substitute teachers and federally funded personnel, and made adaptations for those certified before the rule effective date. Notably, the chapter contained §231.1(e), a chart entitled *Assignment of Public School Personnel* containing teaching assignments and requirements for corresponding certification(s). The chart was organized into three parts: *Part I: Requirements for Assignment of Teachers*, *Part II: Requirements for Teachers Certified Before 1966 and Assigned to Grades 6-12*, and *Part III: Requirements of Assignment of Administrators, Other Instructional and Professional Support Personnel, and Paraprofessional Personnel* (34 TexReg 3942).

Chapter 231 is subject to frequent change, as any changes in curricular offerings or certifications require changes to the assignment table. This includes changes to grade level assignments, required certification combinations, and career and technology course certifications made to accommodate legislative changes and SBOE course additions. For example, House Bill 3485 (80th Texas Legislature, 2007) mandated review and update to Career and Technology Education (CTE) course offerings and CTE courses satisfying graduation plan requirements. In 2010, when Chapter 31 was updated to reflect the CTE changes, a Speech certification for grades 7-12 was added as Speech was a course with new curriculum that satisfied a specific graduation requirement (35 TexReg 7062).

Rule review. Like other chapters, Chapter 231 was reorganized following the 2012 regular rule review (Texas Government Code §2001.039). The subchapters of Chapter 231 were reorganized by the different types of teaching assignments and are listed in Table 8 (38 TexReg 5076).

Table 8

Chapter 231 Requirements for Public School Personnel Assignments Subchapters

Subchapter	Title
Subchapter A	Criteria for Assignment of Public School Personnel
Subchapter B	Prekindergarten Grade 6 Assignments
Subchapter C	Grades 6-8 Assignments
Subchapter D	Electives, Disciplinary Courses, Local Credit Courses, and Innovative Courses, Grades 6-12 Assignments
Subchapter E	Grade 9-12 Assignments
Subchapter F	Special Education-Related Services Personnel Assignments
Subchapter G	Paraprofessional Personnel, Administrators, and Other Instructional and Professional Support Assignments
Subchapter H	Assignments for Teachers Certified before 1966

In 2014, the *Core Subjects: Prekindergarten – Grade 6* and *Core Subjects: Grade 6-8* certifications were added to the teaching assignment chart (39 TexReg 7256). In 2015, SBEC adopted changes to the grade levels associated with

certifications (e.g., Grades 6-8, Grades 7-12, Grades 8-12) (40 TexReg 6890). House Bill 218 (84th Texas Legislature, 2015) expanded the certification combinations required to teach bilingual one-way and two-way

immersion programs in elementary schools. Changes in technology applications certification grade levels, as well as an addition of a Junior Reserve Officer Training Corps certification, were also amended (41 TexReg 3304). As electives, disciplinary classes, local credits, special

education courses, and various high school electives were approved by the SBOE, the certifications required to teach them were added to Chapter 231 (41 TexReg 10322; 42 TexReg 7122). Changes to Chapter 231 are listed in Table 9.

Table 9

Chapter 231: Requirements for Public School Personnel Assignments

Proposed Rule	Adopted Rule	Summary
Feb 2009 34 TexReg 1362	June 2009 34 TexReg 3942	Established 231 from Subchapter U 230; Figure 231.1(e) codified
May 2010 35 TexReg 3584	Aug 2010 35 TexReg 7062	Updated teaching certificate requirements for CTE course offering changes from HB3485, 80 th Texas Legislature, 2007
March 2013 38 TexReg 1570	Aug 2013 38 TexReg 5076	Reorganization of chapters by assignment
Dec 2013 38 TexReg 9184	May 2014 39 TexReg 3707	Certification for professional support personnel
Sept 2014 39 TexReg 7256	Dec 2014 39 TexReg 10474	Added Core Subjects EC-Grade 6 and Core Subjects: Grades 4-8 certificates to teaching assignment chart
July 2015 40 TexReg 4299	Oct 2015 40 TexReg 6890	6-8, 7-12, 8-12 grade level certification clarifications
Jan 2016 41 TexReg 74	May 2016 41 TexReg 3304.	HB 218, 84th legislature, Bilingual Certification
Aug 2016 41 TexReg 6375	Dec 2016 41 TexReg 10322	SBOE approved disciplinary, local and elective courses added
Sept 2017 42 TexReg 4202	Dec 2017, 42 TexReg 7122	CTE course certifications, others

Chapter 232: General Certification Provisions

Prior to 1999, Chapter 232 was entitled *General Requirements Applicable to All Certificates Issued* and contained information on certification requirements that were later moved to Chapter 230 (25 TexReg 571). Chapter 232 focused on the types of certificates granted, as well as renewal and continuing professional education requirements. In 1998, the classes of certificates offered included: superintendent, principal, classroom teacher, librarian, counselor, educational aide, and emergency. Each certificate granted before September 1, 1999, with the exception of the emergency certification, was valid for the life of the individual (23 TexReg 8676). The standard certificate renewal period was changed to five years in August of 1999 (24 TexReg 6750). Also, in 1999, the chapter was expanded to include different classifications within certificate types: standard, provisional, professional,

one-year, probationary, temporary, and emergency (24 TexReg 10703). At the same time, SBEC repealed several field-based experience requirements to promote innovation and creativity in the teacher preparation field (25 TexReg 571).

In 2003, Chapter 232 was reorganized to contain three chapters: Subchapter A defined types and classes of certificates issued; Subchapter B enumerated processes for certificate renewal and continuing professional education requirements; and Subchapter C set out rules and regulations for complying with national criminal history review of active certificate holders (25 TexReg 5332; 28 TexReg 8609). After making technical changes to align the chapter with the No Child Left Behind Act (2001) and the Education and Secondary Education Act (2004), a new, temporary 8-12 teaching certificate was created in 2004 to

provide certification options for school districts to meet highly qualified standards.

The content and number of Continuing Professional Education (CPE) hours for renewal of each five-year standard certificate, including school librarian certificates, were adopted in 2006 (31 TexReg 4423). In 2007, rules were added to the criminal history text of Subchapter C to comply with Senate Bill 9 (80th Texas Legislature, 2007). Before the passage of this law, only newly certified educators were required to be fingerprinted. After the law went into effect, all educators were required to be fingerprinted as part of the criminal history background check. Rules were added to Chapter 232 to establish the procedures, responsibilities, and consequences for noncompliance for school districts (33 TexReg 6370). Throughout 2008 and 2009, several iterations of technical clarifications and an Attorney General's opinion to resolve conflicts regarding the criminal offenses related to the field of education between education code and occupation code were adopted (33 TexReg 4668; 33 TexReg 6370; 34 TexReg 3942; 34 TexReg 7198).

Rule review. Regular rule review (Texas Government Code §2001.039) in 2012 led to the repeal of Chapter 232 Subchapters A-C. The rules codified in Subchapter A were moved to Chapter 230 and reorganized as new Subchapter D, *Professional Educator Preparation, and Certification* to align with rules found in Chapter 230. The new subchapter retained the name, *Types and Classes of Certificates Issued*, and included new statutory requirements as a result of House Bill 1334 and Senate Bill 866 (82nd Texas Legislature, 2011) (37 TexReg 5763).

The rules codified in Chapter 232, Subchapter B, became the new Chapter 232, Subchapter A: *Certificate Renewal and Continuing Professional E Requirements*, and the rules codified in Chapter 232, Subchapter C, became Chapter 232 Subchapter B: National Criminal History Record Information Review of Active Certificate Holders. The changes to the rules in both subchapters were minimal and reflected no changes to the rule text. Rather, administrative rule references were renumbered, streamlined, and updated to make them more clear, accessible, and understandable to the public (37 TexReg 5763). Due to House Bill 1334 and Senate Bill 866 (82nd Texas Legislature, 2011), a few minor statutory requirements were added to Subchapter A in reference to continuing education requirements for educators teaching students with dyslexia and adding language for consistency with the renewal restrictions and conditions imposed by other statutes (37 TexReg 5763).

Continuing education. In 2013, Subchapter A §232.11 was amended to conform with requirements authorized by House Bill 642, and House Bill 3793, (83rd Texas Legislature, Regular Session, 2013). This new statutory requirement amended TEC §21.054, requiring classroom teachers, principals, and school counselors to earn continuing education in specific areas. These included collecting and analyzing data, technology use, dropout recognition and prevention, teaching diverse student populations, and allowing participation in mental health first aid training programs. To comply with the TEC §21.054 changes, SBEC proposed amendments in 2014 to the rules establishing the number and content of professional education hours and options for meeting the requirements in new areas (39 TexReg 3709).

Rule review. In November 2015, SBEC rules, specifically Chapter 232, were reviewed to comply with Texas Government Code §2001.039. Rule actions related to the review and stakeholder meetings held by SBEC and TEA staff resulted in the removal of redundant language throughout Subsection A, clarification of TEA and SBEC staff responsibility for auditing certificates, and clarification of acceptable Continuing Professional Education (CPE) activities along with the number of required CPE hours required for certificate renewal. The language was amended specifically related to the renewal requirements for school counselor and librarian certificates. In addition, the amended language in the CPE provider section required providers to maintain CPE record activity for seven years, outlined procedures for investigating complaints and violations of CPE providers, defined TEA's ability to review provider documentation, and provided sanctions for rule violations (41 TexReg 6195).

Additional amendments were adopted to implement the requirements from legislation passed during the 84th Legislative Session. Senate Bill 382 (84th Texas Legislature, 2015) allowed CPE credit for completing an instructional course on the use of an automated external defibrillator (AED), and for completing suicide prevention training to meet TEC §21.451 guidelines as amended by House Bill 2186 (84th Texas Legislature, 2015). Senate Bill 1307 (84th Texas Legislature, 2015) exempted military service members who failed to renew a license in a timely manner from increased fees or penalties and extended the requirement to complete license renewal and continuing education requirements an additional two years to that population (41 TexReg 6195).

Recent change. In 2017, Senate Bill 7 (85th Texas Legislature, 2017) addressed improper relationships and educator misconduct. The intent of the legislation was focused on prevention training, recognition, and reporting

of sexual misconduct between educators and students. With the additional continuing education requirements and topics for teachers, principals, and counselors, the bill expanded the definition of *educator* to include anyone employed in a public or private school, increased the notification requirements for certain types of misconduct and to whom the misconduct must be reported, gave immunity for misconduct reporting to whistleblowers, and increased sanctions on superintendents and principals who failed to report misconduct in a timely fashion. The bill further expanded the type of conditions in which educator certification could be revoked (43 TexReg 3091).

Amendments to Chapter 232 were adopted in 2018 to comply with Senate Bill 7 and also Senate Bill 1839 (85th Texas Legislature, 2017), adding CPE topics centered on digital learning, digital teaching, and technology integration in the classroom. Certificate renewal after June 2019 required educators with a standard classroom teacher and principal certificates to complete CPE activities that relate to these topics. Although there were no legislative changes to CPE topics for counselors, to be consistent with renewal rules for principals and teachers, SBEC required counselors to have CPE hours in developing graduation plans for students, implementing strategies to combat student dropout, and informing students about career opportunities, and information about college admission process (43 TexReg 3091). Changes to general certification requirements over time are listed in Table 10.

Table 10*Chapter 232: General Certification Provisions*

Proposed Rule	Adopted Rule	Summary
Nov 1997 22 TexReg 11633	Aug 1998 23 TexReg 8676	Lifetime certificate established; Classes of certificates established
June 1999 24 TexReg 4682	Aug 1999 24 TexReg 6750	Standard Certificate (5-year renewal) replaces Lifetime Certificate
Dec 1999 24 TexReg 10703	Jan 2000 25 TexReg 571	Established different types of certificates
March 2000 25 TexReg 2524	June 2000 25 TexReg 5332	CPE requirements added for non-teaching certifications
Nov 2001 26 TexReg 9729	Jan 2002 27 TexReg 607	Repeal outdated certifications
Nov 2002 27 TexReg 10859	Jan 2003 28 TexReg 933	Reading Specialist certificate requirement
June 2003 28 TexReg 4811	Oct 2003 28 TexReg 8609	Aligned rule to NCLB, ESEA
Feb 2004 29 TexReg 1809	April 2004 29 TexReg 3960	Creates temporary certificate
March 2006 31 TexReg 2789	May 2006 31 TexReg 4423	Retitles chapter from <i>General Requirements Applicable to All Certificates Issued to General Certification Provisions</i> Modifications/ clarifications to CPE requirements
Sept 2007 32 TexReg 6723	Dec 2007 32 TexReg 9109	Retroactive criminal history checks
Feb 2008 33 TexReg 828	June 2008 33 TexReg 4668	Certification expiration date clarification, other technical updates
March 2008 33 TexReg 2632	Aug 2008 33 TexReg 6370	Technical clarifications to CPE requirements; temporary and probationary exemptions
Feb 2009 34 TexReg 1363	June 2009 34 TexReg 3942	Attorney General opinion on crimes deemed to be related to the education profession
May 2009 34 TexReg 2650	Oct 2009 34 TexReg 7198	Probationary Certificate extension
Mar 2012 37 TexReg 1617	Aug 2012 37 TexReg 5763	Subchapters A, B, and C repealed and replaced with new following SBEC rule review
Aug 2013 38 TexReg 5656	Dec 2013 38 TexReg 9361	Renewal and continuing education for military service members
Dec 2013 38 TexReg 9187	May 2014 39 TexReg 3709	Implementation of HB 642 (CPEs for diverse populations) and HB 3793 (mental health CPEs)
March 2016 41 TexReg 1777	Aug 2016 41 TexReg 6195	Technical changes from 84 th Legislative Session; CPE credit given for courses on the use of the automated external defibrillator
March 2017 42 TexReg 1701	Oct 2017 42 TexReg 5682	Automated renewal system procedures
Jan 2018 43 TexReg 22	May 2018 43 TexReg 3091	Digital learning, sexual misconduct added to CPE requirements; CPE requirements for counselors added

Conclusion

Public school enrollment in Texas has steadily increased since the late 1990s, demanding a constant and expanding supply of high-quality public education teachers. In 1998, the Texas Legislature established the State Board of Educator Certification (SBEC) as a means of elevating the standards of the teaching profession and ensuring the state's ever-growing need for high-quality teachers in every classroom. Over time, concerns of educator quality, student safety, and transparency manifested as changes to

the statute and rule regulating educator preparation programs. This paper documents those changes to provide a written record for reference to further education research in Texas. As the state continues to seek policy solutions that increasingly guarantee access to outstanding teachers for every student, remembering and reflecting on the history that has led to current circumstances serves as an important foundation. Several changes to the rules occurred during late 2019 that are not captured in this review but will be added as the changes become effective.

Appendix A

1995	<ul style="list-style-type: none"> • State Board of Education Certification (SBEC) established
1998	<ul style="list-style-type: none"> • Texas Essential Knowledge and Skill adopted as new state curricular standards • Accountability System for Educator Preparation (ASEP) created
1999	<ul style="list-style-type: none"> • SBEC Rules adopted- New Chapters 227-231 • Alternative Certification pathways and various types of certificates created as a means of increasing number of teachers in Texas
2001	<ul style="list-style-type: none"> • No Child Left Behind highly qualified standards enacted
2004	<ul style="list-style-type: none"> • Stakeholder Meetings - Temporary teaching certificate approved as alternative route to certification • TExES Test Phased In
2005	<ul style="list-style-type: none"> • Stakeholder Meetings for ESEA compliance (all core subject teachers highly qualified by end of 2005-2006 school year)
2007	<ul style="list-style-type: none"> • All educators required to have fingerprinting and criminal background checks
2008	<ul style="list-style-type: none"> • Stakeholder Meetings following Regular Rule Review- Standardization of admissions, accountability, curriculum, field-based experience, clock hours of training
2009	<ul style="list-style-type: none"> • ASEP expanded by Legislature Senate Bill 174 • Requirements of School Personnel Assignments moved to stand-alone chapter (231).
2010	<ul style="list-style-type: none"> • Stakeholder Meetings- clarifications- approved schools for field-based experiences
2013	<ul style="list-style-type: none"> • Sunset Advisory Commission Review & Tri-Agency Review (TEA, THECB, SBEC) • House Bill 5 dramatically changed graduation plan requirements
2014	<ul style="list-style-type: none"> • Stakeholder Meetings – New T-TESS appraisal system • Formal complaint process
2015	<ul style="list-style-type: none"> • Elementary and Secondary Education Act (ESEA) Reauthorized as Every Student Succeeds Act (ESSA) • SBEC Work sessions and Stakeholder Meetings for Every Student Succeeds Act compliance and to raise EPP standards, programs, and teacher training
2016	<ul style="list-style-type: none"> • Comprehensive changes resulting from rule review and ESSA compliance – Increased requirements for EPP admission and training

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Contribution of Research

PERCEPTIONS OF RESEARCH: COMPARING PRESERVICE TEACHERS WITH OTHER MAJORS

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Abstract

This study employed a survey research design, using both qualitative and quantitative methods to examine undergraduate students' perceptions of research by major, location, and classification. Our intention regards how to increase support and provide research access to all undergraduate students, specifically preservice teachers. The Kruskal-Wallis test revealed statistically significant differences in research opportunities across undergraduate majors. Consistent with the literature, education majors lagged behind other majors pertaining to research access, regardless of location and classification. Based on the analysis of qualitative data and 67% feedback from education majors, we recommend that teacher education programs explore different undergraduate research models, consider embedding research into the curriculum, and increase faculty mentorship.

Keywords: preservice teachers, teacher candidates, undergraduate research

Spreading like a brush fire, universities continue to develop undergraduate students' inquiry and research skills. The past decade has witnessed this transformation of undergraduate research experiences. Since the National Survey of Student Engagement (Bauer & Bennett, 2003) identified undergraduate research as an educational practice that strongly influences student success, over 900 universities support the Council on Undergraduate Research (CUR), a national organization established in 1978, for the sole purpose of promoting research in undergraduate education (Yu & Yu-Min, 2017). The Council on Undergraduate Research (2016) defines research as "an inquiry or investigation conducted by an undergraduate student that makes an original intellectual or creative contribution to the discipline" (p. 8). Similarly, a cultivating body of literature supports the benefits and gains of engaging undergraduate students in research such as strengthening their independence and the quality of students' inquiry processes, problem-solving, and communication skills (Bauer & Bennett, 2003; Girves et al., 2005; Kuh, 2008). In a study sponsored by the National Science Foundation, approximately 4500 participating undergraduate students reported an increase of understanding, resilience, confidence in conducting research, felt inspired to pursue graduate school programs (Ishiyama, 2002). Furthermore, first-generation and traditionally underrepresented minority students seem to

benefit the most from consistent participation in undergraduate research (Horsch et al., 2012; Ishiyama, 2002; Kaul & Pratt, 2010; Nagda et al., 1998; Schneider et al., 2016; Stanford et al., 2015).

As a result of applying effective strategies and diverse approaches, teachers act as agents of change, becoming leaders in education, continually receptive to growth, inquiry, and research. Infusion of academic experiences into undergraduate teacher education courses is an avenue to supporting inquiry and research skills (Szecsi et al., 2019). Despite the national attention and multiple benefits that research offers, "the research experience for undergraduate students in education is less prevalent than that offered in undergraduate study in other disciplines such as math, biology, and chemistry" (Manak & Young, 2014, p. 35). Our focus in the current study regards how to increase support and provide research access to all undergraduate students, specifically preservice teachers. Using qualitative and quantitative measures, we employed survey data and explored two major questions to determine undergraduate students' basic knowledge and experience of research:

- 1) What were variations in the participants' knowledge and experience towards undergraduate research by hometown location, major, and classification?
- 2) How might the university strengthen support of undergraduate research to provide access to all students?

Context

This study occurred at a small university in east Texas with an enrollment of approximately 13,000. Over half of the undergraduate students represent first-generation to attend college. Business, Education, Fine Arts, Forestry and Agriculture, Liberal Arts, Science, and Math make up the six colleges that involve students through a number of departments. Approximately 11,623 of the students represent undergraduates, and 1,639 represent graduate and postgraduate. Student demographics comprise African American (18.5%), Latinos (13.2%), White (61.8%), and other (6.5%). The College of Education offers a doctorate degree in Educational Leadership and Human Services, and the College of Forestry and Agriculture offers a doctorate degree.

Review of Literature

According to Manak and Young (2014), preservice teachers receive limited exposure to research compared to other disciplines. Experts have documented benefits preservice teachers receive, such as refinement of teaching skills, an appreciation for research, and an increased understanding of the relationship between theory and practice (Lassonde, 2008; Manak & Young, 2014). Considering the need to increase research access to education majors, the current literature review summarizes four studies regarding successful approaches to offering research access to teacher candidates. Multhaup et al. (2010) described three different undergraduate research models:

“(a) the traditional model, in which an undergraduate joined a professor’s ongoing research project; (b) the consultant model, in which an undergraduate conducted a largely independent project with a professor’s guidance; and (c) the joint-creation model, in which a student and the professor launched a new project together” (Multhaup et al., 2010, p. 21).

An illustration of the “consultant undergraduate research model” is evident in Trent’s (2010) study in which he applied qualitative research that explored the experiences of a group of teacher candidates in Hong Kong. Participating English Language preservice teachers engaged with an action research project as part of their undergraduate teacher training program. Trent (2010)

examined how participation in an action research project influenced their experiences of becoming teachers. The teacher candidates investigated a classroom-based issue through an action research project that enhanced their ability to develop attitudes and skills needed for development as teacher researchers in schools. Prior to beginning data collection, teacher candidates attended a series of lectures and seminars related to various aspects of research methods, such as selecting a research topic and constructing research questions, as well as an introduction to different methods of data collection and analysis (Trent, 2010). Data were collected from teacher candidates through 35 to 50-minute audio-taped interviews. Findings indicated that as teacher researchers, the trainee teachers challenged previously held perceptions about their engagement in teaching, their views of teachers and teaching, as well as their alignment with some aspects of contemporary educational discourse. For instance, teacher candidates expressed concern that some teacher education programs promote unitary views of teaching and learning. Trent concluded that action research could be an effective tool for student teachers to recognize, accept, and address diverse student needs.

Similar to Trent (2010), Culp and Urtel (2013) introduced physical education students to undergraduate research (UGR) by also implementing the consultant model at Indiana University Purdue University Indianapolis (IUPUI). However, Culp and Urtel mentored preservice teachers with a project beyond course work. Culp and Urtel credit successful undergraduate research to a reward system and the infrastructure. The physical education teacher education faculty (PETE) who mentor undergraduate students in research submit this endeavor to their tenure, promotion, and merit pay consideration portfolios. Inquiry and research represent characteristics of STEM-based research (Culp & Urtel, 2013); therefore, PETE faculty tied kinesiology undergraduate research to this quality to help secure grant funding. One of the unique aspects of the campus wide UGR program is an initiative referred to as RISE which started in 2009 at IUPUI. RISE stands for research, international study, service learning, and experiential learning. Following the completion of at least two of the four possible types of experiences, this achievement is recognized with a documentation on the students’ transcript.

Through a curriculum embedded and consultant model, Manak and Young (2014) outlined barriers, solutions, and examples of how teacher education programs can successfully engage preservice teachers in research. A collective set of barriers faculty and student barriers involve lack of time by faculty members across the United States due to their course load. In addition to teaching full

loads of classes, education faculty members assist with pre-practicum experiences, supervise student teachers, and serve on numerous university accreditation committees. Preservice teachers complain of high demands from methods courses and field experiences, leaving no time for research. “Students add that many of them spend much of their free time working and/or volunteering with children in their communities to bolster their teaching experience...” (Manak & Young, 2014, p. 36).

At Bridgewater State University, students engage in research in the Introduction to Education course. The 40-hour classroom observation requirement relates to research. Preservice teachers select a topic of interest, conduct a literature review of recent research, and formulate questions based on the literature. They are required to observe three different grade levels to provide answers to their questions. Through collaboration in class, the professor guides candidates in refining interview questions, and techniques for interviewing administrators, teachers and parents.

Furthermore, during the semester, the professor leads preservice teachers in writing an abstract and preparing a research poster presentation to share findings and conclusions at the university’s research forum, as well as at the National Conferences on Undergraduate Research (NCUR). Comments from preservice teachers’ about the impact after conducting research as freshmen and sophomores include: “(1) great hands-on learning experiences, (2) gave me new and innovative aspects of education, (3) helped me see the big picture of education, and (4) plans to continue research with their own classrooms” (Manak & Young, 2014, pp. 37-38). While some teacher education programs increase research opportunities for education majors, Manak and Young (2014) suggested that teacher preparation professors continue to publish and present successful practices in undergraduate research to propagate the notion that inquiry and research enhance the discipline of education.

Contrary to the consultant approach of exposing preservice teachers to inquiry and research, Myers et al. (2018) employed a traditional model in which a student serves as an assistant to a faculty member. For instance, the faculty member illustrates effective research methods by assigning the student parts of the research study that supports the bigger picture, such as data analysis. Using a case study design, Myers et al. (2018) analyzed a research collaboration between teacher education faculty and preservice teachers, employing the undergraduate-faculty model. Data collection involved observations, written and oral reflections, and field notes from three preservice teachers and five faculty members. Investigators sought to examine the perceptions of faculty and preservice teachers

regarding research as they engaged in a summer data analysis workshop.

Using the Nvivo software, data revealed that participants identified both opportunities and obstacles they perceived that were associated with conducting an empirical study. The faculty involved in this study recognized that the study extended opportunities for technology support, honest conversations, and thoughtful collaboration. Preservice teachers were optimistic about the opportunity to experience and understand the research process. Additionally, preservice teachers appreciated opportunities to make new relationships and engage in professional learning alongside faculty members. Obstacles perceived by faculty entailed burdensome paperwork, the lack of basic research methodology training, and the lack of academic writing exposure on the part of the preservice teachers. The preservice teachers encountered roadblocks such as transportation and lack of background information about their role in the project prior to the project start. Based on this initial attempt at incorporating undergraduate research into the teacher education program, Myers et al. (2018) suggest that mentoring preservice teachers during a summer research project and investigating perceptions of the participants are avenues that teacher education programs can use to further support preservice teachers’ inquiry and research skills. Also, the undergraduate-faculty model has the potential to develop preservice teachers who approach teaching with a researcher’s mindset making data-driven instructional decisions.

Methodology

This study adopted the survey research design, using both qualitative and quantitative measures to examine undergraduate students’ basic knowledge and perceptions of research to answer two major questions:

- 1) What were variations in the participants’ knowledge and experience towards undergraduate research by hometown location, major, and classification?
- 2) How might the university strengthen support of undergraduate research to provide access to all students?

Investigators employed a combination of convenient and snowball sampling. Data were conveniently collected during the third week of the semester from sophomores through their initial reading methods course for elementary education majors. To obtain credit for an honors contract, participating sophomores completed the survey and then shared survey information with students across the university using their core subject classes and student organizations.

Data Collection and Analyses

Quantitative data were collected using the 6-point Likert scale responses. Reliability was measured using Cronbach's alpha, and the Kruskal-Wallis test disaggregated responses to each item. Qualitative data were collected from open-ended questions 20-22, and cogenerative dialoguing was incorporated (Tobin & Roth, 2005), which involved the researchers analyzing the data together. During the data analysis, the researchers considered each sentence and continuously prompted themselves. When similar comments repeatedly appeared from the data, we created categories that supported overarching themes (Strauss, 1987). Throughout the process, the researchers established trustworthiness by consistent dialoguing about each investigator's perception of the data. According to Tobin and Roth (2005), "The power of cogenerative dialoguing lies in the fact that all investigators refer to the same set of events and that the views and understandings of all participants are valued; thus, understandings and explanations are cogenerated" (p. 315).

Development of the Survey

The Undergraduate Research Survey was influenced by Bruce Frey's (2015) nine characteristics of good survey questions. Frey recommends "using simple wording and appropriate vocabulary. Avoid including multiple ideas in a question or statement" (p. 179). Accordingly, content validity was enhanced through meetings with faculty across the campus to collaborate regarding participants' responses to a pilot study of the survey. The director of the school of honors, undergraduate research campus coordinators, and faculty from the English and Elementary Education Departments provided feedback on the revised survey. A total of 663 undergraduate students responded to the pilot study, which consisted of 12 items through a combination of convenient and snowball sampling. Cronbach's alpha(α) was measured, and results yielded a reliability score of Cronbach's $\alpha = .59$. Descriptive statistics revealed that 75.1% of participants agreed or strongly agreed that the statements in the survey were clear and easy to understand. Participants indicated through written comments that the Likert scale needed to add the choice, "Neither Agree nor Disagree." Further, participants suggested that the questions needed more specificity and a definition of research. The brief survey collected demographical data through items 1-3 Items 4-8 entailed research-related experiences through a 5-point Likert scale (strongly disagree, disagree, not sure, agree, and strongly agree). Items 9 and 12 related to the clarity of the survey questions, and items 10 and 11 involved written qualitative responses regarding students' reasons for engagement in research.

Based on responses from the pilot study and collaboration with undergraduate research experts from various departments, the survey was revised to include the Council on Undergraduate Research's definition and additional statements to gain information about empirical research and faculty mentorship. These revisions increased the size of the survey from 12 to 23 items. With Institutional Review Board approval, the revised survey was dispersed across the university through a combination of convenient and snowball sampling strategies, and 237 undergraduate students responded Cronbach's $\alpha = .758$, which indicates good reliability of the Likert-scale questions in the revised survey. Items 1-5 and 23 collected additional demographical data such as grade point average. Items 6-19 solicited information regarding participants' research experiences in high school and college. Further, the revised instrument petitioned information about faculty mentors through a 6-point Likert scale (strongly agree, agree, disagree, strongly disagree, neither agree nor disagree, and not sure). Participants were required to provide written responses to Items 20-22, which solicited additional information about faculty mentors and their research interests.

Discussion of Quantitative Measures

The Kruskal-Wallis test compared the differences in the research knowledge and experience among different groups of students, which provided answers to Question 1: What were variations in the participants' knowledge and experience towards undergraduate research by hometown location, major, and classification? Tables 1-3 illustrate responses for statements regarding undergraduate research experience. The majority of the participants strongly agreed or agreed to the statements listed.

Location

For city locations, descriptive statistics showed that participants were mostly from Suburban (38%), Rural (30.4%), and Urban (23.6%) areas, with 5.5% of them from other locations. The Kruskal-Wallis test showed there was a significant difference in this statement "Prior to launching a research study, an investigator should gain approval from the organization's institutional review board" among different city locations the participant grown up, with $H=8.485$ (3, $N=225$), $p=.037$ and this difference was especially significant between the choices of suburban and other. Among students who have conducted research in college, there was a significant difference in this statement "Prior to launching a research study, an investigator should gain approval from the organization's institutional review board" among different city locations the participant grown up, with $H=8.177$ (3, $N=186$), $p=.042$ and this difference was especially significant between the choices of suburban

and other. One variation by city location was that participants from suburban areas strongly agreed, whereas participants from other locations agreed. Research studies in the area of location were unavailable. Therefore, our findings indicate that participants from suburban and other area high schools may have been exposed to research. Nonetheless, participants from rural and urban areas may lack research experiences.

Majors

For students who were enrolled in different majors, descriptive statistic showed most students were Education related majors (67.9%), followed with Science and Mathematics related majors (9.3%), and Liberal, Applied Arts related majors (7.6%), Business-related majors (6.3%) and others (8.9%). Kruskal-Wallis test showed that there was a significant difference in the following statements: “I have conducted research in college” with $H=18.316$ (6, $N=237$), $p=.005$, “Prior to launching a research study, an investigator should gain approval from the organization’s institutional review board” with $H=12.772$ (6, $N=231$), $p=.047$, and “When I conducted research, it was required for a class or project” with $H=13.118$ (6, $N=237$), $p=.041$. There was a significant difference in this statement: “When conducting true experiments, a null hypothesis will likely be formulated” among those who had not conducted research in college, with $H=10.990$ (4, $N=43$), $p=.027$. Science-math related students rated it significantly higher compared to education-related students, $p=.038$. It was also significantly different when answering this statement: “The null hypothesis relates to commonly accepted theory or ideas in which the investigator attempts to disprove” with $H=13.109$ (4, $N=43$), $p=.011$. Science-math related students rated it significantly higher compared to education-related students, $p=.030$.

There was a significant difference in the statement, “Conducting research provides an avenue for solving educational, social, economic, political, medical, and other problems” among students who had conducted research in high school, with $H=13.155$ (6, $N=162$), $p=.041$. Liberal and applied arts related students rated significantly higher compared to students who were education-related, with $p=.043$. No significant difference was found for these statements among students who did not conduct research in high school. These considerable differences imply that inconsistencies exist in research opportunities across majors and that math, science, and liberal arts majors may

be exposed to research more than education-related majors and could account for knowledge of institutional review board processes and null hypothesis. This finding is consistent with the literature that education majors lag behind other majors regarding research access (Culp & Urtel, 2013; Manak & Young, 2014).

Classification

Regarding classifications of participants, descriptive statistics showed 38.4 % of students were juniors, about 35.9% of students were Sophomores, 15.2% of students were Freshmen, and 9.2% of them were Seniors. Kruskal-Wallis test revealed that there was a significant difference in the following statements, “I conducted research while attending high school” with $H=9.830$ (4, $N=237$), $p=.043$, and “I have conducted research in college” with $H=18.981$ (4, $N=237$), $p=.001$. Significant differences were found between juniors and freshmen with $p=.002$, indicating that junior had more opportunities to conduct research compared to freshmen. Differences were also found between sophomore and freshman with $p=.033$, indicating that sophomores had more opportunities to conduct research compared to freshmen. It was also significant for the following statement: “Sources for my literature review consisted of books, journals, and websites” with $H=9.651$ (4, $N=237$), $p=.047$. Among students who had conducted research in college, there was a significant difference in this statement “Sources for my literature review consisted of books, journals, and websites” with $H=9.651$ (4, $N=237$), $p=.047$. The pairwise comparison did not show specific differences among these classifications. There was also a significant difference in this statement “I choose/chose to conduct research because complex problems in a global society require valid and reliable solutions” with $H=15.798$ (4, $N=43$), $p=.003$. Freshmen were less likely to choose to conduct research compared to others, with $P=.041$. There was a significant difference in this statement “When I conducted research, it was required for a class or project” with $H=11.365$ (4, $N=43$), $p=.023$. Sophomores were more likely to report that they conduct research due to a class or project, with $p=.048$. There was also a significant difference in this statement “I had an opportunity to present my research to a class or at a campus contest” with $H=13.211$ (4, $N=42$), $p=.010$. Seniors were more likely to present research to a class or at a campus contest compared to freshmen with $p=.038$.

Table 1

Responses to “The name of the city and state where I grew up is __, and I would categorize this city as ____.”

Geographic Location	Frequency	Percent
Urban	56	23.6
Suburban	90	38.0
Rural	72	30.4
Other	13	5.5
Missing	6	2.5
Total	237	100.0

Table 2

Responses to “My classification is ____.”

Classification	Frequency	Percent
Freshman	36	15.2
Sophomore	85	35.9
Junior	91	38.4
Senior	22	9.3
Other	3	1.3
Total	237	100.0

Table 3

Responses to “What is your major?”

Majors	Frequency	Percent
Education Related	161	67.9
Business Related	15	6.3
Fine Arts Related	2	.8
Liberal and Applied Arts Related	18	7.6
Science and Mathematics Related	22	9.3
Forestry and Agricultural Related	8	3.4
Other	11	4.6
Total	237	100.0

Table 4

Responses to “My GPA is ____.”

GPA Range	Frequency	Percent
3.5-4.0	78	32.9
3.0-3.4	83	35.0
2.5-2.9	55	23.2
2.0-2.4	15	6.3
Missing	6	2.5
Total	237	100.0

Table 5*The Kruskal-Wallis Test Results*

	Strongly Agree	Agree	Disagree	Strongly Disagree	Neither Agree nor Disagree	Not Sure	Total
I conducted research while attending high school.	39	123	32	12	19	12	237
I have conducted research in college.	82	112	21	1	11	10	237
I choose/chose to conduct research because complex problems in a global society require valid and reliable solutions.	34	96	41	6	32	27	236
Sources for my literature review consisted of books, journals, and websites.	105	115	2	1	7	7	237
Conducting research provides an avenue for solving educational, social, economic, political, medical, and other problems.	92	125	1	0	12	7	237
Initial stages of empirical research most likely involves the establishment of questions and design.	59	126	3	0	16	33	237
When conducting true experiments, a null hypothesis will likely be formulated.	42	114	8	1	21	51	237
The null hypothesis relates to commonly accepted theory or ideas in which the investigator attempts to disprove.	25	111	6	1	27	67	237
Prior to launching a research study, an investigator should gain approval from the organization's institutional review board.	59	111	12	0	25	24	231
When I conducted research, it was required for a class or project.	121	90	7	1	13	5	237
When I conducted research, I just had some questions I wanted to answer.	50	103	49	5	24	6	237
I had an opportunity to present my research to a class or at a campus contest.	40	96	60	10	22	8	236
I had an opportunity to present my research at a state or national conference.	11	17	117	70	20	2	237
I had/have a faculty mentor to help me with the research process.	25	70	80	23	27	11	236

Table 6

Excerpts from Qualitative Data

	Theme 1 Interest	Theme 2 Embed in Coursework/Mentors
Supporting Categories	Field-Related research; Impact society	Time and Instruction
Supporting Responses	If related to my field of study such as ancient history, health care, forestry, and early childhood education; Wanted to make a difference in society;	Yes, there is a lot of information out there” and “Yes, because finding legitimate information; Yes, if tied to grades or a class project; Difficult to find credible sources

Note. A minimum of three participants recorded each category and response.

Discussion of Qualitative Measures

Participants’ responses from the open-ended questions provided answers to Question 2: How might the university strengthen support of undergraduate research to provide access to all students? Following separate and combined analyses of the data sources, two themes emerged.

Theme 1: Embed research into the curriculum. When asked in Question 20, “*What is your motivation for conducting research, if any,*” participants’ comments consistently reported that they would be interested if it was tied to their grades, class projects, and if the teacher required research. It appears that assignments that were completed to fulfill course requirements were not tied to research. Question 22 was, “*Is conducting research challenging? Why or why not,*” and a majority of participants responded that engaging in research was time-consuming. Trent’s (2010) conclusions involved offering research opportunities as a separate project from course work due to assignments and time constraints. The implied message is that assignments were unrelated to research and, after participants completed assignments, they could not find the time to engage in research. These types of comments created support for embedding undergraduate research so that this high-impact practice would mesh with the curriculum. Therefore, students could engage with course-related research and received grades simultaneously just as Manak and Young (2014) reported successful results of an introduction to elementary education course that involved research and Trent (2010) integrated research in a student teaching project.

Theme 2: Faculty mentors are needed. Question 21 “*If you had a faculty mentor, what kind of research would interest you*” and students provided responses that related to their fields of study such as ancient history, health care, forestry, and early childhood education. Additionally, half of the participants that were surveyed indicated that they wanted to make a difference in society. Question 22, “*Is conducting research challenging? Why or why not*” invited students to provide their perceptions on the difficulty of research. An illustration of students’ responses included, “Yes, there is a lot of information out there” and “Yes, because finding legitimate information is difficult.” Such comments related to research methodology and a need for mentor intervention. Experts have concluded that no matter the model implemented; undergraduate students require faculty mentors. Multhaup et al. (2010) described three different undergraduate research models, and each model includes student-faculty collaboration.

A significant number of participants in the present study indicated that research related to their field of study would interest them, and several participants answered “yes” to the question about the difficulty of conducting research. These types of responses signified that students may need faculty guidance and mentoring when conducting research. Faculty can provide pertinent information such as how to differentiate between credible primary and secondary sources, which websites are credible, and how to identify peer-reviewed sources. Further, participants appear to invite research opportunities if embedded in the course assignments.

Conclusion and Implications

Refinement of teacher skills, an appreciation for research, and an increased understanding of the relationship between theory and practice (Lassonde 2008; Manak & Young, 2014) denote benefits that have been documented when preservice teachers engage in research. Our purpose was to sample undergraduate students' knowledge and perceptions of research and compare education majors to other disciplines to understand how to increase support and provide research access to all undergraduate students, specifically preservice teachers. Consistent with the undergraduate research literature, we learned that only a few of our preservice teachers are provided opportunities to strengthen their inquiry and research skills. Most of the participants in the study (67%) were education majors, and it was enlightening to discover that preservice teachers were interested in strengthening their inquiry and research skills. Equally enlightening was that preservice teachers expressed a need for support from faculty.

Overall, findings from the current study contribute to the body of research that preservice teachers receive limited exposure to research compared to other disciplines (Manak

& Young, 2014). Nonetheless, the feedback from undergraduate students in this study holds vital implications for practice and further research. Multhaup et al. (2010) described traditional, consultant, and joint-creation models to bolster undergraduate research. Culp and Urtel (2013) documented participation in research on physical education majors' transcripts. Through an introduction to education required course at Bridgewater State University, preservice teachers complete a 40-hour classroom observation requirement that leads to a research project.

Given the collective findings from the current study and accompanying literature, we recommend that teacher education faculty survey preservice teachers regarding research knowledge. Analyze preservice teachers' ideas and consider applying the traditional, consultant, or joint-creation model to intensify preservice teachers' inquiry and research skills. Further, we recommend an investigation of course-embedded research and sharing of undergraduate research initiatives at local, state, and national forums. This type of scholarship could enrich professional renewal for both faculty, preservice teachers, and the teacher preparation community at large.

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