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*Editorial Board*

*Joan Berry   Sandy Labby   Michelle Giles  
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Texas Association  
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*The Journal of the Texas Association of Texas Educators*

# THE TEXAS FORUM OF TEACHER EDUCATION

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# THE TEXAS FORUM OF TEACHER EDUCATION

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THE TEXAS FORUM OF TEACHER EDUCATION

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The views expressed in the articles are not necessarily those of the Texas Association of Teacher Educators.

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## *Editor's Introduction*

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The *Texas Forum for Teacher Education* should be a reflection of both the strides we have made as educators and also the challenges still facing us. That is certainly true of the 2017 issue, because a recurring theme among the articles in this volume is the need for all teachers to be culturally and academically responsive to diversity. Several contributors shared specific opportunities for scaffolding or enhancing math and literacy instruction. Others provided in-depth explorations of ESL standards, suggested approaches for involving parents in their children's education, and examined different techniques for developing cultural and linguistic awareness among preservice educators.

While providing a strong foundation in the core areas is always a priority, this issue focuses on the need for educators to close gaps between students who are struggling and those who are not, to be innovative in our approaches, and to ensure that every child has a teacher who is ethical, caring, empowered, and well-prepared for today's diverse classroom.

I was honored to work with a wonderful editorial team, including Associate Editor Dr. Sandy Labby (Texas A&M University -Texarkana), Assistant Editor Dr. Michelle Giles (University of Houston-Clear Lake), Past Editor Dr. Jana Willis (University of Houston-Clear Lake) and Team Member Dr. Sarah McMahan (Texas Woman's University). As always, the issue would not be possible without the outstanding work of our Copy Editor Dr. Elda Martinez (University of the Incarnate Word). Thanks to each of these for the time and effort they have provided in the preparation of this issue.

Information about submissions for the *2018 Forum* is included at the end of this issue. The deadline for manuscripts is June 15, 2018. I encourage you to continue your research and share your ideas. If you have questions about this edition, please e-mail me at [jberry@umhb.edu](mailto:jberry@umhb.edu).

Respectfully,

*Dr. Joan Berry*

2017 Managing Editor

Texas Forum of Teacher Education

# ENGAGING PRESERVICE TEACHERS IN A COLLABORATIVE EFFORT TO SUPPORT DIVERSE LEARNERS IN NEED OF INTERVENTION

**Phyllis M. Robertson**

Texas A&M University-Corpus Christi

**Maria Carmen Tejada-Delgado**

Texas A&M University-Corpus Christi

## Abstract

*Today's teachers serve an increasingly diverse student population and must be equipped to participate in Response to Intervention (RTI) processes in order to improve the performance of learners who experience academic challenges. This manuscript describes the efforts of two faculty members from a teacher education program, one a special educator and the other a bilingual educator, who collaboratively implemented a project designed to expose teacher candidates to the realities of professional collaboration within an RTI framework. Teacher candidates selected, in consultation with their clinical teacher, a target student who could benefit from supplemental instruction in reading. They then worked with their peers in the design, implementation and evaluation of those interventions. The authors share the project description along with data gathered from teacher candidates to inform our understanding of the strengths and challenges of the project.*

Keywords: teacher preparation, response to intervention, collaboration, field experiences

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Today's teachers serve an increasingly diverse student population and must be equipped to participate in Response-to-Intervention (RTI) as recommended in the Individuals with Disabilities Education Improvement Act (2004). RTI was designed "to improve the academic performance of struggling students with and without disabilities and to provide practitioners with a more valid means of disability identification" (Fuchs, Fuchs & Vaughn, 2014, p. 13). As RTI emphasizes effective instruction and prevention of academic difficulties, the process has also been identified as having the potential to increase student achievement and decrease inappropriate referrals of diverse students for special education services (Hoover, Klingner, Baca & Patton, 2008; Ortiz et al., 2011).

RTI employs a multi-level system of supports in which screening and progress monitoring data is used to make decisions regarding the need for and impact of supplementary interventions for students who do not make expected progress (McInerney & Elledge, 2013; Vaughn & Bos, 2015). Effective implementation of RTI is dependent upon the successful preparation of teachers who will be responsible for student assessment, intervention, progress monitoring and decision-making processes (Barrio & Combes, 2015; Hurlbut & Tunks, 2016). To date, there has been limited emphasis on the preparation of teacher candidates to implement RTI (Danielson, Doolittle & Bradley, 2007; Harvey, Yssel & Jones, 2015) and little guidance is available to teacher educators charged with ensuring that their graduates are prepared to effectively engage in RTI activities. Hawkins, Kroeger, Musti-Rao, Barnett, and Ward (2008) have suggested that preparation efforts should include a focus on teaming and problem-solving, data-based decision making, and the use of culturally appropriate practice. Given the interdisciplinary nature of RTI practices in schools, collaboration and consultation skills are often cited as critical to successful implementation (Barrio & Combes, 2015; Hawkins et al., 2008). Yet, teacher candidates are typically

prepared in discipline-specific silos with general education, special education, and bilingual education teacher candidates having limited interaction during their preservice experience. In addition to ensuring opportunities for interdisciplinary collaboration (Robertson, García, & Rodriguez, 2016), field experiences have been identified as necessary to the acquisition of skills associated with RTI (Harvey et al., 2015; Hawkins et al., 2008).

The Collaborative Problem-Solving Project (CPSP) was designed to enhance the preparation of general education, bilingual education and special education preservice teachers. Following a process similar to that described by Robertson et al. (2016), these teacher candidates were charged with developing, implementing, monitoring and evaluating interventions for elementary-age students who were experiencing academic difficulties in reading. Two faculty members from a teacher education program, one a special educator and the other a bilingual educator, collaboratively implemented the project with the intention of providing these teacher candidates with an experience that would mirror what would be expected of them in future practice. We share this project description in an attempt to illustrate one preparation program's effort to design a process for exposing teacher candidates to the realities of professional collaboration within an RTI framework.

### Context

The CPSP was implemented at Texas A&M University-Corpus Christi during a field-based semester in which teacher candidates enroll in Planning, Teaching, Assessment and Technology, a course in which each teacher candidate spends two full days a week with a clinical teacher on a public-school campus. A university site professor serves as the course instructor. In collaboration with the campus administrator, campus-based clinical teachers are identified. Each member of the school-university partnership has a set of roles and responsibilities which support student success and achievement of the partnership's goals and objectives.

Clinical teachers and site professors work with and mentor the teacher candidates in lesson plan development, assessment, technology integration and instruction. Teacher candidates and site professors keep the same hours as clinical teachers. The site professor maintains a classroom at the partner school to ensure opportunities are provided to collaborate with campus personnel and to observe teacher candidates, as well as meeting with them throughout the semester in a seminar-type setting.

In addition to being an active participant in the field-based classroom, teacher candidates are required to teach six formally observed lessons. Using a university developed instrument, the clinical teacher evaluates two lessons and the university site professor evaluates two lessons. Within 48 hours of the lesson, the teacher candidate conferences with both the site professor and clinical teacher, to review the evaluation results, identify strengths and weaknesses, and with the use of goal specific feedback establish plans to improve the subsequent lesson in both content and pedagogy (Tejeda-Delgado & Johnson, 2016).

Teacher Candidates must also complete a portfolio which includes pre-selected artifacts that respond to the Pedagogy and Professional Responsibility Competencies established for all teachers in the Texas Educator Standards. For example, "the teacher understands student diversity and knows how to plan experiences and design assessments that are responsive to differences among students and that promote all students learning" (Texas Education Agency, 2017, p.7).

These teacher candidates were completing their field-basing at an urban elementary school in the Texas Coastal Bend. The school district served approximately 39,000 students in 2015 (Texas Education Agency, 2015). The campus population included students in kindergarten through fifth grade with 69.5 % being Hispanic, 25.5 % being White, 2.8 % being African American, and 1.2 % identifying as representing two or more races. Forty-eight percent of students were classified as economically disadvantaged, 3.4 % were identified as English language learners, and 12.8 % received special education services; the school reported a 26.9 % mobility rate for the 2014-2015 school year (Texas Education Agency, 2016).

### Participating Faculty and Students

Dr. Carmen Tejeda-Delgado (author) served as the university site professor and instructor of record for Planning, Teaching, Assessment and Technology. Dr. Phyllis Robertson (author) had no university designated responsibilities for the course, although she assisted in the planning and conduct of all project activities.

The participating teacher candidates included 17 female undergraduates, mostly in their twenties. Five identified their ethnicity as Hispanic with the remainder identifying as White. Twelve of the teacher candidates were pursuing early childhood-grade six (EC-6) elementary certification with a reading concentration, four were pursuing bilingual EC-6 certification, and one was seeking an all-level (EC-age 21) generic special education certificate.

### Project Activities

Teacher candidates were introduced to the CPSP approximately four weeks after beginning their field placements. Faculty determined that the students needed several weeks to become familiar with the elementary campus, their clinical teachers and the students with whom they were working prior to undertaking the CPSP. Each teacher candidate was required to design and implement a six-week reading intervention for one student in their field-based classroom. Activities were structured to support teacher candidates in:

- systematically gathering relevant student information for use in problem solving and instructional planning;
- establishing a baseline level of performance and developing a short-term objective;
- developing, implementing and monitoring academic interventions in response to the student's individual needs; and
- using communication strategies effectively during the collaborative process.

Teacher candidates attended seminars specifically focused on CPSP implementation. Due to the demanding nature of their schedules, faculty made a concerted effort to ensure the limited meeting time available was used efficiently and effectively.

### Seminar One: Introduction

Due to time constraints, seminar one was divided into two parts, each lasting approximately two hours.

**Part One, CPSP Overview.** During the initial seminar part one, teacher candidates were provided with an overview of the CPSP project along with an explanation of the procedures that would be utilized. Additionally, faculty reviewed the critical components of RTI in providing a multi-tiered system of supports and discussed the importance of collaborative problem solving in the RTI process. In preparation for part two, teacher candidates were advised to work with their clinical teachers to identify a target student who was in need of additional reading support, prepare a brief description of the specific area(s) of concern, and gather data to assist in the development of an intervention plan (e.g., a description of strengths/needs, sociocultural information about the student and family, results of formal and informal assessment, language assessment information if the student was an English learner, etc.).

**Part Two, Preparation for Intervention Planning.** One week later, teacher candidates met with faculty a second time. The focus of the seminar was on preparing teacher candidates to establish a baseline level of performance and write a short-term objective. Baseline was defined as the target student's level of performance prior to intervention and was used to establish the short-term objective. Case studies were utilized to support students in identifying how assessment information was used to establish a baseline and teacher candidates worked in groups to write short-term objectives that included a condition, a behavior, and a criterion (Vaughn & Bos, 2015). At this seminar, teacher candidates were also introduced to the Intervention Planning Form that would be used to guide their work with the target student (see Figure 1).

Target Student Pseudonym: \_\_\_\_\_

Date: \_\_\_\_\_

Grade: \_\_\_\_\_

Age: \_\_\_\_\_

Tutor: \_\_\_\_\_

## 1. Concern

What is the student expected to do that he/she is not doing now?

When and in what circumstances is the student's learning compromised?

## 2. Baseline Level of Performance (must include name of measure and score; e.g. Level 12 on the DRA)

## 3. Measurable Intervention Goal- Must include a condition, a behavior and a criterion; establishes level of performance required for team to determine that intervention has been successful (e.g. Following a six-week intervention using the Partner Reading Strategy, the student will read a DRA Level 12 passage with 42 words correct per minute).

## 4. Plan for Instruction

Methods/strategies for intervention:

Methods to be used:

Language(s) of instruction:

Considerations for making the intervention culturally responsive:

## 5. Motivational and Behavioral Features of Instruction

Student interests:

How will background knowledge be activated?

Behavior supports if needed):

## 6. Progress Monitoring (plan to conduct some form assessment at least once per week)

What measure(s) will you use?

How often will the measure used to establish the goal be administered (see item 2)?

What other data will you collect?

*Figure 1.* Intervention Planning Form. Adapted from: Hoover, 2009; Vaughn & Roberts, 2008; Klingner, Baca & Roberts, 2008; Telzrow, 2000.

**Seminar Two: Intervention Planning in Problem-Solving Teams**

One week later, teacher candidates gathered in teams of three to five (loosely organized by grade level) to conduct problem-solving meetings on each of their identified target students. The purpose of these meetings was to review available data, identify and define the source of difficulty, and generate possible interventions. Next, team members were charged with evaluating the potential interventions suggested and selecting the best choice(s). In selecting interventions, teacher candidates were advised to consider whether the proposed intervention: (a) addressed the primary area of concern; (b) was responsive to the student's individual learning characteristics including sociocultural and linguistic background; and (c) could reasonably be expected to produce the desired outcomes. Lastly, they were asked to develop a plan for monitoring the student's progress during the intervention period.

Faculty acted as facilitators during team meetings and were available to answer questions and clarify expectations. Teacher candidates were reminded to complete and submit intervention plans for faculty review within the next seven days. During the intervening week, faculty specifically designated two, four-hour blocks of time during which they were available to assist students in completing their plans on a drop-in basis. Faculty later met and reviewed the plans submitted by each teacher candidate. Feedback was provided and revisions were made prior to plan implementation.

**Seminar Three: Mid-Point Review**

Three weeks after submitting intervention plans, teacher candidates and faculty met to discuss progress to-date. Initially, faculty led a whole group discussion focused on how implementation was proceeding, asking teacher candidates to share success stories and identify areas of challenge. Then teacher candidates met once again in their problem-solving teams. Each teacher candidate was given time to discuss her impressions of the target student, progress toward meeting the short-term objective, progress monitoring results, etc. Then the group brainstormed ways to strengthen each intervention as appropriate. Subsequently, teacher candidates were required to complete and submit a Mid-Point Review Form (see Figure 2). This provided a second opportunity for participating faculty to provide individual feedback to each teacher candidate.

**Seminar Four: The Final Meeting**

Following six-weeks of CPSP implementation, teacher candidates met one last time in problem-solving teams to debrief the experience. Each teacher candidate was asked to:

- Discuss the impact of the project on your target student.
- What went well?
- What was most challenging?
- Discuss the impact of the project on your developing understanding of teaching.
- What was helpful?
- What else did you feel you needed?
- Discuss how you felt about collaborating with your peers throughout the semester.

Target Student Pseudonym: _____	Date: _____
Grade: _____	Age: _____
	Tutor: _____
<ol style="list-style-type: none"> <li>1. How did you establish your baseline?</li>   <li>2. What was your student's goal(s)?</li>   <li>3. How have you been teaching toward this goal(s)?</li>   <li>4. How is the student responding to the intervention?           <ul style="list-style-type: none"> <li>-What seems to be working well?</li>   <li>-What are continuing concerns?</li> </ul> </li>   <li>5. How might the intervention be modified or improved to meet the student's needs?</li> </ol>	
<p><i>Figure 2. Mid-Point Review Form</i></p>	

### **Reflections and Lessons Learned**

Throughout implementation of the CPSP, participating faculty members met frequently to reflect on the experience and to consider responses of the teacher candidates. Although not intended as a research report, we did utilize several sources of data gathered from teacher candidates to inform our understanding of the strengths and challenges of the project. We also recorded field notes regarding our interactions during one-on-one meetings with teacher candidates who dropped in for additional support (Note: The project had access to this information because IRB approval had been obtained for program evaluation purposes).

We maintained copies of the intervention planning and mid-point review forms submitted by each teacher candidate along with the feedback we provided. Lastly, we also sought to capture the content of teacher candidate problem-solving team meetings. Each meeting was audio-taped and faculty engaged in open-coding in order to determine ways in which teacher candidates were engaging with one another and the activities provided.

### **Intervention Planning Forms/Mid-Point Reviews**

Our initial review of the intervention planning forms indicated that many teacher candidates experienced difficulties with establishing baseline and writing short-term objectives, skills critical to RTI implementation (Barrio & Combes, 2015; Hurlbut & Tunks, 2016). This was further validated by field notes taken during one-on-one meetings with faculty. Identifying appropriate methods for monitoring weekly progress was also challenging for some teacher candidates who indicated they had limited access to such tools in the field-based classrooms. Several reported experiencing difficulties with selecting strategic interventions from a wide range of choices or identifying strategies to address a specific reading competency (e.g., comprehension or fluency). One teacher candidate scheduled a time to discuss her intervention plan with

participating faculty as she was concerned that her student seemed to experience equal levels of difficulty in both English and Spanish and she was unsure how to address those concerns.

The Mid-Point Review provided an opportunity for teacher candidates to examine the progress of their target student and discuss intervention implementation with their peers. The form they submitted revealed challenges with locating appropriate resources, particularly at the instructional reading levels of their students. Behavioral challenges and strategies for responding to them were mentioned, most commonly related to a lack of target student focus. Several described a need to modify the short-term-objective, usually by lowering the criterion established for success. This provided a valuable opportunity for faculty to discuss with teacher candidates the importance of modifying instruction rather than decreasing expectations.

### **Team Meeting Transcripts**

Our review of the transcripts provided insight into teacher candidates perceptions of the CPSP process and how it influenced their professional development. While there were certainly times when teacher candidates were off topic or had difficulty focusing on the task at hand, their comments indicated that the project had a positive influence on their awareness of linguistic and cultural differences, their understanding of the importance of accurate assessment, the nature of reading intervention, and the value of collaboration (Hawkins, et al., 2008; Robertson et al., 2016). Many also reported that it was helpful in their understanding and implementation of RTI.

Linguistic and cultural differences were a frequent topic of discussion with some teacher candidates recognizing the influence of these differences on student development. One teacher candidate acknowledged the importance of native language acquisition when describing a student in a bilingual classroom who had limited Spanish skills, “a lot of teachers think that good, but that’s not . . . it’s hard for her.” Others noted the challenge associated with learning in a second language when they made comments such as “my student is the only bilingual student in the class so all she tries to speak is English. There’s not only a language barrier, there’s kind of a culture barrier. She feels uncomfortable.” One teacher candidate focused more specifically on a lack of effective communication with parents who spoke a language other than English, “She might not even have that support at home, not because they don’t want to give it to her, but because they don’t understand...”. Another described the need for effective communication with families. She reported being very concerned after attending a multidisciplinary team meeting for a student with an individualized education program, “the translator was the principal’s secretary or something. She wasn’t that good...maybe related 20 percent of what was said to her.”

Teacher candidates also posed questions to their peers regarding the nature of second language acquisition. For example, “Mine’s in fourth grade and she’s reading at a second-grade level. She’s an ESL student but I’m not really sure, how long does that affect them?” Others requested specific strategies for making English more comprehensible. In summary, one teacher candidate shared, “I didn’t realize I would be dealing with so much bilingual stuff.”

Teacher candidates were encouraged to ask their clinical teachers for current assessment data or to assess the target student themselves. A number of them mentioned the benefits of accurate assessment data and the challenges associated with obtaining it. Some were very accurate in describing their student’s baseline level of performance as determined by assessment processes. For example, “His current reading level is 1.9,” and, “One thing I found out this morning is that his vocabulary is very low...he scored better than or equal to 6%.” Others reported difficulty in obtaining accurate data from their clinical teachers, “It’s hard to talk about something when you don’t really know. I tried looking for assessments, but I just could not find any,” and “I think it’s just personal opinion [the clinical teacher’s], I don’t have any written data on him.” One teacher candidate critically reflected on the interpretation of assessment data she was provided, “I’d like to look at what he was assessed on. I’d also like to see the baseline from everybody else in the class too. Is everybody low? Maybe that just wasn’t a good assessment.”

During team meetings, teacher candidates discussed interventions associated with all five pillars of reading instruction—phonemic awareness, phonics, fluency, vocabulary and comprehension (Vaughn & Bos, 2015). They also

identified strategies for increasing skills in these areas with a particular emphasis on building vocabulary and comprehension skills and looked to their teammates for ideas, “I want more strategies that she can apply...because she is really good at reading. She does wonderful. It’s just her comprehension, because some of the vocabulary, she doesn’t get.” Another teacher candidate asked, “How do you help them comprehend?” to which a peer responded, “I would have them read the story, and as they’re reading, underline important things, that you would think are important. If there’s questions, read the story, look at the questions, read the story again.”

Transcripts of their final team meetings revealed that teacher candidates valued the collaborative problem-solving process that was a critical component of the CPSP (Hawkins, et al., 2008; Robertson et al., 2016). In reflecting on this component, a teacher candidate shared,

It was really helpful to collaborate because it gave me motivation to push through the struggles and stuff and to know that you’re not alone in your struggles. I think if anything that was the most helpful part...getting to talk to peers and getting advice from somebody...

Teacher candidates also recognized the need to collaborate in their future practice, “we’re going to have to do that throughout our entire careers, and I actually used that as one of the items in my portfolio...collaborating with colleagues and stuff. It was meaningful, it had a purpose.”

Some also mentioned the importance of interdisciplinary collaboration. In the following exchange, one teacher candidate disclosed, “For me, I didn’t really understand how to teach someone who is bilingual,” to which her peer replied, “Yeah, I felt like you had a lot of ideas that helped me as well. I think it was really awesome that we got to know each other and to know our students, and you helped me and I helped you...I feel like when you’re a teacher, you should also be working with other teachers, because they have ideas that you don’t.”

In addition, many teacher candidates recognized that the CPSP contributed to their understanding of RTI and the provision of interventions to students in need of academic support (Danielson et al, 2007). “I didn’t even know what ...I mean I knew what RTI was...but...it was actually put a little bit into perspective rather than reading it out of a textbook.” Another shared, “I think I understand RTI a lot better than I did before, after this project.” Yet another mentioned the influence of the project on their understanding of reading intervention, “I feel like I have more knowledge on what to do when a student is not reading, like working with a student one-on-one.” Teacher candidates also reflected on the challenges of RTI implementation,

I think the most challenging part was just creating the intervention, because we’ve learned about them, we’ve just never had to create, so I think for me, I could gauge kind of what he needed to work on, but figuring out how to help him, it’s something that takes practice...I think that ended up being the best thing about this, is actually having experience creating a plan like that and knowing everything that we needed for that plan.

Several teacher candidates addressed the importance of documenting student progress, “How much work you are going to have to put in to make sure that the curriculum that they’re getting is good enough...you are going to have to document the things that they are doing.” One teacher candidate reported that the CPSP did not help her in better understanding “an area of teaching,” but did feel that it was valuable “getting time to kind of see how the assessments work, and whether or not it was beneficial...”

Most encouraging, was the report of participating teacher candidates regarding the impact of their efforts on the target student. Despite the limited time available for implementation, several teacher candidates commented on the progress made by their target students. “He started at 23 words per minute. I wanted to get him to 40, but he got to 36. That’s pretty good.” Two students discussed accomplishing more than they had expected in a short period of time. One stated, “I think what surprised me is how much she absorbed in the short time.” Another responded, “Like you said, a short period of time...and they’re actually applying it. I thought it was good. He doesn’t get as distracted...as before.” This same group also discussed a developing recognition of previously held assumptions about struggling readers, “I think what surprised me too is that struggling readers want to be on the same level as everyone even if they can’t read at all...I guess they’re not like, ‘oh, we don’t care.’”

Final meeting transcriptions also focused on logistical concerns and personal challenges. Predictably, time was the most common barrier to implementation identified (Robertson et al., 2016). As one teacher candidate said, “trying to find time to do [the CPSP],” was a major challenge. A number also mentioned needing more time to spend with the target student. For example, “When you are tutoring a struggling reader, it seems like you need more than 30 minutes...two days a week.” Several teacher candidates suggested starting the project earlier in the semester and one felt that the project should last for an entire academic year.

Teacher candidates also reported concerns related to finding time for individual tutoring. Several clinical teachers had wanted target students to receive intervention support during the physical education (PE) period, but teacher candidates were appropriately reluctant to remove students from PE. Others shared that clinical teachers encouraged them to spend their time assisting students with finishing in-class or homework assignments rather than focusing on short-term objectives. Finally, a few teacher candidates reported wanting more direct instruction to be provided by participating faculty.

### **Strengths of the CPSP**

As faculty, we felt that the CPSP was effective in simulating the realities of school-based practice. In particular, it provided teacher candidates with opportunities to more carefully consider the link between assessment and instruction within an RTI framework (Danielson et al, 2007; Hawkins et al., 2008). We feel confident the CPSP exposed students to real-world intervention techniques they could actually employ and understand.

An additional benefit was that the CPSP required teacher candidates to collaboratively consider how instruction should be modified for individual learners, including ELs. While many of the participants commented on the value of the experience, those not enrolled in bilingual education, seemed to benefit considerably from collaborating with peers who were preparing to be bilingual educators. It is hoped that this recognition of the importance of interdisciplinary collaboration and professional dialogue carries forward into their professional practice (Hoover et al., 2008; Hoover, 2009). The mid-point and final seminars seemed to help students gain a deeper understanding of what it means to reflect on teaching practices, including interventions, and their impact on student success. Teacher candidates appeared to gain a deeper understanding of the nuances associated with specific interventions and their capacity to influence student learning.

### **Challenges of Implementation**

The timeline for CPSP implementation was short, and this presented a challenge for both teacher candidates and participating faculty. While we feel the project was successful in exposing teacher candidates to the RTI framework and collaborative problem-solving, additional instructional time would have enabled faculty to more thoroughly prepare the teacher candidates for the project and certainly would have been beneficial to the teacher candidates in providing interventions and evaluating their effectiveness for the target students.

As would be the case in many teacher education programs, there were not equal numbers of general educators, bilingual educators, and special educators enrolled in the field-based course. Thus, some teams were more interdisciplinary than others. While bilingual education students participated in most teams, only one special education teacher candidate participated.

Given that the CPSP was not a requirement of all sections of the field-based course, some teacher candidates felt that the assignment represented just one more thing to do during an already challenging semester. Additionally, some mentioned that this “special assignment” was not part of the original learning outcomes specified for the course and may not have taken it as seriously as others who perceived it as an integral course component.

Evidently, some general educators did not feel that the focus on RTI was critical for them. According to the special education student, her peers in general education thought the CPSP “didn’t apply to them” and told her, “if it had been important, someone would have mentioned it before now.” This clearly sheds light on the importance of early and repeated exposure to RTI (Hurlbut & Tunks, 2016).

### Conclusions

We identified a significant value in our own interdisciplinary collaboration and would recommend it to our peers. The collaboration enabled each individual's unique expertise to co-exist in the same teaching/learning environment and the sharing of responsibilities resulted in a comprehensive learning experience for all involved (Robertson et al., 2016). It appeared that some students "clicked" with or gravitated more to one professor or the other depending on the situation, problem, issue or question. This seemed to foster a greater social integration among student sub-groups. This was not a negative result, but rather a positive, as teacher candidates now had two instructors they could turn to for support. They appeared to bounce from one professor to another depending on their area of need and the expertise of each individual, a clear benefit of a co-teaching model.

In reflecting on our experience, we realized that the CPSP provided an authentic assessment of our teacher candidates ability to apply concepts learned in coursework in field-based settings. While they had successfully completed numerous classes in a teacher preparation program, we learned not to assume that they could apply some of the rudimentary aspects of teaching to which they had been exposed (e.g., understanding the role and purpose of assessment and using the results to plan effective instruction and intervention). This project provided us with significant insight regarding the level of support TCs need to translate theory into classroom-based practice.

In summary, we would strongly recommend that other teacher educators consider the value of interdisciplinary projects in field-based settings, particularly when seeking to enhance teacher candidates understanding of collaborative processes within an RTI framework. That said, we recognize that universities, like public schools, often have difficulty supporting faculty engagement in these collaborations. We would also concur with others who have noted that there are significant challenges to preservice RTI preparation (Danielson, et al., 2007; Hawkins et al., 2008; Hurlbut & Tunks, 2016). Ensuring that *all* educators are prepared and recognize their RTI implementation responsibilities "requires in-depth training across education disciplines to increase the capacities of schools to bring science into classrooms" (Hawkins et al., 2008, 761.)

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# PREPARING FOR DIVERSITY: PROGRAM EVALUATION OF AN ACCREDITED TEACHER CERTIFICATION PROGRAM IN TEXAS

**Jessica J. Keen, MAT**

Doctoral Student, Sam Houston State University

**Rebecca M. Bustamante, Ph.D.**

Sam Houston State University

## Abstract

*As student populations continue to diversify, the need to prepare teachers to work effectively with culturally and linguistically diverse students becomes increasingly crucial. In this study, degree plans and course descriptions for one university-based teacher preparation program were analyzed to identify intentional strategies designed to prepare elementary, middle, and high school teacher candidates to work in culturally and linguistically diverse environments. Results showed that the elementary certification program required more courses aimed at culturally and linguistically responsive teacher preparation than the secondary certification program, especially in working with English Language Learners. Requirements for the number of field experiences teacher candidates were required to complete surfaced as the most prevalent at all teacher preparation program levels, including elementary, middle, and high school. For this reason, particular attention to placing teacher candidates in culturally and linguistically diverse classroom and school environments is essential.*

Keywords: cultural and linguistic diversity, culturally relevant, preservice teachers

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Today's educational leaders and teachers are faced with a multitude of complex scenarios, including curriculum standards and standardized testing, a higher demand for technology usage, and an increasingly more diverse student population (Bryant, Moss, & Zijdemans Boudreau, 2015; Guyton & Wesche, 2005; Nadelson et al., 2012; Schellen & King, 2014). In 2016, the Texas Education Agency reported the number of Hispanic and Black students enrolled in Texas public schools was continuing to increase, while White student enrollment was declining. These demographic complexities, mixed with high turnover rates for new teachers, urge those who lead educator preparation programs to seek ways to become more efficient and effective in meeting preparing teachers to thrive in culturally diverse environments. Moreover, the U.S. teaching force predominantly comprises White, middle-class women who are likely to have culturally and linguistically diverse (CLD) students in their classrooms. Therefore, teacher candidates (TCs) must adequately be prepared to work with all types of students. This preparation includes both coursework, which emphasizes cultural and linguistic knowledge and strategies, and field experiences, in which teacher candidates can apply what they learned as they interact with culturally and linguistically students. Teacher preparation programs must provide numerous opportunities for teacher candidates to focus on the aspects of teaching that address meeting the needs of culturally and linguistically students. The purpose of this study was to identify the intentional preparation of *teacher candidates* (TCs) to work with culturally and linguistically students by evaluating a large, university-based teacher preparation at a select institution in south central Texas.

Throughout this article, the terms *preservice teacher* (PST) and *teacher candidate* (TC) will be used to describe a teacher-in-training who is enrolled in a teacher preparation course, namely in a university-based program. Any studies that

refer to *alternative certification* (not housed in a university setting) will be explicitly stated and likely describes a program in which a PST has previously obtained a bachelor's degree and is completing state of Texas requirements for teacher certification.

### Literature Review

Ladson-Billings (2011) argued that teacher preparation programs are often dominated by older, White educators who are “too far removed from PreK-12 teaching to be much help when it comes to preparing novice teachers for diverse classrooms” (p. 14). Ladson-Billings also noted that the few professors who actually come from culturally diverse backgrounds often are “pigeon-holed” into teaching courses on multiculturalism or English Language Learners (ELLs). Teacher preparation programs often offer limited coursework that appropriately addresses the impact language or culture may have on students’ learning (Ladson-Billings, 2011). Researchers have suggested including coursework that specifically addresses teacher candidates’ knowledge about different cultures is essential to adequately preparing teacher candidates to work with students from a variety of cultural and linguistic backgrounds (Gay, 2002; Robinson & Clardy, 2011; Schellen & King, 2014).

According to Robinson and Clardy (2011), teacher candidates are not the only stakeholders who should reflect on their experiences with an understanding of people from different cultural and linguistic backgrounds. In their auto ethnographic study, Robinson and Clardy reflected upon their first-hand experiences with teacher educators, as well as their personal interactions with teacher candidates enrolled in their courses. They summarized the three dominant approaches typically taken in addressing diversity within teacher preparation programs. The first approach was the *segregated diversity course approach*. In this approach, culturally and linguistically is emphasized only in specific courses that explicitly address responding to diversity in schools. In teacher preparation programs that use this type of approach, meeting the needs of culturally and linguistically students is not addressed in other coursework outside of these specialized classes, so preservice teachers may not recognize how these ideas fit in with other aspects of their training. The second approach was *programmatically diversity integration approach* in which all courses address culturally and linguistically to some extent (Robinson & Clardy, 2011). In this case, the expectation is that all professors integrate culturally and linguistically instruction in every course in the program. The problem with this type of approach is that it may neglect to teach explicit knowledge about various cultures, which researchers have suggested is an integral part in adequately preparing culturally responsive teachers (Gay, 2002; Schellen & King, 2014). The researchers suggested, however, that the third and most effective approach combined the first two approaches. Ultimately, Robinson and Clardy concluded that, just like the teacher candidates they teach, teacher educators should incorporate many of the same strategies that K-12 teachers use to address the needs of culturally and linguistically students. To do so would require specific training for teacher educators, as well as a focused consideration by the teacher education program to integrate diversity-related coursework and maximize field experiences in which teacher candidates can interact with culturally and linguistically students.

Robinson and Clardy (2011) and Gay (2002) concur that coursework that directly addressing culturally and linguistically should be included in all teacher preparation programs. Gay described the need for teacher candidates to gain explicit knowledge about various cultures, because culture might directly influence a students’ engagement, learning style, motivation, and more (Gay, 2002). Furthermore, Gay recommended training teacher candidates to apply knowledge of different cultures to identify any potential gaps in the cultural responsiveness of curriculum and resources and then to fill these gaps using appropriate instructional strategies. Both Robinson and Clardy (2011) and Gay (2002) urged teachers to create communities of mutual respect between teachers and all students, where both students and teachers can learn from one another. An integral part of creating this safe environment includes effective communication between all members of the classroom community.

In a study designed to investigate preservice teacher’s perceived preparation for working with diverse students, Nadelson et al. (2012) utilized the Multicultural Efficacy Scale. This 35-item survey was designed to collect data on teachers’ experiences with and attitudes toward working with students from various backgrounds, as well as their opinions regarding their perceived ability to teach all students effectively. Of the 88 teachers surveyed, the majority were lower to

middle class White teachers, and approximately a quarter of the preservice teachers who participated spoke a second language in addition to English. Nadelson et al. (2012) concluded that being taught about multicultural education was not as highly regarded by PSTs as their interactions with different types of students. Experiences with other races, cultures, religions, and languages had a much stronger influence on the preservice teachers' reported confidence in working in diverse classrooms.

Schellen and King (2014) also explored several teacher preparation structures, including coursework and field experiences, aimed at preparing PSTs to work with diverse groups of students in Grade 4 through Grade 8. The authors examined 53 preservice teacher's portfolios that included written assessments of essential learnings from their coursework, sample lessons, classroom designs, reflections from student teaching experiences, and other similar artifacts that focused on multicultural education and ELLs, specifically. Schellen and King also collected data from syllabi and required readings of courses that pertained to diversity. All of the preservice teachers completed the same coursework, had multiple field experiences, and completed their student teaching in one of two districts, which varied drastically in demographics. The researchers noticed that although all of the PST's portfolios demonstrated some understanding of working with students from multiple backgrounds, the preservice teachers who completed their student teaching in the predominately-Hispanic district applied their learnings more consistently than their peers in the predominately-White district. Due to their coursework, all of the preservice teachers expressed the importance of acknowledging student differences, but the preservice teachers who student taught in the more inner-city district regularly used the strategies from this coursework more in their work with the students. Schellen and King suggested that preservice teachers benefitted most when exposed to multiple platforms to learn about and apply multicultural education strategies, including coursework and field experiences.

When Ronfeldt, Schwartz, and Jacob (2014) investigated the benefits of opportunities for PSTs to practice teaching, they discovered that teacher candidates who obtained an alternative certification typically have drastically fewer hours practicing in a classroom than their peers who received their certification through a college or university program. The information they collected through the Schools and Staffing Surveys, the Teacher Follow-Up Survey, and the Common Core of Data revealed that although both traditional and alternative routes require a comparable number of methods courses, "almost half of alternative route teachers completed zero practice teaching" (Ronfeldt et al., 2014, p. 15). Furthermore, the authors concluded that teachers who spent more time in field experiences reported higher feelings of preparedness and were more likely to remain in education longer. Methods courses were also positively correlated to teacher candidates' readiness, but the coursework was not as highly correlated as the time spent practicing with students and mentor teachers.

Supporting the conclusions of Ronfeldt et al. (2014), Wood and Turner (2015) also contributed to the research about the importance of mentor teachers and field experiences to the training of PSTs. In this particular study, a cohort of 11 teacher candidates and 25 mentors worked in pairs to interview individual elementary-aged students regarding their comprehension of a math problem and the steps they used to solve it. Following these interviews, the mentor teacher and PSTs reflected on their observations of the student, whereas the preservice teacher's university professor facilitated these conversations. The researchers identified several benefits of the collaborative efforts between the university professor and the mentor teacher. Specifically, Wood and Turner noticed that the mentor teacher added to the PST's learning by providing context of the classroom and the student's prior knowledge, as well as modeling continued professional learning. Meanwhile, the university professor was able to make connections between the discussed observations and the context of the methods courses that the teacher candidates had previously completed. The authors concluded that both the mentor teacher and the university professor made different contributions to the essential learning of the preservice teacher, and therefore, the teacher candidate likely benefitted from the combination of their field experiences and their coursework.

Focusing specifically on preservice teachers' interactions with diverse populations, Bennett (2012) designed a qualitative study to identify specific characteristics of these opportunities that were effective and ineffective in increasing teacher candidates understanding of cultural responsive teaching. The researcher collected data from eight White elementary preservice teachers who completed some of their field experience by tutoring at a community center that served students who were economically disadvantaged and who were predominately African American or Hispanic. These participants were concurrently enrolled in a writing course, in which the instructor required students to write their reflections, field notes, and

journal. Through these artifacts and interviews, Bennett identified a few effective characteristics of this experience, including one-to-one interactions between students and teachers as well as the reflective opportunities for preservice teachers to discuss their experiences and understandings with one another. The researcher labeled the lack of interaction with students by some of the participants as an ineffective component. Additionally, although the instructor of the writing course also subtly incorporated components of cultural responsiveness throughout the course, the majority of the participants failed to acknowledge this inclusion in their reflections, resulting in the researcher labeling the indirect instruction as ineffective.

In this study, researchers examined preparation program requirements and descriptions at one university-based program to determine how well program requirements reflected a focus on preparing teachers to work with culturally and linguistically diverse students at the elementary, middle, and high school levels. The purpose of the study was to describe the teacher preparation program design based on degree plans and course descriptions. An examination of program effectiveness represents the next research phase and was not the objective of this study.

The following research questions guided this program evaluation study: (a) What courses are elementary, middle and high school teacher candidates required to take that address meeting the needs of culturally diverse students?; (b) What courses are elementary, middle and high school teacher candidates required to take that address meeting the needs of linguistically diverse students?; and (c) What opportunities do elementary, middle and high school teacher candidates have to work directly with CLD students?

### **Program Description and Background**

The university teacher preparation program evaluated in this study is designed for students who are working towards obtaining their teacher certifications as part of a bachelor's degree requirement. In addition to courses required to obtain a degree, students seeking teacher certification through this program are required to take courses focused on the pedagogy of teaching. Undergraduate students may pursue teaching certifications in elementary, middle, or secondary grades. A teacher candidate's coursework typically depends on both the school level and content area. Most of TCs who are interested in teaching early childhood (EC) through sixth grade typically major in Interdisciplinary Studies and take additional certification courses. Teacher candidates seeking to teach middle school, fourth through eighth grade, will also major in Interdisciplinary Studies and take additional certification courses focused on either English Language Arts and Reading (ELAR)/Social Studies Composite, Mathematics, or Mathematics/Science Composite. The Interdisciplinary Studies major includes education-related courses, but the specific courses vary slightly, based on certification focus. High school level teacher candidates will major in their chosen teaching field and take six certification courses and two semesters of student teaching.

Regardless of the grade level, PSTs need to be prepared to work with culturally and linguistically students. This preparation is crucial to both teacher and student success in the classroom. Because secondary teacher candidates take more content courses, coursework relevant to working with culturally and linguistically students is limited and does not allow the same amount of time dedicated to pedagogical preparation received by elementary teacher candidates.

All teacher candidates are required to complete at least two semesters of student teaching. The preparation program partners with over 70 of the surrounding school districts to place teachers in practicum situations. Before beginning their student teaching, preservice teachers will select four districts as preferences in completing their student teaching. The degree types, majors, and certification areas are outlined in Table 1. These are the program areas that were examined in this study.

Table 1  
*Degree Plans for Teacher Candidates*

Degree Type	Major (Minor)	Certification
Bachelor of Science	Interdisciplinary Studies, EC-6 Generalist	EC-6 Generalist ESL Supplement
Bachelor of Arts	Interdisciplinary Studies, Bilingual Education	EC-6 Bilingual Generalist
Bachelor of Science	Interdisciplinary Studies, Bilingual Education	EC-6 Bilingual Generalist
Bachelor of Science	Interdisciplinary Studies	EC-6 Generalist and EC-12 Special Education
Bachelor of Science	Interdisciplinary Studies	4-8 ELAR/Social Studies Composite
Bachelor of Science	Interdisciplinary Studies	4-8 Mathematics
Bachelor of Science	Interdisciplinary Studies	4-8 Mathematics/Science Composite
Unspecified (depends on major)	Major in teaching field of student's choice (Minor in Education)	7 or 8-12 in teaching field

### Data Collection Methods

Degree plans for each of the four EC-6 certifications, three 4-8 certifications, and the secondary certification were obtained online through the program's website. After determining which courses were required for each certification, course descriptions available online were gathered. These clusters of courses included Bilingual Education, Early Childhood Education, Curriculum and Instruction for Elementary Education, Curriculum and Instruction for Middle School Education, English as a Second Language, Reading, Special Education, and Secondary Education.

Each of the available course descriptions were placed in an Excel spreadsheet. Then, Saldana's (2015) approach to coding qualitative data was applied to analyze significant statements and assign descriptive codes. Second cycle structural coding was then used to group codes into common themes, which were also noted in the spreadsheet and described in Table 2. A content analysis approach was then used to sort data by structural codes and count the number of occurrences for each code within each of the eight degree plans. Frequency counts were used to tally the number of codes as shown in Table 3.

Table 2  
*Definitions of Structural Codes for Course Descriptions*

Structural Code	Code Description
Language	Courses that referred to language development, ELLs, second languages, literacy, or bilingual education
Culture	Courses that specifically reference cultural diversity
Cultural and Linguistic Diversity	Courses that referenced the historical development of changing demographics of subpopulations or the interaction of languages and the different cultures that speak these languages
Diversity	Courses that referred to “diversity” but did not specify cultural or linguistic diversity
Families	Courses that specified working with and communicating with parents or families. This code was given to any course that referred to families or parents, even if it did not specify CLD.
Field Experiences	Courses that specified field experiences in grade level-appropriate public school settings. Student teaching is included in this code.

Table 3  
*Frequency counts for Structural Codes by Degree Plan*

Degree / Certification	Language	Cultural	CLD	Diversity	Families	Field Experience	Total Courses Coded
BS - EC-6 Gen, ESL Supplement	12	2	6	1	1	17	21
BA - EC-6 Bilingual Gen	11	2	5	1	1	16	20
BS - EC-6 Bilingual Gen	11	2	5	1	1	16	20
BS - EC-6 Gen, EC-12 Sp Ed	8	2	6	0	2	14	19
BS - 4-8 ELAR/Social Studies	6	2	5	1	1	11	14
BS - 4-8 Math	4	2	5	1	1	8	12
BS - 4-8 Math/Science	3	2	4	0	1	7	11
Secondary	0	0	1	1	1	7	8

### Findings

Results indicated that elementary teacher candidates were exposed to all six themes or structural codes related to culturally responsive instruction through their required coursework, whereas their middle and high school counterparts received less required coursework in these areas. Because middle and high school teacher candidates are required to take more content specific courses based on their teaching field, the number of required education courses is drastically lower than elementary certifications. Even so, EC-6 Generalist teacher candidates took half as many culture-focused courses as language-focused courses. Composite ELAR/Social Studies teacher candidates took the most language-focused courses of all 4-8 certification candidates, but these six courses were half of the number of language-focused courses their EC-6 Generalist counterparts were required to take. Secondary teacher candidates had eight total courses that were coded, and only three of them referenced culturally and linguistically, Diversity, or Families, and none of the courses referenced Language or Culture.

On the other hand, almost 88%, seven out of eight of the secondary courses, require teacher candidates to complete some field experiences. At least 63%, seven out of 11, middle school certification courses and almost 74%, 14 out of 19, elementary school certification courses require field experiences. This code was, by far, the most frequently referenced focus in the available course descriptions. Worth noting, is the fact that approximately half of all courses were coded with both field experience in addition to another code. Readers are directed to Table 3 for the frequency counts of each code for each degree plan.

### Implications

The strongest component of this teacher preparation program was the number of field experiences that teacher candidates were required to complete throughout their certification program with this university. A number of researchers (Nadelson, et al., 2012; Ronfeldt, Schwartz, & Jacob, 2014; Schellen & King, 2014; Wood & Turner, 2015) emphasize the importance of field experiences as one of the best ways to adequately prepare teacher candidates to work with culturally and linguistically students. Furthermore, because approximately half of the courses were dual coded with Field Experience and at least one other code, many opportunities exist for university supervisors to help teacher candidates relate material discussed in coursework to experiences in the classroom (Schellen & King., 2014; Wood & Turner, 2015) and to reflect on their developing understanding of cultural responsiveness (Bennett, 2012). No evidence was found to describe coordination and collaboration between the mentor teachers and the university professors. This collaboration would enhance further connections and applications of explicit knowledge on pedagogical practices with culturally and linguistically learners and real-world applications in classrooms, as recommended by Wood and Turner (2015). This is an area for further study.

Although the student teaching partnerships provide teacher candidates with numerous options to conduct their practicum in highly diverse school districts, the program studied did not require teacher candidates to participate in at least one campus with a high number of culturally and linguistically students. Additionally, in conducting this study, little information was evident regarding the types of classrooms in which teacher candidates completed their field experiences. Close monitoring of the types of school and classroom environments in which teacher candidates are placed might aid teacher preparation programs in enhance further teacher candidates' preparedness in effectively meeting the academic and social needs of culturally and linguistically students in schools as researchers have emphasized the importance of teacher practicum experiences (Nadelson et al., 2012; Schellen & King, 2014; Wood & Turner, 2015). Although the university-based program explored in this study placed emphasis on teacher candidates' interactions in public school settings, further investigation might take into account the types of settings teacher candidates are placed in, with a particular focus on exposing candidates to culturally and linguistically diverse classroom environments.

Based on the information available and analyzed in this study, the university-based teacher preparation program studied tended to place greater emphasis on linguistic diversity in coursework and field opportunities than on cultural diversity. Further research might determine what, specifically, is taught in the few culture-specific courses offered in the program to gain a more accurate sense of the culturally and linguistically teaching strategies presented and identify possible

gaps in learning. Special attention should be paid to the lack of culturally and linguistically emphasis at the secondary level for those teacher candidates seeking middle and high school certification.

### **Conclusions**

Educational researchers have recommended that teacher preparation programs include a combination of coursework that provides teacher candidates with specific knowledge about students' cultures and languages (Bennett, 2012; Gay, 2002; Robinson & Clardy, 2011; Schellen & King, 2014). Likewise, researchers stress that teacher candidates should be provided with ample opportunities to work directly with students from a variety of cultural and linguistic backgrounds (Nadelson et al., 2012; Ronfeldt et al., 2014; Schellen & King, 2014). The university-based program explored in this study program required TCs to engage in substantial classroom experiences relevant to working with culturally and linguistically students at elementary, middle, and high school level. This component appeared to be one of the strongest aspects of the teacher training program but would be further strengthened by the inclusion of specific requirements for preservice teachers to work in classes with culturally and linguistically students. The university was, at the time of the study, beginning to develop these requirements. Although little information was available regarding the interaction between concepts taught in teacher preparation courses and their application in classroom settings, several courses included field work in conjunction with the classwork and provided many opportunities for reflection and discussions (Bennett, 2012).

This study was an initial exploration into how a select university-based teacher preparation program intentionally focused on preparing preservice teachers to work with culturally and linguistically students. The findings reinforce the extant research that teacher preparation programs emphasize the teaching of both explicit knowledge about cultures and languages, as well as deliberately provide opportunities for teacher candidates to work with students who represent a variety of cultural and linguistic backgrounds. This study can be used as a model for how other teacher preparation programs might closely examine their program requirements to determine how well they intentionally are preparing teacher candidates to support the success of culturally and linguistically diverse students.

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# CHANGES IN PRESERVICE TEACHER BELIEFS: INDICATION OF LEARNING

**Melanie Fields, Ph.D.**

Texas A&M University-Commerce

**Julie J. Williams, Ph.D.**

Henderson State University

**Laura Isbell, Ph.D.**

Texas A&M University-Commerce

## Abstract

*Conventionally field experiences of preservice candidates occur towards the end of a program. This study investigated the beliefs of three preservice teachers who were enrolled in a unique program, which allowed them to experience teaching as freshman in college. With these experiences earlier in their program, they were challenged to reflect on the complexity of teaching. Four semi-structured interviews and observations were conducted over a year to examine what the teachers were learning and thinking about teaching through teaching experiences at elementary and middle schools. As Lave and Wenger (1991) suggest, a person learns through being an apprentice interacting within the community of practice. Through these rare early experiences the preservice teachers were better situated to learn about teaching. The findings indicate that the early experiences change their beliefs about the reality of teaching.*

Keywords: preservice teachers, early field experience, situated learning

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Typically, students who set out to earn a degree for education do not usually experience teaching until the end of their program. For the first three years, generally students in a traditional program are subjected to theory, specific content knowledge, and instructional methods. Therefore, these soon-to-be teachers rarely experience teaching in a classroom until the final year of their program. A general and more common practice of the teaching programs is to have student teachers enter a yearlong internship at the end of coursework. There is a unique difference of those traditional teaching programs and the UTeach program in which preservice teachers (PSTs) begin their experience by actually teaching early in the program, usually in their freshman year.

A replication of UTeach program, designed by the University of Texas at Austin, combined a degree in either mathematics or science, with a minor in secondary education (grades 8-12). Specifically, these students enrolled in the program are earning bachelor degrees in mathematics and/or science. In addition, if these particular students are interested in teaching, they generally seek secondary certification. The UTeach program is distinctive from other secondary teacher preparation programs because preservice teachers experience observations during the first semester for coursework (UTeach, 2017). These early experiences give secondary science and math preservice teachers a glimpse into the demands of teaching focusing on the expectations, challenges, and nuances of teaching. Ten years of reports from the UTeach program refer primarily to retention of science and mathematics teachers in the field following UTeach preparation (Walkington et al., 2012). The replication retention data align with the UTeach program reports. However, neither program, until this study, investigated the beliefs of preservice teachers during the first year of the teacher preparation program regarding the factors

that related to their decisions to continue in the program, progressing toward teacher certification. This study examined preservice teachers' beliefs about teaching science and mathematics, as noted during the first year in the program. The following research questions guided the study.

- R1. What are secondary mathematics and science preservice teachers' early beliefs about teaching?
- R2. How do their perceptions change about teaching throughout their experiences?
- R3. What factors of the preparation program contributed to preservice teachers' perceptions of teaching?

### **Review of Literature**

Preservice teachers are motivated to teach for various reasons. The experiences and beliefs a person has prior to entering the field of education impacts the grade level and content they choose to pursue to teach (Shulman, 1986). According to Pajares (1992), beliefs are a set of notions brought about through predetermination, experience, changes, inferences and behaviors/actions. Throughout their experiences in the classroom, preservice teachers' beliefs are often altered.

Because there is difficulty in defining and collecting data about teacher beliefs, researchers such as Lasley (1980) and Pajares (1992) only theorized the reasons people choose to teach. In fact, Pajares (1992) attempted to "clean up the messy construct" of teacher beliefs and argued understanding these beliefs can inform many branches of educational research such as education courses, curriculum, practices of teaching and theories of teaching. Considering individual's beliefs can change from moment to moment, it is challenging to gather data. It is often captured in limited ways such as interviews and surveys. Researchers explained a major limitation of their studies have been the number of participants, numbers of interviews and limited amounts of collected data (Doppen, 2007; Fajet, Bello, Leftwich, Mesler, & Shaver, 2005; Lasley, 1980).

Yet, since 1992, research conducted for understanding preservice teachers' beliefs has continued in various contexts. Researchers have specifically explored beliefs about teaching content such as mathematics, social studies, science and technology (Berry, 2013; Chai, Wong, & Teo, 2011; Kirtman, 2008; Rosas, 2011). Hancock & Gallard (2004) and Nuangchalerm & Prachagool (2010) particularly studied the effects of the field experience component on science teachers' beliefs of teaching. The assumptions are that the actual experience changes the preservice teacher beliefs about teaching. Moore (2003) suggested experience should begin sooner than the final apprenticeship semester, in order for richer learning to occur.

Ongoing changes are constant in teacher preparation programs. Within the teacher preparation programs there is a relevant need to understand the prior beliefs, changes in beliefs and the factors of preservice teachers that lead to those changes. Throughout a teacher preparation program, promoting early reflective teaching practices is beneficial for the preservice teachers. Providing opportunities for students to learn in social setting, not in isolation and within the confines of a classroom is where a teacher will learn to teach (Herrington & Oliver, 2000; Moore, 2003; Putnam & Borko, 2000). The preservice teachers may learn to analyze their reasons for teaching, what they believe they know about teaching, and ultimately change their beliefs of teaching (Darling-Hammond, 2000; Pajares, 1992; Usher, 2009; Watson, Miller, Davis, & Carter, 2010). Pajares(1992) reported a synthesis of current teacher preparation practices remain elusive. Currently, theories and definitions surround how, why, and what impacts beliefs, but few studies are being continued to get at the reality.

### **Theoretical Perspective**

Primarily used for this study, Lave and Wenger's (1991) Situated Learning Theory (SLT) which suggests learning occurs when individuals are engaged in practices. According to the SLT, having an experience can alter opinions or beliefs about any phenomena. Specifically, the concept of legitimate peripheral participation is that the learner is slowly emerged into practice, transforming learner beliefs. The end goal, within this theoretical framework, emerge preservice teachers through apprenticeship earlier in the program as a way to become masters of pedagogy--the art of teaching.

According to Lave and Wenger (1991), a person learns through a contextualized experience in which they are participating actively. The structure of the program aligned with the primary principles of the SLT. The two principles are: (1) knowledge needs to be presented in an authentic context, i.e., settings and applications that would normally involve that knowledge; and, (2) learning requires social interaction and collaboration. Within the authentic social context of the preservice teachers' early field experience, preservice teachers are learning through interaction and collaboration with both classroom teachers and teacher educators. The preservice teachers gain exposure to authentic learning situations earlier and can practice teaching in their first semester of college, rather than waiting until the end.

In addition to teaching in the classroom, they receive immediate and reflective feedback on their performance as a classroom teacher. As a result, preservice teachers reflect on their prior beliefs about teaching while gaining new insight and understanding of the practice of teaching. This legitimate peripheral participation and experience is unique to these preservice teachers. It is necessary for researchers, educators, and mentors to understand how early experience allow preservice teachers to reflect and build upon beliefs about teaching practices. This study holds the assumption that the experiences from the apprenticeship will impact their beliefs and knowledge regarding teaching.

### **Methods and Procedures**

A multiple case study was conducted to examine early beliefs of three preservice teachers completing the first two introductory teaching courses, taught in the first year of the UTeach program. The courses, in addition to instruction about theory, included teaching lessons, prepared by the university staff, in elementary and middle schools, three times each semester, under the tutelage of mentor teachers. Conducting a yearlong case study allowed the researcher to observe how beliefs and ideas about teaching changed throughout the participants' experiences in elementary and middle school classrooms.

#### **Setting**

Within the context of this program, the participants were placed in a mentor's classroom six times in each of the first two courses. The first semester, preservice teachers instructed and observed in an assigned elementary classroom, and the second semester in middle school classrooms. During the first semester, the preservice teachers taught prescribed lessons for three classes and observed and reflected on the mentors' instructional practices for the remaining three classes. In the second semester, preservice teachers created and taught three lessons as well as observed multiple mentor teachers to witness different teaching perspectives.

Throughout all experiences, preservice teachers were expected to reflect as a teacher rather than as a student. Being able identify with various teaching practices allowed them to decide on instructional practices they might implement in their future classrooms. As they progress through the program, preservice teachers learn about theory and apply it in their practice, encouraging them to develop and alter their personal teaching philosophy. Korthagen (2010) and Moore (2003) argued that theory alone is not enough for an upcoming teacher to have prior to their experience, having theory alongside practice is optimal for connections to be made between the two.

#### **Data Sources**

Data were collected from three students during their tenure in two program courses, across two semesters and included: a demographic survey, multiple interviews, field observations, and narrative reflections. Students volunteered after an interest survey was sent out to recruit participants from the introduction course. However, several students decided after the first interview they did not want to commit to the entire year. The three participants discussed in this study completed all interviews and observations. Pseudonyms for participants were used to protect their identities. The three participants were either math or science majors who chose to minor in education.

Peter identified as a twenty-year-old Caucasian male. Paul identified as a Latino male age twenty-one. Mary identified as a twenty-year-old Asian female. Although Seidman (2012) recommends 3 interviews, there was a necessity for

a pre-and post- interview for each semester to determine changes in beliefs. Therefore, at least 2 semi-structured interviews were conducted each semester, for a total of 4-6 interviews per participant, followed by member-checking of transcribed interview data. Additionally, the researcher followed Seidman's basic protocol of the interview processes: life history, experiences, and reflection and connections - using the art to elicit reflections.

During the second semester, both interviews were conducted using art as metaphor where students created a gallery of art that represented their beliefs of themselves as teachers. On average interviews lasted forty-five to sixty minutes. NVivo software was used for coding the transcribed data. The multiple data sources were analyzed and triangulated, employing discourse analysis methodology and an analytical approach that mapped the findings onto the SLT.

## Results

Overall, findings indicated that participants became more reflective about their instructional practices and pedagogy. The participants' beliefs revealed a growing understanding of the teaching profession, as more than just teaching from a PowerPoint. Responses given by the all three participants indicated a stronger understanding of theory through practice, and gained a deeper understanding and appreciation for the intricacies of the art of teaching.

### Authentic Contexts and Settings

Throughout the interviews the participants were asked what they were learning about teaching in their coursework and classroom experiences. They each claimed, that almost immediately, they obtained a new identity. They could visualize themselves as preservice teachers versus being a student solely. For example, after teaching his first lesson, Peter stated:

If anything, it has kind of opened my eyes to like how much you have to put into teaching, how much it is really not just getting up there and reading a book, how much you have to find a way to grab the attention of the students, and make it somewhat fun for them, but at the same time really just teach them.

Conversely, preservice teachers in traditional education programs often do not reach this status until their fourth year of college. This important paradigm shift in identity created an awareness of becoming responsible for others, which in turn pressed PSTs to take ownership of their learning. In addition, each of these preservice teachers were challenged to know more content than their students, coupled with a readiness to address questions posed by curious elementary students. For example, Paul stated, "Patience, understanding, just really paying attention to your students – be able to read them, and know why they are confused and not learning the stuff that you do."

Once inside the classroom, the preservice teacher was both a student and teacher simultaneously. Within the moments of teaching, they have to constantly reflect and revise their thinking. What this means is in the act of doing, they are teaching themselves how to learn about teaching – self-directing themselves towards understanding. For example, Mary realized,

Well, at first, I didn't think it would be that hard to be a teacher. I found out that it is harder because they have to [solve] a lot of problems, improvising as they are teaching, because you don't know what the students will say and so, sometimes you would have to change up your lesson while you teach according to what they say.

### Legitimate Peripheral Participation

All of the participants repeatedly expressed a desire to be an interactive teacher. Although the three participants offered different, but overlapping definitions of what it means for a teacher to be interactive. They wanted to create a classroom environment that would be student-led, hands on, and connect to personal experiences

During each interview participants in this study noted each time they teach, they learn. For each participant, this experience showed that teaching is a daily lesson and constant change. All participants agreed that to be a successful teacher it is important to first be lifelong learners. Although not in those exact words, they all spoke about their inclination to do what is required to be the best teacher for their students. While each had different opinions as to the methods of delivery,

they realized teaching requires continual reflection and learning. For example, Peter recognized his dual role as both student and teacher, “I don’t want to walk in with the teacher’s hat, because it’s like I am just here to teach you, but you also want to learn [about teaching].” Mary expressed a similar feeling,

Well for me it wasn’t what I expected it to be. I just got a lot more out of it than a textbook kind of material, it was more of... probably more just like what it would feel like if I was a real teacher, I guess, I didn’t just feel like a student in that class.

During the last interview, when they used the art to explain how the experience had shaped their views of teaching, they all realized teaching was more than “standing and delivering a PowerPoint”. In the beginning of the program, they believed teaching was easy. Paul stated, “I never really knew how much work goes into teaching and I can see whenever I complained about my teachers now, it was a big deal and really hard.”

Specifically, one participant, Mary came full circle to realize the beauty of teaching. She chose a print for her gallery that included an abstract of a Christmas tree with lights and childlike faces. She stated, “Teaching is like packages at Christmas, lots of different wrapping, and always full of surprises. Now, I look forward to Christmas every day.” All three participants acknowledged the requirements for a teacher is different from what they originally believed and the job was more intense and important than they ever realized. A primary factor for these changes was the actual experience of teaching. Peter said, “We didn’t just sit around and talk about what we would do to teach, we actually had to get out there and do it.” By creating their own lesson plans and being more involved in a classroom with students who had many different needs, they learned more about the complexities of teaching.

### Discussion

As the preservice teachers progressed through the teacher preparation program, the combination of theory and practice appeared to be a powerful combination altering their beliefs about teaching. Their beliefs transitioned and transformed into learning and understanding; specifically, what it truly means to be a teacher and how to teach effectively. The participants of this study experienced several transformations as they progressed through the program. Additionally, they were able to verbalize and express their new beliefs as a tool for learning.

It is important to note that during a majority of the conversations, the students’ expressed early experiences to teaching allowed them the best insight. Furthermore, the theory about teaching would not have been enough to actually learn about the practice of teaching. From this study, we could glean the importance of early field experience on a student’s decision and desire to become a teacher. Perhaps, further research studies could determine if a program, such as UTeach, imposes a greater impact on the preservice teachers in other areas aside from early learning about teaching.

After these experiences, the participants were more open to teaching different grade levels, using new instructional practices, and serving diverse student populations. Do these beliefs alter deeper understanding of teaching as more than a job, do they change the course the student chooses to take? Should experience in the field begin much earlier in a preparation program for teachers? Further review and analysis of this study is underway to seek more understanding of how the beliefs of preservice teachers informed their education of teaching. Findings indicated the students were influenced and had changes in their beliefs, but what does that mean for the program and for us as teacher educators?

### Conclusion

This study adds valuable insight to the area of teacher preparation program research. Early field experience can impact the beliefs preservice teachers hold regarding teaching, expanding their ideas of what teaching entails. Insights include, but are not limited to: (a) students’ ideals about teaching as they are immersed into teaching quickly, (b) overt conversations about the theory and practice of teaching, and (c) effects of opportunities and exposure to classroom pedagogy and practice earlier within a teacher preparation program.

The goal of the study was to understand how the ideals of preservice teachers shift, change, or alter once they have begun to learn about teaching through authentic teaching experience. The very structure of this program allowed the preservice teachers to become teachers immediately. It incorporated multiple forms of data to triangulate and more clearly understand the perceptions of secondary mathematics and science preservice teachers. The majority of existing literature regarding preservice teachers' perceptions is based on data collected at the conclusion of a teaching preparation program. Yet, this study occurred at the beginning of their journey, rendering knowledge of the preservice teachers' early beliefs and how these changed throughout teacher preparation. The results from this study suggest earlier teaching experiences should be implemented in teacher preparation programs.

As Lave and Wenger (1991) states, "learning is not merely situated in practice- as if it were some independently reifiable process that just happened to be located somewhere; learning is an integral part of generative social practice in the lived-in world" (p. 35). In the beginning of their college career they are quickly immersed into being a teacher, even if it is only a brief time. Naturally, this brings about a change in identity for them and new ideals on learning. Simply stated, their beliefs changed-- they learned.

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# CHANGING MATHEMATICS TEACHING EFFICACY OF COLLEGE STUDENTS: THE IMPACT OF INFORMAL LEARNING EXPERIENCES

**Suzanne F. Lindt, Ph.D.**

Midwestern State University

**Dittika Gupta, Ph.D.**

Midwestern State University

Research funded by the West Foundation for Educational Research

## Abstract

*The current research examined the impact of facilitating a week-long mathematics middle school camp on college students' mathematics teaching efficacy beliefs. The participants of the research study were five undergraduate students hired as counselors for the mathematics camp. A parallel convergent mixed method design was used to analyze both survey and written-response data from each undergraduate student. College students responded to the Mathematics Teaching Efficacy Beliefs Inventory (MTEBI), to which they self-reported their teaching efficacy beliefs for mathematics before and after facilitating mathematics activities throughout the week. In addition, qualitative data was gathered through college students' daily journals in which they recorded their beliefs about facilitating the camp and student learning that occurred throughout the day. Paired sample t-tests were conducted, and results suggest positive changes occurred in college students' beliefs about teaching mathematics. Analysis of the qualitative data using open and axial coding, along with member checking, revealed the positive impact of informal experiences.*

Keywords: mathematics, teacher efficacy, preservice teachers, informal experiences

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Teachers possess self-efficacy in their ability to teach effectively, defined as teaching efficacy (Woolfolk Hoy, 2000). Teaching efficacy is subject-specific; therefore, teachers may feel more confident in delivering content in one discipline over another (Woolfolk Hoy). Further investigations offer that differences in teaching efficacy may result from one's self-efficacy in a subject (Woolfolk Hoy; Woolfolk Hoy & Spero, 2005; Buss, 2010). This is of great importance when preparing and training preservice teachers (PSTs) as future teachers. As preservice teachers gain the content knowledge to teach effectively, many remain unsure of their ability to deliver the content required of their discipline effectively (Woolfolk Hoy; Ball, 1990). Specifically, many preservice teachers struggle with beliefs about their ability to teach mathematics (Enochs, Smith, & Huinker, 2000; Akin & Kurbanoglu, 2011), and research suggests that teachers with low teaching efficacy may be less likely to work with struggling students (Ashton, Dota, & Webb, 1983).

To support preservice teachers in their learning experiences and to impact their teaching self-efficacy in a positive way, investigating a variety of learning experiences may be needed. Some researchers recommend the use of informal experiences to influence preservice teachers positively in both professional development and in attitudes towards teaching

mathematics (Katz et al., 2011; Tuchman & Issacs, 2011). Facilitating summer mathematics camps may be one such way to impact preservice teachers' mathematics teaching efficacy because of the nature of this informal experience.

### **Theoretical Framework**

Bandura's Social Cognitive Theory (Bandura, 1986) defines self-efficacy as one's perception of his or her ability to be successful on a task. According to Bandura, efficacy beliefs are different than outcome expectancies. Personal self-efficacy is defined as the perceived judgment of one's own capacity to complete a task, and that can differ from the anticipated outcome from engaging in the task. Bandura (1997) suggests that self-efficacy is developed from one's experiences while working on a task. Especially in school, students evaluate their success or failure after completing a task and create their self-efficacy based on that. Defined as mastery experiences, students' successful encounters with tasks lead them to develop confidence to engage in future tasks (Bandura, 1997). Additionally, self-efficacy is task specific; in other words, one may possess high self-efficacy for one discipline or for understanding particular concepts in one discipline while possessing low self-efficacy for other disciplines and tasks within them (Bandura, 1986). This becomes even more critical when considering the discipline of mathematics. High mathematics self-efficacy, which describes a student's belief about his or her ability to be successful on a mathematics task, may result in greater mathematics success (Klassen, 2004). Correlational studies suggest that greater mathematics self-efficacy may result from greater success in mathematics lessons (Pajares & Kranzler, 1995; Zimmerman, Bandura & Martinez-Ponz, 1992). Teachers who assist students in gaining a more thorough understanding of mathematics problems and concepts are likely to influence students' mathematics self-efficacy and eventual success in mathematics.

### **Teaching Efficacy**

Similar to self-efficacy, teaching efficacy is defined as the belief in one's ability to be an effective teacher (Gibson & Dembo, 1984). Though a teacher may possess high self-efficacy for a particular discipline, he or she may or may not possess high self-efficacy for teaching it. Differences in teaching efficacy may lead to various student outcomes, resulting from teaching strategies either effectively or ineffectively employed and also from the teacher's persistence when faced with teaching difficulties. Teachers with high self-efficacy for instructional delivery are more likely to teach well and impact learner success. Teacher mathematics self-efficacy is defined as a teacher's beliefs regarding his or her ability to deliver effective mathematics instruction, which results in improved student outcomes (Woolfolk Hoy, 2000). By providing preservice teachers with various opportunities to teach content, these preservice educators may be better prepared to become successful content teachers.

### **Mathematics Anxiety and Self-Efficacy**

Ball (1990) states that beliefs such as preservice teachers' traditional views on teaching and anxiety of performing mathematics can pose barriers to developing a reformed vision of teaching mathematics. Assisting preservice teachers in developing greater teaching efficacy is salient to the development of their mathematics self-efficacy. Because mathematics is comprised of a variety of strands with different techniques and many students lack confidence in mathematics, self-efficacy for teaching mathematics has been frequently researched because of its impact on teachers' mathematics anxiety. Akin and Kurbanoglu (2011) conducted a study to examine the relationship between mathematics anxiety, mathematics attitudes, and self-efficacy for university students. They used correlation analysis using a structural equation model and confirmed previous research which suggests mathematics-anxiety as a consequence of low self-efficacy.

Mathematics anxiety is not just a dislike for mathematics but rather discomfort, a feeling of tension, helplessness, and mental disorganization when one has to perform mathematically (Richardson & Suinn, 1972; Wood, 1988; Vinson, 2001). Moreover, research also offers that teachers with high mathematics anxiety and low self-efficacy of teaching mathematics avoid teaching mathematics, which may hinder independent thinking about mathematics among students (Karp, 1991; Trice & Ogden, 1986). Researchers such as Wood (1998), Bush (1989), and Trujillo and Hadfield (1999) suggest that teachers with mathematics anxiety and low self-efficacy tend to unintentionally transfer and create mathematics anxiety

among their own students. Hence, a need exists to provide prospective teachers with experiences that can positively impact their self-efficacy of mathematics. Prospective teachers who lack confidence and have low self-efficacy of content and teaching of mathematics tend to be teachers who have negative attitudes towards mathematics and teach in ways that develop low self-efficacy in their own students (Bekdemir, 2010). For educator preparation programs, understanding how teaching efficacy in mathematics impacts teaching methods and student achievement may help them prepare preservice teachers with the confidence and skills needed to become successful teachers.

### **Experiences for Preservice Teachers**

According to Bandura (1986), self-efficacy is malleable and is impacted by the mastery experiences in which students are engaged. This becomes critical in teacher preparation programs. Preservice teachers should be provided with various opportunities to teach in their content areas, so that they may be better prepared to become successful content teachers. Though every teacher preparation program provides preservice teachers with opportunities to teach in traditional classroom settings, preservice teachers may also benefit from other experiences as well. According to Mohr-Schroeder et al. (2014), Tuchman and Issacs (2011), and Tichenor and Plavchan (2010), summer camps provide an informal learning environment which is instrumental in strengthening and reinforcing students' mathematics skills, thus preparing and inspiring students of all backgrounds to take higher level mathematics and science courses and increasing retention and enrollment for education programs. Gresham (2009) states that mathematics teaching efficacy may result from one's own negative beliefs and anxiety about mathematics, leading to decreased beliefs about one's ability to teach mathematics effectively. Informal experiences such as summer camps can provide an environment with no pressure of grades to help college students experience teaching of mathematics concepts in a more relaxed setting (Tichenor & Plavchan). Woocher (2004) and Tuchman and Isaacs (2011) recommend the use of high-quality informal experiences.

Motivated by this argument, the purpose of the current research was to understand whether or not college students' mathematics teaching efficacy beliefs would be impacted by facilitating a one-week intervention program for middle school students. Research questions were as follows:

1. To what extent do college students' mathematics teaching efficacy beliefs change following instructing a week-long mathematics summer camp?
2. How do college students' beliefs and attitudes about teaching mathematics change while instructing a week-long mathematics summer camp?

### **Methods**

Five college students were hired as camp counselors for a week-long middle school mathematics summer camp, comprised of 20 students entering 6th, 7th and 8th grades. Three of the college students were education majors (special education, 4-8 generalist, and EC-6), while the other college students had majors outside the college of education (engineering and pre-law). All five college students reported previous experience working with children in the middle grades, though all the experiences were varied. The college students also revealed varied levels of expertise in their mathematical understanding.

Prior to the camp, college students participated in an all-day training, led by a certified mathematics educator, to assist them in understanding the mathematics concepts and the related activities. The college students worked through each mathematics activity themselves to ensure their understanding, comfortability, insight into the concept, and proper facilitation of each activity for the middle school students. The camp activities were designed to help middle school students learn how to apply difficult mathematics concepts to the real world; therefore, activities were hands-on and related to both current middle school mathematics standards and student interest. Camp counselors were responsible for leading the activities for small groups of three to four students and to facilitate student discussions to scaffold mathematical understanding of the concepts.

## Data Sources

To answer the research questions, researchers determined that both qualitative and quantitative research methods should be applied; therefore, a parallel convergent mixed-methods study was conducted. According to Morse (1991), convergent design helps “to obtain different but complementary data on the same topic” (p. 122). Furthermore, Creswell and Plano-Clark (2011) recommend a convergent parallel mixed method design when both qualitative and quantitative data are compared and contrasted for overall results of the study. The current study involves comparing quantitative and qualitative data in the form of survey and daily reflections to inform the results of the study.

**Quantitative.** College students’ mathematics teaching efficacy was assessed using the Mathematics Teaching Efficacy Beliefs Instrument (MTEBI; Enochs et al., 2000). The MTEBI is comprised of two independent subscales, personal mathematics teaching efficacy (PMTE) and mathematics teaching outcome expectancy (MTOE). The PMTE assesses information related to teachers’ beliefs about student performance based on teacher actions (“I will continually find better ways to teach mathematics”), while the MTOE focuses on a teacher’s beliefs about his or her ability to teach (“If students are underachieving, it is most likely due to ineffective mathematics teaching”).

**Qualitative.** In addition to completing the surveys prior to and following the camp, college students also recorded their beliefs and attitudes about teaching mathematics in their daily journals. Students noted their experiences in teaching various mathematics concepts through the hands-on approach with activities connected to real-world. Counselors responded to questions, such as the following: What did you gain from facilitating students’ learning today? What stood out for you today? Describe an “aha” moment for you today.

Daily journals were completed in a Word document immediately following the camp every day. College students also completed a final reflection at the end of the camp to indicate what they gained from teaching the camp and what impact it had on them, for overall reflection about themselves and their teaching.

## Results

### Quantitative

In order to determine whether college students’ mathematics teaching efficacy was impacted as a result of the camp, averages for each subsection for self-efficacy were first determined for both the pre-test and the post-test. Then, a paired samples t-test was conducted for the college students’ responses to both sections of the MTEBI. Only one of the self-efficacy subscales attained significance, the MTOE, and the scale revealed an increase in mean differences between the pre-test ( $M=29.4$ ,  $SD=3.58$ ) and post-test ( $M=31.80$ ,  $SD=4.44$ );  $t(5)=3.54$ ,  $p = .02$ . In other words, college students’ average responses to the MTOE increased significantly following their participation as a counselor in the camp. Students indicated little change from pre-test to post-test in the PMTE (as seen in Table 1).

Table 1

*Results from Paired Samples t-Test Indicating Mathematics Teaching Efficacy*

Self-Efficacy Construct	<i>t</i>
Personal mathematics teaching efficacy	3.54*
Mathematics teaching outcome expectancy	-.18

*Note.* \*  $p < .05$

## Qualitative

The daily reflections were analyzed qualitatively and independently by the two researchers. First, each of the researchers independently open-coded the reflections to form initial categories and segmented the information into tentative themes. Each of the researchers then independently used axial coding by taking the open codes to form categories or themes that relate to each other. Creswell (2007) defines axial coding as a way for researcher to take an open or divergent code and then go back to the data and create categories around the open codes. After independent coding, the researchers held discussions to compare and contrast the categories and themes for qualitative data results. Reliability of the codes was established through inter-coder agreement and member checking by the two researchers.

Member checking and cross-validating each researcher's codes on changing beliefs and attitudes among counselors throughout the week-long experience led to the emergence of three overarching categories/themes: increased understanding of student differences, importance of extrinsic motivation and the teacher to encourage students, and the importance of connecting mathematics to student interest and real world to keep students on task. Qualitative results can be seen in in Table 2.

Table 2  
*Themes from College Students' Daily Reflections*

Theme	Evidence
Understanding Student Differences	<ul style="list-style-type: none"> <li>• "Each student requires different levels of attention."</li> <li>• "It taught me that there are kids that could be on the same grade but on completely different level, even if they aren't in the same grades, some kids may just surprise you"</li> <li>• "I observed the children I noticed a difference in a lot of their attitudes"</li> </ul>
Teacher to Encourage Students	<ul style="list-style-type: none"> <li>• "ALL students can get excited and learn about mathematics as long as the instructor is excited and shows the students that they care about their learning experiences."</li> <li>• "I realized that many students need an extra push or encouragement to truly show their knowledge. My students knew what to do and had great ideas but needed me to encourage a discussion."</li> <li>• "When they get into formula and math that they haven't learned they get into the "I don't understand" and "it's too hard" mode, but just a little push in the right direction will really help them to grasp onto the unfamiliar."</li> </ul>
Connecting Math to Students' Interests and Real-World Applications	<ul style="list-style-type: none"> <li>• "The students can see how mathematics is used in the real world and be able to apply it to their own personal lives. Students learn better when the activities are relatable."</li> <li>• "No matter how difficult the concept if there is activity or real-world application which allow someone to apply that concept to that application, they will understand that concept better."</li> <li>• "I learned that adding a robot means kids, who normally roll their eyes when asked to complete an equation, will eagerly and willingly do any math you ask them."</li> </ul>

**Student differences.** Student differences as an important component of teaching mathematics was realized by the college students. The experiences working with students and facilitating the camp every day resulted in college students' increased awareness of the differences in learning abilities and styles among middle-school students. The college students mentioned the different levels of understanding and learning of the students in several of their reflections. For example, the

greatest impact of the camp for two counselors was to realize that “kids in same grade could be at completely different levels” and that “each student is different” and requires different attention and guidance. In addition, others mentioned the understanding of students as different learners, such as kinesthetic or visual, and the need to incorporate all learning styles to teach for understanding.

**Importance of extrinsic motivation.** The researchers also found another emergent theme from the reflections, emphasizing the importance of motivation as encouraged by the teacher or extrinsic factors. Several college students commented on the teacher and motivation as the keys in learning, such as “the teacher needs to make mathematics fun”, “as teachers we need to be excited to have students excited” and “ALL students can get excited and learn about mathematics as long as the instructor is excited and shows the students that they care about their learning experiences.” In addition, the college students also realized the need for a teacher to support, to guide, and to encourage learning. One of the college student said “I realized that many students need an extra push or encouragement to truly show their knowledge. My students knew what to do and had great ideas but needed me to encourage a discussion” which was echoed by others in different ways (see Table 2). Further on, college students developed an awareness of the importance of developing “rapport” between teacher and students for effective learning. They talked about matching personality, being encouraging, and maintaining a “patient attitude”.

**Connecting mathematics to real-life.** The most prominent theme that emerged from daily reflections was an understanding of the need to connect learning to students’ interests and real-life. All camp counselors talked about the need to make mathematics concepts relatable to the students and their lives for meaningful learning to happen. For example, two of the counselors wrote that “no matter how difficult the concept, if there is an activity or real-world application which allows someone to apply that concept to that application, they will understand that concept better”, and “students learn better when the activities are relatable.” In addition, all the camp counselors mentioned the importance of connecting learning to students’ interests. For example, according to camp counselors, the robotics lessons were most successful because the students were interested in working with robots.

### Discussion

The purpose of the research study was to understand the extent that college students’ mathematics teaching efficacy might change while facilitating a week-long mathematics summer camp. College students indicated that their teaching efficacy changed as a result of facilitating the week-long mathematics camp. Specifically, their mathematics teaching outcome expectancy (MTOE) increased, which indicates that counselors experienced an increase in their beliefs about their ability to teach mathematics concepts to students. After participating in a week long hands-on learning experience with students, college students self-reported that they felt more confident in helping middle school students to improve their performance in mathematics, which is supported in previous research about facilitating hands-on experiences (Stein & Wang, 1998; Tuchman & Isaacs, 2011). In addition, college students’ reflections showed their increased understanding of specific strategies, such as motivation, interest, and differentiation that can help to improve student motivation and participation in mathematics. Though counselors did not indicate a change in personal mathematics teaching efficacy (PMTE) on the MTEBI, one college student did reflect that the camp helped her “adapt and be resilient without interfering with the students’ ability to learn” and “increased mathematical knowledge and pedagogy” at the end of the camp. The most prominent theme that emerged was college students’ understanding of the importance of connecting mathematics to students’ everyday lives. This theme may be more important, as research shows that preservice teachers that have not experienced mathematics learning or teaching through connection to real-world in an engaging manner tend to have low self-efficacy of teaching mathematics and more apt to transfer their own mathematics anxiety to students. Therefore, experiencing facilitating mathematics instruction in a hands-on real-life connection helped college students develop their own self-efficacy of teaching mathematics and significantly impacted their mathematics anxiety.

### **Educational Impact**

Camps like the one in this study have significant implications for college students and preservice teachers in mathematics. Participating in camps helps empower college students to make decisions that provide them with real-life experiences impacting their beliefs about teaching and learning. This is significant, because preservice teacher's attitudes are still malleable. Research indicates that established teachers' expectations regarding their own ability to teach and impact students' learning is less likely to change significantly, but impacting college students' self-efficacy can provide them with more flexible attitudes that may transfer to their future careers (Woolfolk, Hoy & Spero, 2005; Buss, 2010; Tuchman & Isaacs, 2011). Leading camps in specific disciplines, such as mathematics and science, can provide the means to experience content and teaching in a hands-on setting, and this may generate confidence. If so, it may translate into positive attitudes towards teaching mathematics and science.

Hands-on experiences in teaching have yet another major implication, which is to enhance the knowledge and self-efficacy of preservice teachers. Traditionally, college students have not had positive experiences learning mathematics in school. It is possible that facilitating a summer mathematics camp not only helps them develop confidence in their own ability but also positively impacts their view about their ability to teach a core subject. This research has implications for not only future teaching but also for STEM fields.

Yet another implication comes from the fact that preservice teachers have generally been taught mathematics through traditional means, and hence they have not experienced mathematics learning through real-world experiences. Mathematics summer camp provides one such platform for preservice teachers to experience teaching and learning of mathematics concepts through the real-world. Activities during the camp in this study included mathematics in the fountain, on the stop sign, in bubblegum, in creating giants, filling a glass, etc. These experiences provide an opportunity for preservice teachers to enjoy and develop a love for mathematics while not worrying about completing lesson plans or fulfilling course requirements. Experiencing the excitement of understanding mathematics through middle-school students can provide a powerful impetus to preservice teachers for their own mathematics learning. For example, as one of the college students said, "The moment that stood out to me was when the students were translating their own measurements into proportions close to Shaq's. They were so very amazed to see how big and tall they would be; it was nice to see the look of sheer wonder on their faces." This supports the premise that mathematics camps and providing preservice teachers with the opportunities to facilitate those camps is a positive move for teacher education programs.

### **Limitations and Future Research**

Though the current research did find some significant results and findings for improving self-efficacy in future teachers of mathematics, some limitations should be considered. First, it can be assumed that due to a small sample size, a significant increase in PMTE was not seen, but perhaps a longitudinal measure or experience in a longer program, such as student teaching, would help to increase college students' PMTE. Future research may consider measuring student teacher's mathematics teaching efficacy during a semester-long hands-on experience to determine whether self-efficacy may increase. Another limitation of the current study was due to the fact that only three of the participants were teacher education majors. Though the other two participants had completed mathematics courses at the university level and had had previous experience working with kids, they had limited pedagogical knowledge in the field of education which may have skewed the results for self-efficacy measures. Future research may seek to validate results of this study by only focusing on those with majors in the field of education and concentrations in mathematics. In addition, the camp was only one week and hence influence of the camp facilitation may be presumptuous, but the results do show a change. By participating in additional camps and activities scattered throughout the year may offer another way to extend additional support for them to experience and enjoy teaching and learning mathematics.

One of the facts not highlighted by the camp was mathematics content knowledge and the difficulties faced by college students in facilitating the mathematics content for the middle school students. A future area of research would be

investigating their pedagogical and content knowledge attitudes and perceptions as a result of facilitating a mathematics camp. Despite the small sample size and diverse sample of participants, results may provide those in the field of mathematics teacher education with another way to assist mathematics preservice teachers to improve their confidence and develop effective strategies for preparing to teach. In addition, college students participating in these experiences are more likely to make connections with other disciplines and thus may become more open to STEM fields.

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# A COMPARISON OF STANDARDS FOR TEACHERS OF ENGLISH LANGUAGE LEARNERS

**Lindsey Wash Vasquez**

Undergraduate Student, University of Mary Hardin Baylor

**Jodi Pilgrim, Ph.D.**

University of Mary Hardin Baylor

## Abstract

*Accountability for the improvement of educational outcomes for all students has helped close the gap between English Language Learners (ELLs) and English proficient students. One way classroom teachers address the needs of ELLs is through national and state established standards. An English as a Second Language (ESL) certificate or endorsement, based on an established set of standards, enables preservice and inservice teachers to obtain credentials to work with ELLs. The purpose of this article is to compare the Texas standards for teachers of ELLs to the national standards for teachers of ELLs, as one way of helping Educator Preparation Programs structure their coursework and content when addressing this population.*

Keywords: English language learners, standards, teacher certification

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English Language Learners (ELLs) are among the fastest growing population of students within the United States (Samson & Collins, 2012). They represent one of the minority groups of students who require special attention in order to meet their academic needs. With an increasing population of ELLs, teachers must continually be prepared to teach them and accommodate their English proficiency. Classroom instruction for ELLs varies, often depending on state laws and the proportion of ELLs in an area. Support for ELLs ranges from classrooms where all students receive bilingual/dual-language instruction to structured/sheltered English immersion classrooms to general education classrooms, where content instruction from the classroom teacher is supported by an English as a Second Language (ESL) teacher working with individual students (Samson & Collins, 2012). However, ELLs often lack proper identification, or they transition out of services prematurely, resulting in placement in a mainstream classroom, which does not provide appropriate language support (Samson & Collins, 2012). “Given the importance of language development for academic success, all classroom teachers with ELLs must understand the principles and best practices of supporting their unique needs” (p. 4). This statement is an important message for Educator Preparation Programs, since novice and preservice teachers require an understanding of best practices in working with ELLs from their first day in the classroom.

In order to teach these students effectively and meet their language needs, most states offer special certification for teachers. An ESL certificate or endorsement, based on an established set of standards, enables teachers to obtain credentials to work with ELLs. Most Educator Preparation Programs in Texas provide at least some foundational coursework for preservice teacher. These novice educators may receive certification through the Texas Examinations of Educator Standards (TEXES) program through the Texas Education Agency (TEA). Most states other than Texas use the PRAXIS English to Speakers of Other Languages certification through the Educational Testing Service (ETS). The purpose of this article is to compare the Texas standards for teachers of ELLs to the national standards for teachers of ELLs, as one way of helping Educator Preparation Programs structure their coursework and content when addressing this population.

### English Learners and Teacher Certification

According to The National Center for Education Statistics, 9.3% of students in public schools have been classified as ELL, or as students “who are learning English as a second or additional language” (Kena, et al., 2016, p. 327) with varying proficiency levels. Texas alone has 765,952 students classified as ELL, making up 15.5% of the public school population (Kena, et al., 2016, p. 327). These numbers reflect the students placed in assistive language programs, not the students who passed their proficiency exams but still struggle with academic language (Echevarria, 2017). The needs of ELLs vary and reflect multiple proficiency levels. In Texas, these proficiency levels are defined by the English Language Proficiency Standards, also known as the ELPS (Texas Education Agency, 2015). The push for differentiated instruction among all students should not fall short of those placed in language programs. To reach these students and be able to meet their language needs, teachers need preparation for all aspects of teaching ESL.

In Texas, many schools/districts require ESL certification for all teachers, regardless of the teaching assignment. The rationale for this practice reflects the abundance of ELLs in Texas and the need for preservice educators to understand pedagogy necessary to meet the needs of all learners. Texas teachers take an exam for certification purposes, as do many other state teacher preparation programs. In considering teacher preparation for teachers of ELLs, we wondered, “*How do Texas standards for teachers of ELLs compare to national standards for teachers of ELLs?*”

TESOL, or Teaching English to Speakers of Other Languages, is a national organization which promotes knowledge and skills related to the education of ELLs. TESOL is also the acronym that refers to the profession and the field itself. TESOL is not a school or a teacher-education program, and it is not an accrediting body for the evaluation of teachers or teacher education programs (Teaching English to Speakers of Other Languages, n.d). However, the organization promotes appropriate pedagogy related to certification for teaching ESL in U.S. public schools. Appropriate pedagogy reflects instruction for teaching students from any number of different backgrounds who live in an English-speaking country, but who learned a language other than English at birth (ETS, 2016). Students need to learn conversational English and literacy skills to fully integrate into public schools, to function socially, and to be competitive in the job market. Texas teachers seeking ESL certification take a test called the TExES English as a second language supplemental test, which assesses the “requisite knowledge and skills that an entry-level educator in this field in Texas public schools must possess” (TEA, 2015, p. 3). The TExES does not explicitly align with the TESOL, but the TExES manual cites TESOL journals and guidelines for further study. The state’s online manual includes the assessed standards as well as practice questions.

In other states across the nation, teachers receive ESL certification (and teacher certification) through the Praxis exam, called the PRAXIS English to Speakers of Other Languages (ESOL). The Educational Testing Service (ETS) designed the ESOL to measure basic linguistic and pedagogical knowledge within the context of teaching ESOL in the elementary or secondary setting. ETS aligned questions on the praxis with the TESOL/NCATE standards for the recognition of initial TESOL programs in p-12 ESL teacher education as developed by TESOL, Inc. (ETS, 2016).

### Methodology

The purpose of this research is to compare the Texas standards for teachers of ELLs to the national standards for teachers of ELLs. The research question is *How do Texas standards for teachers of ELLs compare to national standards for teachers of ELLs?* Data sources included standards and sample test questions from the PRAXIS exam and the Texas Examinations of Educator Standards (TExES). Since the actual exams are not available to outside sources, online study manuals, published by the tests’ creator, ETS, were examined. Qualitative analysis of these materials resulted in four major findings, which are described in the next section.

### Findings

Both the PRAXIS English to Speakers of Other Languages (ESOL) and TExES ESL certification exams prepare teachers to address different aspects of language learners, including language concepts, pedagogy, assessment, culture and professionalism. The exam questions are created based on the standards. The breakdown of these aspects differs between tests. The PRAXIS ESOL features four content categories: foundations of linguistics and language learning, planning, implementing, and managing instruction, assessment, and cultural and professional aspects of the job. Each of these content categories has been divided into principles with specific standards. The first content category, the foundations of linguistics and language learning, composes 40% of the examination through 48 questions. These 48 questions are divided into two sections of 20 and 28 questions. The first 20 items are answered through a listening section. The planning, implementing, and managing instruction category is 30% of the examination through 36 questions. Assessment and the cultural and professional aspects of the job each make up 15% with 18 questions. Test takers have a total of two hours to complete all 120 questions.

The TExES ESL exam consists of three broad domains, seven standards, and ten competencies. The first domain encompasses language concepts and language acquisition. The second includes ESL instruction and assessment. Foundations of ESL education, cultural awareness, and family and community involvement is the third domain. Domain one is 25% of the exam, with 20 questions. The second domain is 45% and 36 questions. Domain three is 30% with 24 questions. An allotted time of five hours is given to complete the total of 80 questions.

One notable difference between the exams is the presence of a listening section in the PRAXIS ESOL. Audio recordings of nonnative English speakers are played and the test taker is to correct their errors. During this section, a transcript of the speech is provided to the test taker. Within this listening section, there are two parts. Part A focuses on oral grammar and vocabulary. Part B emphasizes pronunciation. The audio in Part A is played only once, while Part B may be repeated a second time. The TExES does not include any form of listening or audio during the test. By having this audio section, the PRAXIS ESOL is asking test takers to be “familiar with the speech of nonnative speakers who are learning English” (Education Testing Service, 2016, p. 6). Since students within ESL programs will not be familiar with English or sound like native English speakers, this section is beneficial to the test takers. Teachers will need to be able to understand all of their students, including those who speak differently. This audio section on the exam is great practice for what will be encountered in a classroom of ELL.

Another contrast between the exams is the percentage allotted to the foundations of language. The PRAXIS contains 40% of the exam focused towards the foundations of linguistics and language learning. Within this content category, there are four subsections: linguistic theory, language and culture, second-language learning, and literacy. Linguistic theory focuses on phonetic transcription, morphology, syntax, grammar, and semantics. All of these things should be recognizable between different languages. Language and culture emphasizes “basic concepts of pragmatics and sociolinguistics” (Education Testing Service, 2016, p. 6) the value of English and its dialects, communication competence, and an ability to interact in social and academic language settings. Second-language learning refers to the research regarding language learning and the acquisition of language. This provides teachers with the knowledge of how students are capable of learning a second language. Finally, literacy encompasses the components of reading and writing, such as pronunciation, spelling, graphemes, morphemes, and oral language skills.

In contrast to PRAXIS, the language concepts and the knowledge of language acquisition necessary for teachers to know is only 25% of the TExES exam. Under this one domain, there are two standards and two competencies that direct the test takers’ knowledge. The first standard and competency emphasizes the nature of language the parts that contribute to language systems. Phonology, morphology, syntax, lexicon, semantics, discourse, and pragmatics are covered. Similar concepts of literacy development and the functions of language are also expected for mastery. The second standard and competency highlight the research of language acquisition, making note of theories, cognitive processes, the relationship between the first and second language, and the common difficulties that ELLs face. Although the content of these sections on the exams are similar, the proportion of the assessed material on the exams is not. The PRAXIS places more weight in

test takers needing to know this information. The title of this section on the PRAXIS highlights the importance of teacher knowledge regarding the foundations of the English language. The content reflects the importance of knowing about the building blocks of the English language on the part of the teacher.

An analysis of the wording of the standards and competencies indicated differences that reflect varied word choice and varied levels of thinking between the two exams. For example, some wording indicates knowledge-based questioning while other questions reflect higher level, application-based questions. The PRAXIS simply lists the specifications of what is needed to know while the TExES directs the language toward the ELL or the ESL classroom. For example, while the PRAXIS recognizes the “range of social and academic functions” (Education Testing Service, 2016, p. 6) required for proficiency, the TExES “uses this knowledge...to deliver instruction and promote ESL student’s English-language proficiency” (Texas Education Agency, 2015, p. 6). The TExES ensures that future teachers know how to apply the knowledge needed for this exam into a classroom of ELL. The PRAXIS does not mention anything regarding proficiency testing or the four domains in which they should be proficient: listening, speaking, reading, and writing. Competency 001 under Domain 1 of the TExES “understands the interrelatedness” of the skills required of students and “uses this understanding to develop...proficiency” (Texas Education Agency, 2015, p. 6).

A minor difference exists within the instruction and assessment concepts. The PRAXIS divides these ideas into two portions of the exam while the TExES combines it into one. The percentages of this information on the tests are equivalent, although there is a division of sections. Despite the small difference in the separation of concepts, the content of these ideas are very similar in both exams. Both highlight pedagogical skills required for teachers to effectively teach students, differentiated instruction that benefits students, and a basic knowledge of assessments and how to use them appropriately.

The final difference between the exams reflects the percentage of the exams emphasizing the professional and cultural aspects of being an ESL teacher. The PRAXIS allots 15% to this portion while the TExES allots 30%. The cultural and professional aspects of the job are defined within the PRAXIS as the cultural understanding, legal and ethical issues, the role of the ESL teacher, and the professional development teacher. Again, a difference in the language/wording exists between the tests. There is an emphasis placed in knowing and understanding the cultural differences of the student on the PRAXIS and an emphasis in knowing how these differences will affect the student and their learning progress on the TExES. Competency 009 highlights the importance of creating an “effective multicultural and multilingual learning environment” (Texas Education Agency, 2015, p. 11) that allows the students to feel safe and to learn in a positive environment. The TExES also places a greater emphasis on the teacher as an advocate for the ELL. While the PRAXIS mentions this in a few of the specifications of the role of the ESL teacher, the TExES directs Competency 010 to show teachers what specifically it means to serve as an advocate (Texas Education Agency, 2015, p. 12). Table 1 presents the major differences found between Texas state standards and national standards.

Table 1

*Differences between the PRAXIS and TExES*

	PRAXIS	TExES
Content	The PRAXIS contains four content categories: foundations of linguistics and language learning, planning, implementing, and managing instruction, assessment, and cultural and professional aspects of the job	The TExES contains three domains: language concepts and language acquisition, ESL instruction and assessment, and foundations of ESL education, cultural awareness, and family and community involvement
Percentages	<ul style="list-style-type: none"> <li>• Foundations of Linguistics and Language Learning: 40%</li> <li>• Planning, Implementing, and Managing Instruction: 30%</li> <li>• Assessment: 15%</li> <li>• Cultural and Professional Aspects of the Job: 15%</li> </ul>	<ul style="list-style-type: none"> <li>• Language Concepts and Language Acquisition: 25%</li> <li>• ESL Instruction and Assessment: 45%</li> <li>• Foundations of ESL Education, Cultural Awareness, and Family and Community Involvement: 30%</li> </ul>
Listening Section	The PRAXIS contains a two part, 20 question listening section.	The TExES does not contain a listening section.
Language/Wording	The PRAXIS uses language to specify the necessities for the exam.	The TExES uses language to emphasize the application of knowledge in the ESL classroom.

### Conclusions and Implications

According to Samson and Collins (2012), research suggests that preservice and practicing teachers need foundational knowledge in order to work effectively with ELLs. Teacher need to be prepared to attend to oral language development, support academic language, and to be culturally sensitive to the backgrounds of their students. They argue that “these areas of knowledge be purposefully and explicitly integrated into the preparation, certification, evaluation, and development of all teachers in the interest of improving outcomes for English language learners” (p. 2). In the current research, we found that both the Praxis and the TExES addressed standards related to this knowledge.

Overall, the knowledge required to pass both of the ESL certification exams is similar between the two assessments. The greatest differences include the presence of a listening section on the PRAXIS, the percentage breakdown of specific content, and the assessment language of the exam. With the large and continually growing population of ELLs, preservice teachers must be knowledgeable in and remain up-to-date on linguistic and pedagogical research in order to effectively teach their students.

One way that the PRAXIS surpasses the TExES in its requirement for teachers is through their listening section. This portion of the exam enables teachers to listen to different accents of speech. Within the classroom, teachers will have to understand students speaking with various accents. By doing so on the exam, teachers have shown practice and mastery of this skill. The TExES is preparing teachers well through their third domain. This section encompasses the foundations of ESL education, cultural awareness, and family and community involvement. By including all of this content, Texas is making teachers more aware of all aspects of ESL, rather than strictly the classroom implications. The TExES is also preparing teachers well through their use of active language that emphasizes the application of knowledge in the ESL classroom, rather than what needs to be known solely for the test.

“If we wish to see change in teacher preparation programs guidance at the federal level is essential as is the involvement of accrediting bodies and state agencies” (Samson & Collins, 2012, p. 21). While standards are available for Teachers of English Language Learners, most states do not require that teachers are certified to work with ELLs, even though most teachers are likely to have ELLs in their classrooms. Teacher preparation programs should consider providing knowledge and skills related to standards for all teachers.

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# INFLUENCE OF THE MANDATED TEXAS PUBLIC SCHOOLS' GRAPHING CALCULATOR IMPLEMENTATION IN EIGHTH-GRADE MATH ON TEACHING PRACTICES AS PERCEIVED BY EIGHTH- AND NINTH-GRADE MATH TEACHERS

**Dr. Kesha Teemer-Hill, Ed.D.**

Tarrant County Community College

**Freddie Titus, Ed.D.**

Lamar University

**Johnny O'Connor, Ph.D.**

Lamar University

## Abstract

*The purpose of this study was to explore the influence that the Texas public schools mandated graphing calculator implementation in eighth-grade math had on teaching practices as perceived by eighth-grade and ninth grade math teachers. We wanted to know how this state mandate influenced the teaching practices of eighth-grade math teachers in Texas and what challenges if any, the teachers experienced during the implementation process. The study included math teachers from a school district in North Texas. Findings indicated that teachers need continuous support and ongoing professional development with the use of a graphing calculator for instruction to ensure successful integration of the calculator into the mathematics classroom.*

Keywords: graphing calculator, eighth grade mathematics, academic achievement

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Whether students should be allowed to use a calculator in the mathematics classroom has been discussed for over four decades (Watters, 2015). In 2014, the discussion became a reality for 8th-grade math students and teachers in Texas, as the Texas Education Agency (TEA) (2014) mandated that all districts would integrate the use of a graphing calculator into their 8th-grade mathematics curriculum. The policy required all students to use graphing calculators on the eighth-grade Mathematics State of Texas Assessment of Academic Readiness (STAAR) assessment at the start of the 2014-2015 school year (Texas Education Agency, 2016).

Research has shown that integrating calculators into the mathematics classroom could have a positive impact on student achievement and motivation (Bottge, Grant, Stephens, & Rueda, 2010). When students are allowed to use calculators in the mathematics classroom their perceptions of mathematics could improve (Close, Oldham, Shiel, Dooley, & O'Leary, 2012). Lee and McDougall (2010) suggested that using calculators in the mathematics classroom could provide students with an opportunity to experience more success in mathematics and develop a deeper understanding of mathematics concepts. In

fact, calculator use in the mathematics classroom can increase students' confidence, motivation, and anticipation to learn mathematics concepts (Tan, Harji, & Lau, 2011).

However, implementing calculators into mathematics classrooms could cause stagnation in the students' development of mathematical concepts (Hunsaker, 1997). Using calculators could have the same negative implications as computation errors when used incorrectly in the teaching of mathematics (Lee & McDougall, 2010). Moreover, early use of the calculator can cause students to know a procedure for getting an answer but lack or miss the mathematical concepts learning objective and increase the levels of frustration and confusion amongst the students (Fital-Akelbek & Akelbek, 2013).

This study was designed to explore the influence that the state mandated calculator implementation in eighth-grade mathematics had on teaching practices as perceived by math teachers in one Texas school district. The research questions guiding this study were:

1. What influence did implementing calculators in eighth-grade mathematics have on teaching practices?
2. What challenges did teachers encounter when implementing calculators in eighth-grade mathematics?

### **Literature Review**

#### **Calculator Discussions in the 1970s**

Researchers began debating the topic of implementing calculators into the mathematics classroom in the 1970s (Watters, 2015). Bell (1975) found that calculators could help teachers determine conceptual gaps that may exist even when paper and pencil calculations seem to show mastery. However, without proper guidance, overuse of a calculator could lead students to view the calculator as a requirement and not as a tool. Therefore, teachers must be deliberate when implementing calculators into the curriculum because proper implementation could positively impact the curriculum and allow time for students to expand on the problem-solving component of mathematics (Gawronski & Coblenz, 1976).

#### **Calculator Discussions in the 1980s**

Wilf (1982) noted that in the 1980's the calculator conversation shifted to the collegiate level. The author suggested that the implementation of technology at the collegiate level in courses such as calculus could lead to a stronger focus on the mathematical concepts and less focus on the mechanics of the content. However, Miel (1980) suggested that improper implementation of the calculator could lead to more stress for the student and cause more harm than good in the classroom. Without proper guidance, students could use improper strategies or misinterpret the results from the calculator.

#### **Calculator Discussions in the 1990s**

By the 1990's, it was time for teachers to accept the fact that calculators would be a staple in the mathematics classroom (Henriksen, 1995). Borba (1995) purported that the implementation of technology in the mathematics classroom could create pedagogical challenges for math teachers. For successful implementation, the teacher must use more open-ended activities during instruction. Further, these activities could lead the students to generate questions that teachers are unable to answer. Borba suggested that while these questions may be uncomfortable for the teachers, this level of complexity in student learning is essential for sustained academic growth in mathematics.

#### **Calculator Discussions in the 21st Century**

Doerr and Zangor (2000) noted the importance of the teacher's role in ensuring that the calculator is implemented and used as a resource in the mathematics classroom. However, teachers' comfort and confidence level with the calculator has a significant impact on the seamless integration of the device into the classroom. Doerr and Zangor suggested that when teachers understand the limitations of the calculator and are flexible with its use in the classroom they can ensure that it does not become the authority source in the classroom.

Lee and McDougall (2010) found that calculators can have the same negative impact as computation errors when teachers inappropriately use them during instruction. Consequently, it closes the door for advancing students' conceptual understanding of mathematical concepts and increases the level of frustration and confusion amongst the students, due to the lack of an in-depth understanding of the content (Fital-Akelbek & Akelbek, 2013).

## Methodology

### Research Design

The research design of this study was a bounded phenomenological case study. A case study allowed the researchers to use a variety of data sources to explore the phenomenon within its context (Baxter & Jack, 2008). The shared phenomenon of this case study was the influences that the state-mandated calculator implementation in eighth-grade mathematics had on teaching practices. The study is classified as a bounded case study because the researchers worked within boundaries set by time and place (Creswell, 2013).

Creswell (2013) argued that social constructivists personally gather information to understand the perspective of the participants and their environment. The researchers obtain the views of the participants by utilizing open-ended questions to develop an awareness of the study. In this study, the researchers maintained an active collaboration with the participants while they were able to share their perspective of the mandated calculator implementation into eighth-grade mathematics. The researchers used open-ended questions called a guided protocol to gain a real understanding from the participants' perspectives.

### Participant Selection

Participants in this study taught eighth or ninth grade mathematics for at least three consecutive years. They were identified by their peers as model teachers by receiving Teacher of the Month or Teacher of the Year nominations. The study included 12 eighth and ninth grade teachers from one North Texas school district. Purposeful sampling ensured well-versed responses for this bounded phenomenological case study (Creswell, 2013). The researchers met with the participants twice. To generate dialog and creativity, the researchers initially met with the participants in a small focus group setting with two to four teachers in each group. There were four small focus group interviews. After each focus group meeting, the researchers then conducted one-on-one phone interviews with each participant to explore the research questions further.

### Data Collection

Creswell (2013) recommended using focus groups when the researcher is interviewing three or more participants. The researchers placed the twelve participants into four separate focus groups based on their proximity to the primary research campus. The researchers scheduled the discussion groups at a convenient time for the members and allotted enough time for each group to complete the interview process. The group setting provided an opportunity for the participants to engage in a meaningful group discussion about the use of graphing calculators in the eighth-grade mathematics curriculum. Also, participants discussed questions from the guided protocol and their experiences with the state calculator mandate. After each group interview, the researcher contacted each participant by phone to explore their answers to the research questions further.

### Treatment of Data

Creating categories is a useful strategy for organizing data (Creswell, 2013). To properly organized and analyze the data the researchers transcribed field notes to a Microsoft Word document providing an exact typed replication of the interviews. After carefully reading the transcripts the participants' responses were arranged into categories by common themes identified by the researchers using the data analysis spiral by Creswell (2013). The coding process helped the researchers to generate a way to include multiple perspectives from the participants. The researchers stored the data on a password-protected computer.

### Provisions of Trustworthiness

To ensure the trustworthiness of the study, the researchers piloted the guided protocol, used triangulation of interviews, and conducted member checking (Creswell, 2013). To triangulate the data, the researchers justified the themes by analyzing the facts found from the data. School artifacts, websites, and field notes contributed to the triangulation of the data. The researchers utilized member checking by allowing participants to review their transcripts for accuracy. Additionally, the researchers included all information in the findings, even when it was contradictory to the themes. The researchers also clarified personal bias in an epoche to maintain trustworthiness of the study.

The epoche detailed the researchers' biases. The researchers acknowledged that as mathematics teachers, their personal feelings, interests, and opinions influenced the choice to study this topic. Additionally, as math teachers, the researchers have personal experiences with student struggles and successes with calculator implementation. However, the researchers noted that they must not allow their prejudices to influence the study. The researchers also maintained that they had, to the best of their ability, set their biases aside to gain proper perspectives from the participants of the study.

### Findings and Analysis of Data

The purpose of this study was to explore the influence that the state mandated calculator implementation in eighth-grade mathematics had on teaching practices as perceived by math teachers in one Texas school district. The participants in this study were six eighth-grade math teachers and six ninth-grade math teachers. These teachers were from one school district in North Texas. The teachers selected met the participant criteria detailed in the methodology section. What follows are the findings of the two research questions presented in this paper.

#### Research Question One

Research question one explored the influence that implementing calculators in eighth-grade mathematics had on teaching practices. Teachers discussed any change they made to their delivery of the concepts because of the mandate for students to utilize the calculator. Additionally, the teachers discussed the influence that the calculator implementation had on the written mathematics curriculum. Findings for this research question included the following:

- teachers were able to move at a faster pace;
- teachers increased the number of higher order thinking questions; and
- eighth-grade curriculum changes were guided more by the TEKS than calculators.

**Teachers were able to move at a faster pace.** According to the teachers, the calculator mandate allowed them to move at a faster pace with their students. The eighth-grade teachers noted more change in their delivery of the concepts than the ninth-grade teachers. Several of the eighth-grade teachers mentioned that they saw a change in their delivery of their grade level content. They discussed how they were no longer focusing on the computation, or the skill practice, before practicing the eighth-grade concepts. One eighth grade teacher stated that "It expedites some of our lessons, in terms of the computation; they're not getting tripped up on basic computation."

One teacher stated that she no longer uses the paper and pencil method to teach certain eighth-grade concepts because the students use the calculator. The teachers said they also noticed that they were no longer avoiding certain number sets because there were fewer concerns with issues that may arise due to computation errors. One teacher mentioned "I feel like we get further, again because of time...we have more time to spend on those higher-level concepts compared to what we did before." Another chimed in:

We can get a little further into it, deeper in to it, because we're not taking out, even if it's 10 minutes, to teach them how to plug something in the calculator. We don't have to take that 10 minutes anymore.

**Teachers increased the number of higher order thinking questions.** Both the eighth and ninth grade teachers emphasized they were able to increase the number of higher order thinking questions that are used on a test and in the classroom since the implementation of the calculator in eighth-grade mathematics. One teacher said, “I have always left the Pre-AP extension questions, as bonus, on my on-level test, but I noticed that more students are attempting the bonus questions now that they get to use one.” The teachers attributed the students’ attempt at these higher-order thinking questions to their ability to use the calculator on the assessment.

All of the teachers talked about how they were able to have more conceptual conversations about their mathematics content now that the students were no longer concerned with computation errors. The participants also noticed an ability to have more in-class discussions about the “why” behind the mathematics than before the implementation of the calculator. One teacher stated that he no longer has to focus on the arithmetic with some concepts. He said, “We actually have time to discuss the “why.”” In addition, the teachers talked about their ability to use more relevant real-world questions and activities now that they were not as concerned with students getting lost in the computation. One teachers elaborated:

Some things I feel like we never went real deep into them because we couldn’t get past the computation part of it. And now that we can, I feel like we can apply to more real-life situations, with more real-life numbers, they don’t have to work out nicely every time. Which is what you would see if you were doing math outside of the classroom, anyway. So, I think in that sense, it helped me be more real world oriented.

**Eighth grade curriculum changes led more by TEKS than calculator.** The ninth-grade teachers did not notice a change in their curriculum because of the eighth-grade implementation of the calculator. There was a discussion regarding an increase in the rigor seen in the ninth-grade content earlier in the year, but there was no consensus on whether this increase in rigor was due to the eighth-grade implementation of the calculator or if it was teacher initiated.

However, in eighth grade, the teachers noticed a significant change in their curriculum at the time of the mandated calculator implementation. The teachers also noted that the mandated calculator implementation was done simultaneously with the implementation of the new eighth-grade math Texas Essentials of Knowledge and Skills, or TEKS. One of the eighth-grade teachers stated, “The calculator makes the problems more doable, but the TEKS forced the changed in curriculum more than the calculator.”

## Research Question Two

Research question two investigated the challenges that implementing calculators in eighth-grade mathematics had on students. The teachers discussed the challenges they faced when applying the calculator into the mathematics classroom. There was also discussion regarding the grade level content that suffered the most from the calculator implementation. This research question also explored the negative influence that implementing the calculator in eighth-grade mathematics had on students across their core curriculum. Findings for this research question included the following:

- teachers felt ill-prepared for the implementation;
- decreased understanding of mathematic concepts and;
- negative influence on science.

**Teachers felt ill-prepared for the implementation.** The teachers agreed that they did not receive any training on how to properly implement the calculator into the mathematics classroom. They utilized online resources to train themselves on some of the functions of the device. One teacher exclaimed “Thank God for Google! Without it, there were many times that would not have been able to help my students. Google taught me a lot! I had to use it to for a lot of the functions on the calculator.” Another teacher expressed concern regarding who would manage the distribution and upkeep of the calculators. She worried about storing them, tracking them, handling damaged equipment, and what the students would use at home if they did not have access to the calculator. The teachers agreed that proper training on how to properly implement the calculator into the mathematics classroom could have reduced some of the struggles they experienced with the implementation.

**Decreased understanding of mathematic concepts.** The teachers discussed several math topics that they felt the use of a calculator would have an adverse impact. More precisely the content they discussed included scientific notation, graphing, and fractions. Several of the teachers noted the negative influence of the use of a calculator with scientific notation. Particularly, one teacher said:

The kids don't even try to move the decimal; they go straight to the calculator. Then they get confused when the "E" pops in there. When they ask me, I show them how to move the decimal and they always say, "Oh, that was easy!"

There was also discussion regarding the diminishing understanding of the power of ten as it relates to scientific notation. Teachers have seen a misconception reinforced by calculator when graphing. If the student does not follow the proper steps when using the calculator to represent discrete the data, there is the potential of displaying the discrete data as continuous data. The teachers noted that students already struggle with distinguishing between continuous and discrete data. There was also discussion regarding a potentially adverse influence when working with fractions. One teacher said, "Since the kids have the calculators they convert all the fractions to decimals. They don't even try to work with fractions." The others agreed and expressed concern because when fractions have algebraic expressions as numerators, this will not be an efficient strategy.

**Negative influence on science.** The reduction in computation practice in the mathematics classroom has negatively affected the students in their eighth-grade science classes. One of the teachers noted that her science colleagues expressed frustration with the mandated calculator implementation. She said the science teachers were concerned because all eighth-grade math students received a calculator but only students with the calculator accommodation could use the device in their science class. One of the participants said:

I feel bad for the science teachers. They have to convert fractions to decimals in science but we don't teach that anymore, directly anyway. So, the kids who don't get a calculator could potentially fail their Science STAAR test for not understanding a math skill.

### Conclusions, Implications, and Recommendations

#### Conclusions and Implications

Research question one examined the influence that calculators had on teaching practices. The findings suggested that implementing the calculator had a positive impact on teaching practices by allowing teachers more time to focus on helping students develop a conceptual understanding of the mathematic concepts. The reduction in computation time allowed the teachers to move at a faster pace and adequately address more of the state driven curriculum. The teachers were also able to focus on helping students develop conceptual understanding of the mathematic concepts since they were no longer focusing on the skill practice of the concept. Students were engaging more frequently in classroom conversations that were started from higher order thinking questions. The increase in the use of higher order thinking questions helped the students develop their conceptual understanding of the mathematic concepts. The teachers in this study said they were able to explore more conceptual development opportunities due to the reduction of students in need of skill practice. The findings are consistent with Bouck (2009), who suggested that the reduction in student computation time allowed could present more learning opportunities for students.

Research question two examined the challenges that came about when implementing calculators in eighth-grade mathematics. The findings suggested several challenges with implementing the calculator. These included a lack of training for teachers, the student over-reliance on the device, and the potential of reinforcing student misconceptions when using the calculator. The teachers found themselves using the Internet to find answers to questions they had regarding the functionality of the calculators. Not knowing how to carry out a particular function on the calculator made the teachers uncomfortable when trying to help the students with the parts of the calculator that they were unsure of or did not understand. Not all mathematic problems can be solved by using a calculator; some students were baffled and confused when this would occur. Improper use of a calculator could lead to the development and reinforcement of misconceptions of math concept students are learning. The findings indicated that teachers must receive training on how to integrate calculators into the mathematics

curriculum to prevent the challenges cited. Kersaint et al. (2013) found that it would not be academically beneficial for students if teachers lack the proper training on how to integrate technology into the classroom.

The study suggests that in order to implement successful use of calculators in the math classroom, administrators must provide teachers continuous content specific training on how to integrate the calculator, the appropriateness of its use, and the adverse influences on students learning. Building on the strengths and understanding the weaknesses or challenges of calculators within the classroom is important for the quality use of this technology in the classroom.

### **Recommendations for Future Research**

This study focused only on mathematics teachers. Suggestions for future research should include how science teachers perceive the implementation of calculators into eighth-grade mathematics; the impact the use of calculators has on student learning, achievement and the Mathematics State of Texas Assessment of Academic Readiness (STAAR) eighth-grade test results; and a comparative analysis of student responses by type of STAAR test questions before and after the mandate to determine if they are the same or different. Future studies might determine if the use of the calculator implementation resulted in more rigorous conceptual approaches to questions on the STAAR test.

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# SUPPORTING AND SUSTAINING THE 21<sup>ST</sup> CENTURY EDUCATOR: THE UNINTENDED BENEFIT OF THE NEW TEACHER ACADEMY

**Sarah McMahan, Ph.D.**

Texas Woman's University

**Rebecca R. Fredrickson, Ed.D.**

Texas Woman's University

**Karen Dunlap, Ed.D.**

Texas Woman's University

**Gina Anderson, Ed.D.**

Texas Woman's University

## Abstract

*The enrollment in Educator Preparation Programs (EPPs) across the nation has declined by about ten percent, and there is a projected need for more than 1 million new teachers over the next ten years (Barth, Dillon, Hull, & Higgins, 2016). As a result of this data, university EPPs are urged to create sustainable initiatives to recruit and retain teachers to meet the needs of a diverse student population. In response to this need of creating sustainable initiatives to support beginning teachers a New Teacher Academy was formed. The New Teacher Academy serves a bridge during the transition between preservice and inservice teaching. The implementation of such a program served as (1) a catalyst for professional learning and support once the new graduates left the confines of the university classroom, and (2) an opportunity to recruit recent graduates into graduate level programs.*

Keywords: retention, faculty support of beginning teachers, recruitment for graduate programs

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A common national concern among school districts, policy makers, and teacher education programs is the high rate of teacher turnover despite multiple efforts to address the situation. Since the early 1990's, researchers have noted that over 50% of beginning teachers leave the profession within the first five years (Luekens, Lyter, Fox & Chandler, 2004; Ingersoll & Smith, 2004; Ingersoll, 2012; Ingersoll, Merrill, & Stuckey, 2014). The National Commission on Teaching and America's Future (NCTAF) (2007) reports that teacher attrition in urban districts is over 20 percent, which is sometimes larger than the student dropout rate. These alarming numbers continue to concern researchers, teacher educators, communities and citizens. Furthermore, mentoring and induction programs have been created to support beginning teachers (Carver & Feiman-Nemser, 2008). Mentoring is considered a critical component in induction programs (Strong, 2009). In an attempt to positively influence retention rates among beginning educators, many school districts across the United States have implemented mentoring programs created specifically for teachers in their first

five years of the profession (Kelly, 2004; Parker, Ndoye, & Scott, 2009). Studies suggest that mentoring beginning teachers positively influences retention; therefore, support and guidance of the newly graduated teacher candidate may also have a substantial impact on the transition from preservice to inservice teacher (McMahan, Dunlap, & Fredrickson, 2017).

Over the many decades, induction programs have been reconfigured to assist, support and encourage beginning teachers to continue in the profession. Indeed, to “fix” the teacher turnover problem some policy makers, (such as those in the state of Texas), have required/mandated that novice teacher mentoring programs be created as a viable solution (Jimerson, Choate, & Dietz, 2015; Ensign & Woods, 2016). Texas Beginning Educator Support System (TxBESS) and Beginning Teacher Induction and Mentoring (BTIM) are such initiatives supported by the Texas State Board for Educator Certification (SBEC). TxBESS is “designed to provide systemic support for novice teachers in their first and second years as they enter into the classroom. Supporting beginning teachers assists in reducing turnover and a more experienced, better-qualified public school teaching staff. Beginning teachers who receive TxBESS support appear to attain greater professional expertise more quickly than unsupported novices in the field. TxBESS has also been shown to lead to higher academic achievement among our Texas students” (Hutto Independent School District, 2016).

While effective mentoring programs help curtail the high attrition rates of new teachers, they must not be considered the sole support mechanism for new educators. Teacher educator preparation programs around the United States should consider restructuring and implementing new practices to better prepare 21<sup>st</sup> century teachers (Potter, Hollas, & Coyne, 2015). Focused efforts such as continuous course refinement to align with TEA, INTASC and TPESS implementing professional development schools, adding mentoring programs, and implementing best practices in student teaching experiences are examples of strategies/initiatives that have proven effective in better training beginning teachers for sustainability in schools (McMahan & Piro, 2013).

While all teacher education preparation programs are committed to implementing new measures to assist preparing teachers, many have not yet examined the potential impact supportive mentoring may have on new educators who have yet to step foot in their own classrooms. The responsibility for such guidance in this scenario, therefore, falls upon the school district which hires the new educator. It should be noted this structure may be beneficial and meaningful if novice teachers are mentored by veteran educators on their campus. However, if this is not the case, then a hole in the pipeline exists when teacher education preparation programs do not offer mentoring and coaching resources to support recent graduates as they transition into their first year of teaching.

This conceptual paper details one university’s attempt to aid recent graduates as they transitioned from student teaching into their first teaching position. Through the development and implementation of a New Teacher Academy, the university educator preparation program (EPP) sought ways to support recent graduates as they began their first year of teaching.

### Literature

The existing body of literature focused on the need for additional training of novice educators is rich (Zeichner, 2010; McMahan & Piro, 2013). New programs, initiatives, and strategies constantly strive to find the magic that will ensure novice educators succeed and remain in the classroom (Darling-Hammond, 2006; McMahan & Garza, 2016). Mentoring has been postulated as a resource to assist new teachers as they enter their classrooms (Boogren, 2015; Ensign & Woods, 2016). Building on this, a two-pronged mentoring approach includes (1) having education preparation faculty develop working relationships with preservice teachers, and (2) maintaining that faculty mentoring relationship into the introductory teaching years through professional development opportunities.

In the past thirty years, many programs and initiatives have been created to support beginning teachers. All of these program and initiatives focus on reducing the attrition rates among beginning educators. However, these initiatives are often poised as the sole responsibility of the school and school district; no longer that of an educator preparation

program (Clandinin, et al., 2015). One universities Educator Preparation Program (EPP) solution was to create, develop and implement a New Teacher Academy. The New Teacher Academy was established to provide tailored professional development opportunities for recent graduates embarking on their first year of teaching in an effort to facilitate the transition period that exists between university preparation and actual school district employment (McMahan, Dunlap, & Fredrickson, 2017). Continued teacher education faculty support during this time could offer guidance and expertise to beginning teachers through a supportive role before they are placed under the evaluative eye of a principal overseeing the process.

Darling-Hammond, Wei, and Johnson (2009) assert that “teacher effectiveness is enhanced when they have many opportunities to learn (p.631). Quality professional learning experiences allow teachers to think about what they are learning through hands-on, authentic activities where they can practice and reflect over time. Additionally, “faculty who serve as mentors set the course for professional learning through the modeling of setting goals and continually seeking growth opportunities” (McMahan, Dunlap, & Fredrickson, 2017, p.6). Research by Hathaway, Nagda, & Gregerman (2002) suggests that the more engaged students are in the undergraduate experience, the more likely they will look into furthering their depth of knowledge by returning to graduate school. Furthermore, that is, the interactions and experiences students have at an institution have a stronger influence on their pursuit of graduate education than do their incoming background characteristics (Ethington & Smart, 1986). Therefore, engaging teacher education faculty in mentoring relationships with recent graduates coupled with providing meaningful learning opportunities post-graduation can have positive benefits for the university as well. In the sections below, the authors address how the implementation of a New Teacher Academy positively impacted enrollment in graduate school at the institution.

#### **NTA’s Initial Run: A Pilot**

The New Teacher Academy was initially launched in summer 2014 as an additional opportunity to support recent teacher education graduates as they transitioned into their first year of teaching. This first summer edition of the New Teacher Academy served as a pilot event to determine if recent teacher education graduates would return to campus for professional learning. The inaugural 12 attendees (all graduated from this university’s program in spring 2014) participated in a free, half-day event. Nine of the twelve participants had obtained a teaching contract before participating in New Teacher Academy. There were 11 females and 1 male participant. Ten participants identified as Caucasian and two participants identified as Hispanic. It should be noted that faculty did not receive final approval for New Teacher Academy’s existence until two weeks prior to the event date; hence, the small number of participants. The first opened with an address given by an alumnus who had been recognized as Teacher of the Year for her district in her first year of teaching. This session was followed by three 45 minute periods of professional development focused on technology integration, classroom management strategies, and proven approaches to engage English Language Learners (ELLs) in the classroom. These tailored session topics were derived from the institution’s previous years’ Principal Satisfaction Survey Results. Each time slot was facilitated by Teacher Education Faculty members who had research and/or experience in the targeted topics. The event was free of charge for participants who for their attendance earned 4 hours of Continuing Professional Education (CPE) credits. Faculty organizers secured donations for light snacks, beverages and materials needed for the New Teacher Academy. Operating under short notice, various university components donated such items as pens, bags, university-logo promotional materials, light snacks, and folders for the event. At the conclusion of the half-day professional learning experience, participants were granted certificates noting hours of CPE credit earned and asked to complete an evaluation survey of the days’ activities. The survey included questions related to the session topics, ways to improve the event, and self-perceptions of their preparedness to enter into their own classrooms as a result of any new ideas/strategies learned.

After the event, the session organizers carefully combed the end of event evaluation survey from the participants and analyzed for future planning purposes. Survey data from the event, revealed that participants wanted more “hands-on” sessions in which they could make things that they could then “take with them to their classroom.” The participants noted that the session that provided the most useful information was the classroom management one,

where they learned different ideas and classroom management techniques. Additionally, the technology session provided useful technology apps to use with students in their own classroom. The participants noted they would like “actual practicing teachers” to facilitate the sessions. This would allow the participants to “see what they did in their own classroom.” After a month into the start of the 2014-2015 academic year, the researchers followed up via email communication with New Teacher Academy participants as a means of providing continued vested interest and support as they began their school year. This email follow-up continued throughout the 2014-2015 academic year.

One unintended outcome of the pilot years of the New Teacher Academy was that it sparked interest in pursuing graduate school in two of the participants. Once the researchers learned of these former participants’ interest in Graduate education, they began to share information about extending their professional learning through the Masters of Education in Curriculum and Instruction and Masters of Education in Special Education graduate programs. While these two individuals (one male and one female), had not planned to enter graduate school in the first semester of their teaching job, it did facilitate the process of these individuals completing the necessary paperwork and applying to Graduate School at this institution (which they did) and are currently on track to complete their Master of Education in Teaching, Learning, and Curriculum.

### NTA Year Two

Armed with the pilot data from 2014 New Teacher Academy, planning began for the 2015 NTA. Unlike the pilot year, the planning for the 2015 NTA involved forming a New Teacher Academy planning committee encompassing representatives from the university marketing team, members of the graduate school admissions team, and other interested TWU faculty members. During the early planning meetings, the university buzz was about recruiting more graduate students into programs. Armed with this knowledge, information about recruiting for graduate school was incorporated into the activities and a session in the 2015 New Teacher Academy. Using the information gained from the attendees of the pilot year New Teacher Academy and the Teacher Preparation Effectiveness Survey of First Year Teachers data, the 2015 version of the New Teacher Academy was facilitated by university professors and clinical partners (teachers and administrators in area districts). Unlike the pilot year, the 2<sup>nd</sup> year of New Teacher Academy included an expanded day in which participants attended more sessions, were provided lunch that was donated by area businesses, and earned 6 hours of CPE credits. During the summer of 2015, forty-five participants (over double participants than in the pilot year) attended the New Teacher Academy and participated in sessions focused on topics that previous 2014 data had demonstrated were of most importance to new teachers:

- Classroom Engagement;
- Classroom Management;
- Differentiated Instruction;
- Technology Integration; and
- Working with English Language Learners

These semi-structured sessions allowed recent teacher education graduates/new teachers to embark on a close professional mentoring relationship with clinicians and professors. Additionally, a working luncheon was presented by the Dean of the Graduate School on the importance returning for Graduate School to assist them in their first year in the classroom.

Data collected from participants in the 2015 New Teacher Academy suggested that faculty support and continued professional development opportunities during the transition time of preservice to inservice was valuable in terms of support and morale during the first year of teaching. Moreover, the data indicated that the event encouraged them to consider attending Graduate School. One participant said that discussing Graduate School created more questions than answers: “Next year have more [information] on Graduate School, like how many hours you have to take.” Furthermore, twenty-two participants agreed that they would be pursuing Graduate School at the institution in the 2016 academic year. Two of the participants, who were awarded a \$500 graduate scholarship award at the New Teacher

Academy, were planning to enroll into the Department of Teacher Education's master's program during the summer 2016 semester.

### **Implications**

Today's educational environment will continue to battle the high levels of attrition for beginning teachers. Supporting new teachers is of paramount importance to university based EPPs as well as school districts. Induction activities, such initiatives like New Teacher Academy, not only support beginning teachers in their professional learning journey, they also have unintended benefits that can be helpful to universities that are challenged to increase enrollment in graduate level programs. As noted in this paper, recruitment efforts for graduate level education start immediately following the undergraduate experience. The authors postulate that beginning a graduate level program during the early years of teaching further support beginning teachers and ultimately might assist in efforts to decrease the high turnover rate of beginning teachers.

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# ONLINE LITERATURE CIRCLES: DEVELOPING CULTURALLY RESPONSIVE PRESERVICE TEACHERS

**Emily Reeves, Ph.D.**

Midwestern State University

**Daphney L. Curry, Ph.D.**

Midwestern State University

**Christina McIntyre, Ph.D.**

Midwestern State University

**Nicole Anderson**

Preservice Teacher, Midwestern State University

## Abstract

*The purpose of this research is to explore the effects of literature circles on teacher efficacy, empathy, and professional responsibility. An overwhelming number of preservice teachers lack the confidence in their ability to teach children with circumstance different from their own. Teacher educators have a responsibility to prepare preservice teachers with the tools they need to teach children with varying backgrounds. This research is designed to facilitate a personal and professional connection to critical issues discussed in class that are relevant to today's children and families using online literature circles to promote discussion, reflection, and culturally responsive preservice teachers.*

Keywords: culturally responsive, preservice teachers, literature circles

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According to Covington and Beery (as cited in Alderman, 2004), schools not only have the responsibility for student learning but also of cultivating student's motivation to learn. Teachers must foster a high level of confidence and achievement for their students and provide them with the encouragement they need to believe in themselves; without an increase in teacher competence and confidence, neither will prosper. A positive classroom climate is critical in increasing student motivation and achievement. If students are to adopt the goals that lead to academic success, they must have access to environments in which everyone is supported and treated with respect and fairness (Alderman, 2004). When teachers are encouraged to have an empathic mindset, they help to foster and promote a greater sense of trust and belonging in their students (McBride, 2016). Teachers with low efficacy or those who lack the ability to connect with students who are experiencing difficult circumstances are less likely to create the environments that lead to higher levels of motivation and achievement. In fact, a teacher's sense of efficacy is an excellent predictor of future student success (Alderman, 2004). To this end, teacher educators and educator preparation providers (EPPs) have a responsibility to help prepare their preservice teachers with the tools to boost their efficacy so they are able to meet the needs of children with diverse backgrounds and/or challenging life circumstances. It is imperative that the training and experiences preservice teachers receive in their programs address teaching students of diverse cultures and backgrounds different from their own.

Seminal work conducted by researchers like Bandura (1989), Woolfolk and Hoy (1990) highlight the importance of high efficacy among teachers. Not only should teachers model self-efficacy, but how they feel about their ability to teach directly impacts students on a multitude of levels such as social-emotional intelligence, academic success, and student self-efficacy. It is clear that teachers plagued with self-doubt and low efficacy are unlikely to be up to the task of addressing the diverse needs of students or helping to motivate their low-achieving students (Tollefson, 2000) or those who might be experiencing difficult situations.

An understanding of diverse student populations and empathy for students dealing with difficult life circumstances that future teachers will encounter is important for identifying and utilizing strategies to meet those diverse needs. Hence, the following questions are an important focus for exploration: *How much empathy do preservice teachers have for children and families different from themselves? And, how do they feel about their ability to teach children different from themselves?* Therefore, a project was implemented in a required education course designed to connect preservice teachers to the critical issues discussed in class to their own personal lives and responsibilities as future educators. Consequently, two questions emerged from that project that frame this study. First, what types of responses and attitudes will result from online literature circles using young adult novels which focus on critical issues facing children and families in today's society? Secondly, will using contemporary, realistic, young adult fiction, featuring relatable, diverse, young main characters experiencing challenges, help preservice teachers develop a sense of empathy, professional responsibility, and teacher efficacy?

### Literature Review

The purpose of this research is to explore the effects of literature circles on teacher efficacy, empathy, and professional responsibility. An overwhelming number of preservice teachers lack the confidence in their ability to teach children with circumstances different from their own. Alderman (2004) calls this phenomenon a lack of teacher efficacy which she defines as, "the extent to which teachers believe that they have the capacity to affect student performance" (p. 184). Marshall (2006) suggests that teacher education programs include explicit discussions regarding identity, culture, and the way these intersect with the schooling process, as well as experiential learning in the communities in which preservice teachers will likely serve. At its core, multicultural education is that which seeks to create multicultural competence in individuals (Bennett, 2001). This requires a reconciliation with the self (Banks, 1996), demanding individuals in all groups to see past their own perspectives. Noddings (1992) stresses the importance of the teacher's role in teaching children to be the "recipients of care" (p. 108); children that have not learned to do this are at risk of failure. Teacher educators have a responsibility to prepare preservice teachers with the tools they need to connect with and effectively teach children with circumstances different from their own.

Meyers (1995) also emphasizes the role collaboration plays in facilitating teachers' understanding of student attitudes and problems, and gains in long term academic achievement. Online communities (e.g. threaded discussion forums), "have the potential to alter the way new teachers communicate with one another (peer support) as well as with other professionals (collaborative consultation)" (DeWert, Babinski, & Jones, 2003, p.312), and provide an opportunity for discussion and reflection of critical issues related to student achievement. Because communication can occur at any time, advancing technologies (e.g. web communities, email) offer unique opportunities for creating supportive learning environments.

### Study Design

This research was designed to facilitate a personal and professional connection to critical issues discussed in class that are relevant to today's children and families. The following research questions framed this study: (1) What type of responses and attitudes will result from online literature circles using realistic fiction? (2) Will using realistic fiction help preservice teachers develop a sense of empathy, professional responsibility, and teacher efficacy? The objectives of this study were to: (a) explore the attitudes of preservice teachers regarding critical issues facing children and families in today's society; (b) help preservice teachers connect to critical issues involving children and families in today's society through the

use of realistic fiction; and (c) determine whether the use of realistic fiction and online literature circles will develop a sense of empathy, professional responsibility, and teacher efficacy in preservice teachers.

Participants were provided a detailed outline of expectations for the online literature circles (See Appendix A). Two weeks into the project, the following additional instructions were given to each group for clarity.

Remember to respond to each other often and in a conversational type dialogue. It should read like you are having a face-to-face conversation. Please remember to pull in your own personal experience as it relates to the issues presented in the book, school, home, etc... Also, be sure to include how your book relates to your issue and the children and families you will later serve. Remember this is not a regurgitation of each chapter.

Class discussions and reflective thinking activities related to both professional and personal responsibilities of educators provided the catalyst for the project. Several critical issues guided the selection of novels for the project. These included abuse, death of a parent, peer pressure, and similar concerns (See Appendix B).

### Participants

Participants selected for this study were preservice teachers seeking elementary, middle school, or high school teacher certification. All participants were enrolled in a language arts method course and in their last year of teacher preparation. All research activities (online literature circles, reflective journals, and discussion posts) were required components of the language arts course. All enrolled students were eligible to participate and/or decline with no penalty; however, all students were required to participate in the online literature circles and reflective discussion assignments that were required of all students enrolled.

### Data Collection and Analysis

Two data sources were used for this project, transcripts of online literature discussions and individual reflective journals. A total of 165 discussions and journal entries were used in the initial data analysis. Eventually, 71 entries were discarded because they contained only regurgitations of the novel even after the additional instructions were given. In the end, 94 discussion entries and journal reflections were analyzed. A thorough analysis of the data was ensured by examining each entry multiple times to uncover recurring themes, categories, and patterns. As the analysis of the data was conducted, eight categories emerged: *personal reflections/experiences-positive*, *personal reflections/experiences-negative*, *empathy*, *blame or judgment*, *professional responsibility*, *self-doubt*, *teacher efficacy*, and *personal responsibility*.

Entries were coded as *personal reflections/experiences-positive* if the author identified with the victim or person portrayed as having a high moral character. Likewise, entries were coded as *personal reflections/experiences-negative*, if the author identified with the individual portrayed as causing harm or making inappropriate choices. The following table features these two codes with corresponding representative quotes.

Table 1  
*Personal Reflections/Experiences-Positive & Personal Reflections/Experiences-Negative Codes with Illustrative Quotes*

Personal Reflection/Experiences-Positive	Personal Reflection/Experiences-Negative
<p>“I guess I don’t understand about the lazy moms and dads. My dad left the house by 5am and most of the time we didn’t see him until dark. He worked on the railroad, farmed, raised cattle so he was always busy. My mom stayed home, but our house was spotless. Our cars were always clean, everything was ironed, we had homemade supper every night, and a garden when we were young. We had hard times, but we always worked. My husband and I keep the same work ethic. Being poor doesn’t mean you have to be lazy and dirty. Poor Beatrice! “</p>	<p>“Hey guys. When you all were in school did you notice an atmosphere after a fight? I can. There are always the kids that try to egg on the fight kinda like Garrett. You guys would not guess this but I was a big bully in school. I would pick on people and start stuff between people. Well I guess I grew up and put it all behind me. Come to think about it, I didn’t have many friends and the teachers labeled me the trouble maker.”</p>

In order for an entry to be coded *empathy*, the entry had to show evidence of the author’s ability to identify with individuals dealing with negative life outcomes. For the purpose of this project, “empathy” will be defined as, “the ability to identify oneself mentally with a person or thing and so understand his feelings or its meaning” (American Oxford Dictionary, 2015). Entries were coded as *blame or judgment* if there was evidence of the author forming a negative opinion and assigning blame to another individual because of their life circumstances. The following table features these two codes with corresponding representative quotes.

Table 2  
*Empathy & Blame/Judgement Codes with Illustrative Quotes*

Empathy	Blame/Judgment
<p>“I felt bad for Beatrice. Coming from a middle-class background, it was hard for me to relate to their situation at first. Hoot helped me see another point of view. I can imagine how hard it was for Beatrice growing up in poverty. However, it is hard for me to relate to the lazy father figure. My father worked from sun-up to sun-down. I will need to think about the children I will teach. Sometimes it is hard to wear the other shoe.”</p>	<p>“Any who, what kind of parent doesn’t know that their child is not at home in bed and is crashing out at goodness knows whose house? My middle little girl is 18 years old, and I still check in on her before I go to bed. Also, if I get up in the night to go to the bathroom or something, I make the rounds and check in on all the kids. I can’t even imagine what kind of people Beatrice’s parents are.”</p>

If the discussions identified the author stating their responsibility to their future students or the field of education, the entry was coded as *professional responsibility*. Likewise, if entries provided evidence of the author’s personal responsibility to their community in roles other than as an educator (e.g. parent, community leaders, etc...), the entry was coded as *personal responsibility*. The following table features these two codes with corresponding representative quotes.

Table 3  
*Professional Responsibility & Personal Responsibility Codes with Illustrative Quotes*

Professional Responsibility	Personal Responsibility
<p>“...That just goes to show that one person like Mullet Fingers can begin to change the world. I guess we could use this as teachers and take small steps and encourage others to help bring about a change. If you think about it teachers are very influential in children’s lives. I think that is because of the persona that we have and also the fact that we spend most of the day with the students. You know, Mrs. Curry always says that it just takes one lousy teacher to ruin a life time of learning. I think that it also takes just one awesome teacher to get a child hooked on learning. I guess we teachers need to step up to the plate.”</p>	<p>“What a good liar Beatrice is!!!! I’m impressed-it makes we wonder what my kids are up to!!! Anyway, the thought of the running boy with such a raging infection scares me—I can’t but help think of my little ones. Parents have such a huge responsibility to take care of their children.”</p>

The final codes that emerged were *self-doubt* and *teacher efficacy*. If the entries provided evidence of students doubting their ability to perform the duties of a professional educator, they were coded as *self-doubt*. Responses that contained evidence of the authors seeing themselves as positively affecting student outcomes and achievement were coded as *teacher efficacy*. The following table features these two codes with corresponding representative quotes.

Table 4  
*Self-Doubt & Teacher Efficacy Codes with Illustrative Quotes*

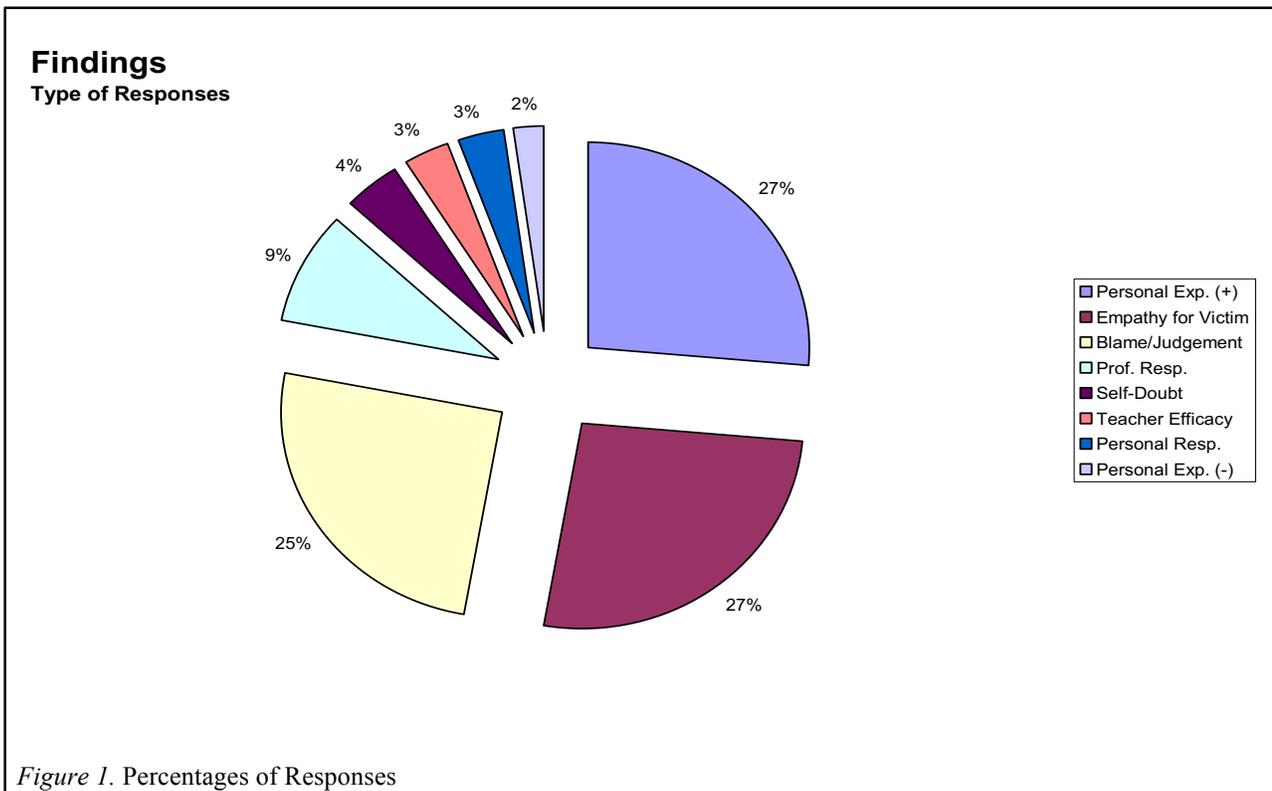
Self-Doubt	Teacher-Efficacy
<p>“...Yes, they were good parents. They seemed to have found a balance between being a friend and a parent which is not easy. In a way, we have to find that same balance in the classroom. We must be willing to listen to students and try to understand their concerns and viewpoints. At the same time, they must understand and accept our authority and follow the rules. I am really wondering if I am up to the challenge. I am almost finished and am having scary thoughts! Help!”</p>	<p>“It is hard to relate to some of the characters in this book. I for one do not understand how Mullet Fingers was allowed to skip school and simply disappear. Where are the teachers? I know that I would have done something to intervene. Called a social worker, school counselor, given extra help, worked with them after school, etc... I would have intervened before this point. It takes only one teacher to make a difference. I can’t wait until I have my own classroom. I have waited so long. I know I can make a difference for children like Beatrice and Mullet Fingers.”</p>

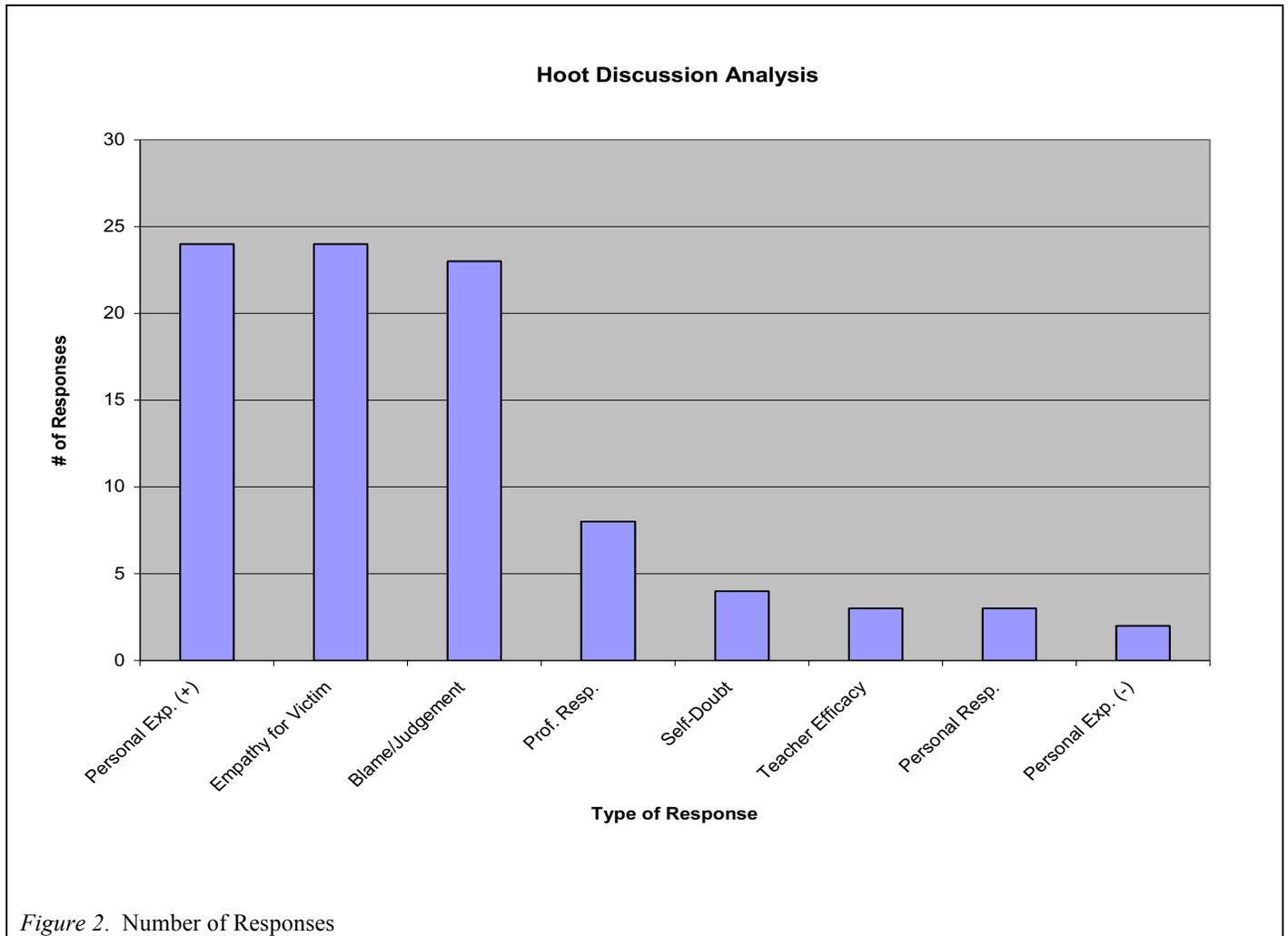
### Findings

The findings suggest there is still room for improvement for teacher educators in relation to developing empathy, teacher efficacy, and professional responsibility in their preservice teachers. As the themes began to emerge from the coded data, the results were surprising. *Personal reflections/experiences-positive* and *empathy* comprised over 50% of the entries coded. This may seem positive until the data is further scrutinized. Initially, it seemed that the students were developing a sense of empathy for the characters who are not unlike the future students they will have; however, the majority of responses for both categories--*empathy* and *personal reflections/Experiences-positive*--reflected responses that involved the students identifying with the positively portrayed person or the person of high moral standards.

Only 2% of the responses identified a personal connection to the less desirable character or person making inappropriate choices. Not a single entry indicating empathy for a less desirable character was present (e.g. out of work father, bully, etc...). For example, one entry described an out of work father as lazy and responsible for his family’s problems even though there was absolutely no evidence in the novel to back these claims. In fact, the book does not give enough information on the circumstances surrounding the father’s situation. A surprising 25% of the responses involved the students placing blame or judgment on individuals because of their life circumstances or inappropriate choices.

There was also very little evidence of *professional responsibility* or *teacher efficacy*. Only 9% of the responses indicated the students taking responsibility for their future students, and only 3% of the responses indicated that students felt they were able to teach children different from themselves. *Personal responsibility* was only evident in 3% of the entries coded. However, a low percentage of responses indicated a lack of confidence in the students’ ability to teach. In fact, only 4% of the responses indicated *self-doubt* on the students’ ability to function effectively as an educator. Figures 1 & 2 illustrate the findings from the data.





### Discussion

So where do we go from here? This is a difficult question to answer. Even though the results were not anticipated, there is room for improvement for teacher educators in preparing preservice teachers for the future. Pinpointing issues within the EPP is critical for how can we make a difference if we are unaware of the problems. By addressing the issues, we are better able to formulate a plan of action to address the weaknesses and better prepare our preservice teachers for the challenges they will face. Preservice teachers must be given the skills they need to work in diverse settings and develop the efficacy needed to meet a variety of challenges in the classroom including supporting students with challenging life situations.

In order for students to succeed, they must have a positive learning environment. Having access to a positive class environment is difficult without teacher support. In fact, teacher support is critical in the development of a positive classroom climate (Alderman, 2004). Teachers have a duty to foster an environment in which students and teachers support each other for learning and care about the success and failure of each other (Alderman, 2004). How can teachers support a positive classroom climate in which each child feels a belongingness to the group if they have hidden biases or lack confidence about their ability to teach children experiencing challenging life situations? When preservice teachers feel adequately prepared for their future, teacher efficacy will increase.

The question is what can teacher educators do now to improve teacher efficacy, empathy, professional responsibility, and motivation among their preservice teachers? First, just because students show evidence of empathy and connections to diverse groups of students, doesn't mean the job is finished. Teacher educators must look beyond the surface to determine if preservice teachers embrace all groups or just those groups that are portrayed in a positive manner. We must help teacher candidates uncover hidden biases or negative attitudes about certain groups of children and families. It is simply not enough to prepare preservice teachers with pedagogical knowledge and academic content; we must also help them develop positive attitudes about their future students and their ability to teach children of diverse cultures and backgrounds, children that are most likely different from themselves.

Teachers also have a responsibility to provide effective instruction for children from all backgrounds (Alderman, 2004). It is the responsibility of teacher educators to prepare preservice teachers to accept this responsibility. Secondly, teacher educators cannot assume that class activities, readings, and discussions will help teacher candidates develop empathy, professional responsibility, and teacher efficacy; development of these characteristics require diverse experiences that must constantly be assessed to ensure they are in fact making a difference.

Even though the results of this project indicate that some preservice teachers struggle to connect with students in difficult situations, further research will help decide on the best intervention to reverse this problem. In the future, activities that will specifically address the areas of teacher efficacy, empathy, and professional responsibility will be incorporated. Additionally, the effects of more structured online literature circles in which the instructor takes an active role in the discussions will be investigated in order to unearth problem areas and guide discussions to more meaningful topics. Also, more prompts to direct their journaling on the topics of teacher efficacy, professional responsibility, and student motivation will be provided. Moreover, more frequent instructor input in the journal responses will also be beneficial. In addition to these class activities, case studies and field experiences should be incorporated into preservice teacher curriculum. Preservice teachers should have multiple opportunities to work directly with diverse children and their families. Another area that should be explored is the role of community service in developing empathy and professional responsibility in my preservice teachers.

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## Appendix A

## Early Childhood Issue Presentation Guidelines

**Early Childhood Issue Presentation (30 points)****Step One (Journal and Online Discussion): 6 points**

- Groups of 4 to 6 students will be decided in class.
  - The group will select a novel for young adults that deals with an early childhood issue from chapter 2 (see book list on Web CT). More details will be given during class.
  - Each member will obtain a copy of the book (library, Amazon.com, Half.com, Hastings, Books a Million, etc...)
1. **Online Discussion Boards:** Each member will begin to read the book and engage in an online discussion (with their group members) pertaining to what they read each day. Discussions should allow students to make connections between the book and their own personal experiences, related readings, current events, social issues, etc... Group members will be required to engage in an in-depth discussion with their group. Remember these discussions should read like a conversation. We will discuss this more in class. **Discussions are worth 3 points of your total grade.**
  2. **Reflective Journal:** Each group member will also keep a reflective journal documenting their concerns and feelings regarding the book and their early childhood issue. The journal should consist of at least 6 entries and should be typed and double-spaced. You may use your online discussions, text/novel readings, and personal experiences to guide your reflections. This journal should be included in your group notebook (see below, step two). **The reflective journal is worth 3 points of your total grade.**

**Step Two (Issue Research/Notebook): 16 points**

- Research a critical issue facing children and families today. The issue should be related to the young adult novel decided on by your group. Use the library databases to locate newspaper articles, educational journals, etc... to support your issue.
- Locate at least three **credible** sources to support your issue.

**Notebook: Each group** (there will be one notebook submitted for each group) **will turn in the following using paragraph form (use a 3-ring notebook with dividers to organize each of the following seven sections):**

**Issue Description:** A description of the critical issue facing children and families today (at least 1 page, double-spaced),  
- (2 points)

**Novel Summary:** A summary of the young adult novel and an explanation of how it relates to your selected issue (at least 1 page, double-spaced) - (2 points)

**Source Summaries (3):** A bibliography and summary for **each** source (1/2 page for each of the three sources, double-spaced; include a copy of the source) - (2 points)

**Influences:** An explanation of the influences this issue has on curriculum, teaching, and the life outcomes of children and families (at least 2 pages, double-spaced) - (4 points)

**Professional Responsibility:** An explanation of how early childhood professionals can respond to this issue for the betterment of children and families (at least 2 pages, double-spaced) - **(3 points)**

1. **Reflective Journals:** The notebook should also contain the reflective journals for each group member (see explanation in step one).
2. **Individual Contributions:** Each group member will prepare a typed explanation of the contributions they made to the project. This document may also include your thoughts and feelings about the issue and/or project. This document should be **at least** one page in length, double-spaced. – **(3 points)**

**Step Three (Presentation): 8 points**

**Presentation Design:** Each group will be required to design a presentation regarding their issue. The group will use their issue research and young adult novel for the basis of this presentation, however, outside resources may also be used (poems, songs, dramatizations, video clips, etc...). The presentation should last approximately 10-15 minutes and should captivate and excite the audience. I am looking for unique and creative presentations that grab the attention of the audience and make them think! Remember to think “outside the box” and take into consideration the different perspectives of others! I want the audience to be moved by your presentation!

Appendix B  
Novel Choices Aligned with Critical Issues

Critical Issue	Novel Choices
Abuse (physical or emotional)	Bud, Not Buddy by Christopher Curtis Hoot by Carl Hiaasen A Child Called It Letters from the Inside
Adoption	Saffy's Angel by Hilary McKay The Wanderer by Sharon Creech Whale Talk by Chris Crutcher
Death/ Loss of a Parent(s) (i.e. death, divorce, abandonment)	A Single Shard by Linda Sue Park Because of Winn Dixie by Kate Di Camillo Bridge to Terabithia by Katherine Paterson Dear Mr. Henshaw by Beverly Cleary Getting Near to Baby by Audrey Couloumbis Lily's Crossing by Patricia Giff Out of the Dust by Karen Hesse Phoenix Rising by Karen Hesse The Wanderer by Sharon Creech Walk Two Moons by Sharon Creech What Daddy Did by Neal Shusterman
Foster Children	Bud, Not Buddy by Christopher Curtis Dakota's Dream by James Bennett Pictures of Hollis Woods by Patricia Giff Ruby Holler by Sharon Creech The Wanderer by Sharon Creech When the Bough Breaks by Anna Myers
Mental/Learning Disabilities	A Corner of the Universe by Ann Martin Flowers for Algernon by Daniel Keyes Loser by Jerry Spinelli
Obesity	One Fat Summer by Robert Lipsyte Staying Fat for Sarah Byrnes by Chris Crutcher
Peer Pressure/Bullying	Hoot by Carl Hiaasen Loser by Jerry Spinelli One Fat Summer by Robert Lipsyte Maniac Magee by Jerry Spinelli Tangerine by Edward Bloor The Skin I'm In by Sharon Flake Wringer by Jerry Spinelli
Physical Disabilities/ Illness	Peeling the Onion by Wendy Orr Tangerine by Edward Bloor
Poverty	Bridge to Terabithia by Katherine Paterson Downsiders by Neal Shusterman Hoot by Carl Hiaasen Maniac Magee by Jerry Spinelli Night Hoops by Carl Deuker Out of the Dust by Karen Hesse A Single Shard by Linda Sue Park Witness by Karen Hesse
Racism	Maniac Magee by Jerry Spinelli The Skin I'm In by Sharon Flake Witness by Karen Hesse

# TEXAS TEACHER SHORTAGES: SOLUTIONS OFFERED BY AN EXAMINATION OF THE 2013 TEACHING AND LEARNING INTERNATIONAL SURVEY (TALIS)

**Angela Schroeder, M.Ed.**

Texas Tech University

## Abstract

*The short blog post “How the Teacher Shortage Could Turn into a Crisis” examined the increasing difficulty of recruiting and retaining high quality teachers (Weingarten, 2016); which is appearing in Texas as teacher preparation enrollment has decreased. Teacher recruitment and retention is a multi-tiered issue which requires an examination of numerous variables; including job satisfaction and individual teacher characteristics. Researchers have examined teacher attrition and job satisfaction through the lenses of motivation and organizational commitment. The 2013 Teaching and Learning International Survey (TALIS) data was used for this study, which analyzes correlations between general demographics, work experience, participation in a teacher training programs, professional development, and satisfaction with teaching as a career choice. Survey items were selected and explored using factor analysis to determine if there are relationships between gender and age of respondent, years of teaching experience, completion of teacher preparation program, mentorship and professional development, and job satisfaction or professional regret. Initial analysis hints that teacher preparation programs, mentorship, and professional development are correlated to job satisfaction and teacher regret. These are factors that can be addressed with the goal of reducing teacher attrition and increasing teacher candidates in the state of Texas and beyond.*

Keywords: teacher shortage, teacher attrition, TALIS data, teacher job satisfaction

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This study examined the second Teaching and Learning International Survey (TALIS), administered in 2013, to determine if the type of education and training teachers receive is correlated to their level of job satisfaction. The advantage of exploring these relationships using the TALIS is the large, multinational sample size which provides a broader perspective into the teacher experience. The TALIS questions allow researchers to derive self-efficacy; which according to Bandura (1997), is linked to higher motivation, setting high goals, and demonstrating strong commitment to tasks. Furthermore, self-efficacy is associated with regulating mood and stress (Bandura, 1997), and reduced stress is correlated to a decrease in teacher burnout and an increase in job satisfaction (Grayson & Alvarez, 2008). Job satisfaction is a latent construct which may be determined relationally by looking at more measurable factors; such as teacher work load, compensation, and teacher experience and preparation (Klassen & Chiu, 2011). Pearson and Moomaw (2005) examined factors contributing to job stress which relates to teacher job satisfaction, and found that increased teacher autonomy coupled with more administrative support was positively correlated with job satisfaction. Texas teacher educators and school administrators should strive to increase recruitment and retention by implementing policies that address these factors.

### **Statement of the Problem**

For the past few years, education researchers and stakeholders have been noticing a downward trend in teacher education enrollment (Sawchuk, 2015); alongside an increasing teacher attrition rate (Klassen & Chiu, 2011). Student success and achievement has a reciprocal relationship to teacher motivation and self-efficacy (Cheng, Tang, & Cheng, 2015). Moreover, the teaching profession is essential to the economy, using the classic economic model, an uneducated population will earn less income over a lifetime creating a vast gap in wealth and earnings throughout the global population. Since job satisfaction is a latent construct related to work conditions and self-efficacy ratings correlate to training, preparation, and experience (Arsal, 2014) these factors should be explored in connection with job satisfaction and professional regret. In other words, can teacher retention and recruitment be increased by addressing issues related to job satisfaction and self-efficacy?

### **Purpose of the Study**

The purpose of this study is to support previous research by investigating factors of teacher attrition, burnout, and recruitment; while providing points of discussion for addressing the issue of teacher shortages in Texas. Additionally, this study will add to the present literature by including a multinational perspective. Teacher characteristics, teacher training and preparation, mentoring and professional development, and job satisfaction and professional regret are commonly experienced by teachers working in the 34 countries which contributed data to TALIS

### **Significance of the Study**

Existing literature provides a grim picture of the teaching profession citing an increase in teacher attrition and decreases in new teacher graduates (Klassen & Chiu, 2011; Sawchuk, 2015). This study will contribute to extant research by providing a global perspective to the constructs of job satisfaction and professional regret; which are both connected to teachers deciding to leave the profession and the recruitment of teacher candidates (Klassen & Chiu, 2011). By understanding the relationships between the factors that contribute to these phenomena; teacher education programs and education administrators in Texas and elsewhere can form policies which will mediate negative aspects of the profession, increase individual self-efficacy, and increase positive support of new and inservice teachers.

### **Research Questions**

Based on the 2013 TALIS data, the recently highlighted issue of teacher attrition rates, and research suggesting that teachers with a positive working experience also positively affect student achievement; I have composed the following research question(s):

1. Are there underlying factors explaining the characteristics of teachers that are satisfied with their teaching career compared to the characteristics of those that regret entering the teaching profession?
2. Does participation in a teaching training program correlate to job satisfaction? As in, did satisfied teachers receive more training in content, pedagogy, and classroom practice than dissatisfied teachers?
3. Does the participation in a mentorship or first-year teaching support program positively affect the level of job satisfaction among teachers?

These three research questions are broad, and dependent on less measurable factors such as motivation, self-efficacy, and burnout. Therefore, these questions will be addressed by searching for some underlying variables that may more clearly define their relationship.

### **Theoretical Framework**

Teaching is a profession that may be examined through the lens of human capital theory; viewing it simply as a function of salary, benefits, and other non-fiscal aspects of the official job offer (Kirby & Grissmer, 1993). In this model, teacher attrition would be considered economically via cost-benefit analysis of the teaching position versus alternative

opportunities, which may help explain the characteristics of those individuals which opt to enter the profession (Kirby & Grissmer, 1993; Guarino, Santibanez, & Daley, 2006). However, research of teacher attrition suggests job characteristics which emerge after-hire are also involved in the decision to leave or stay in the profession (Somech & Drach-Zahavy, 2000). Kirby & Grissmer (1993) describe these factors as experience characteristics; which includes types of students, administrative workload (Somech & Drach-Zahavy, 2000), and professional support, and these attributes provide the basis for their teacher attrition theory. Teacher attrition theory posits as experience characteristics increase teacher attrition rates will also increase as a function of job dissatisfaction (Kirby & Grissmer, 1993). In addition to economic theory and teacher attrition theory, Bandura's (1997) self-efficacy theory connects motivation, mood and stress regulation, and commitment to high perceived self-efficacy among individuals. Klassen and Chiu (2011) connect high self-efficacy to occupational commitment among teachers. Therefore, an interplay of these three theories provide a logical framework for detailing the experience of an individual from preservice training, developing self-efficacy, experiencing job satisfaction, and occupational commitment (Figure 1).

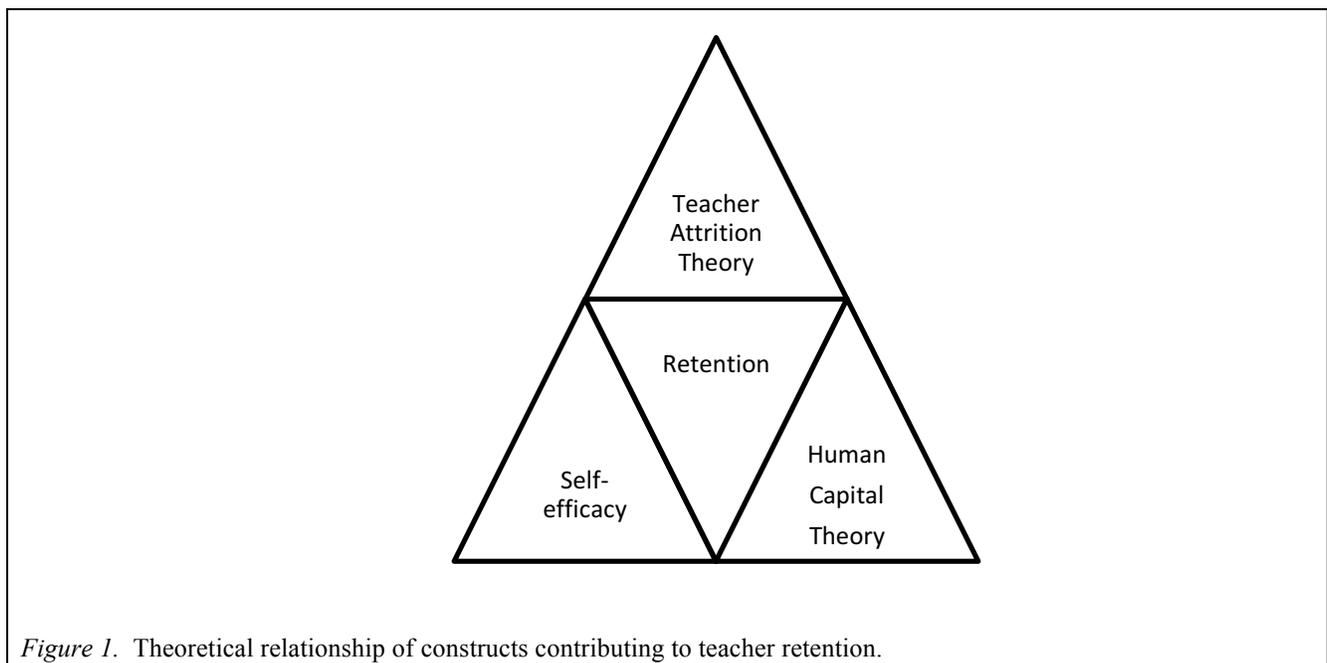


Figure 1. Theoretical relationship of constructs contributing to teacher retention.

## Literature Review

### Teacher Recruitment and Retention

There are indications that fewer and fewer post-secondary students are choosing teaching as a profession, as explained by Sawchuk (2015) the greatest declines are being recorded in the largest states; including Texas. Explanations range from the economic budget reductions of 2008 to the increase in accountability and performance pay raising wariness among potential education professionals (Sawchuk, 2015). Sawchuk (2015) also reported that researchers and policymakers are concerned that the public perception of teaching has become more negative, specifically surrounding teacher evaluations, more academic standards, and lack of teacher support. These factors have also been considered as contributing variables to teacher attrition studies, like one from Klassen & Chiu (2011). Klassen and Chiu (2011) performed a factor analysis of survey results from teachers to determine intention to quit, occupational commitment, and job satisfaction. Analysis revealed that practicing teachers have lower occupational commitment and higher levels of intention to quit, corroborating the inverse relationship between teachers' perceived stress and occupational commitment (Klassen & Chiu, 2011). Sawchuk (2015) noted Science, Technology, Engineering, and Mathematics (STEM) teachers are in highest demand but have the weakest

enrollment in teacher preparation programs. Adding to this shortage Klassen and Chiu cite a Guarino, Santibanez, and Daley (2006) report that teachers in STEM fields were more likely to leave teaching than their peers teaching other subjects.

### **Teaching and Learning International Survey**

Clearly, U.S. education will be facing a teacher recruitment and retention challenge, but this shortage extends to other countries as well. Therefore, multinational bodies including the Organization for Economic Cooperation and Development (OECD) are working to provide researchers with international data to help shape education policy for positive improvement. OECD states its “[mission] is to promote policies that will improve the economic and social well-being of people around the world” (Organization, 2016a, para. 1). As part of its mission, OECD administered the most recent TALIS in 2013 with findings representative of more than five million teachers in 34 countries to provide data concerning learning environment, feedback and evaluation, pedagogy and classroom environment, support and professional development, school leadership, and job satisfaction and self-efficacy (Organization, 2016a). TALIS is the only international survey available to researchers which encompasses a range of education issues, and the Teachers in Focus Brief reports that teachers in most countries spend the first five years of teaching in challenging working conditions and have less confidence than more experienced teachers (Organization, 2016b).

### **Job Satisfaction**

Klassen and Chiu (2011) discussed the relationship between job stress, intention to quit, and self-efficacy noting that confidence in capabilities is related to job satisfaction and commitment to the profession. Various factors have been linked to job stress, Pearson and Moomaw (2005) performed a study to determine the effect of teacher autonomy and empowerment on teacher stress levels and increased motivation, and concluded that these characteristics are linked to teacher commitment and teacher professionalism. On the other hand, job dissatisfaction leads to stress and ultimately to burnout, and is the culmination of three dimensions; emotional exhaustion, depersonalization, and personal accomplishment (Pearson & Moomaw, 2005; Grayson & Alvarez, 2008). Grayson and Alvarez (2008) found that as schools increased the amount of time provided for teaching duties and learning activities and reduced interruptions from administrative tasks teacher, self-efficacy, and personal accomplishment positively increased. An increase in both self-efficacy and personal accomplishment would enhance job satisfaction, a key marker of occupational commitment (Arsal, 2014; Klassen & Chiu, 2011).

### **Characteristics of Teacher Attrition**

Kirby and Grissmer (1993) provided a framework for examining teacher attrition so policy makers could consider job aspects beyond strictly economic incentives. Experience characteristics are those that emerge after a teacher gains experience at the school site, and include student characteristics, level of administrative tasks, and professional support (Kirby & Grissmer, 1993). This model is particularly useful to examine teachers that have been in the profession for five years or less, however, other changes come into play between teachers’ personal lives and school administrative changes (Kirby & Grissmer, 1993). The longitudinal study performed by Kirby and Grissmer (1993) produced a U-shaped relationship for age and attrition, with young teachers leaving at high rates similar to those nearing retirement. Considering the decreasing enrollment in teacher preparation programs this pattern of attrition harbingers major challenges for education policy-makers and school administrators (Sawchuk, 2015).

### **Methods**

The aim of this study is to identify underlying constructs within the TALIS data among the variables describing teacher demographics, participation in teacher training program, and new teacher mentoring as they are related to job satisfaction and professional regret. Teacher job satisfaction and professional regret have been related to teacher attrition in previous studies including Klassen and Chiu (2011), Guarino, Santibanez, and Daley (2006), Grayson and Alvarez (2008), but the variables that inform job satisfaction and professional regret are not completely understood. In order to define the complexities of these types of latent constructs, a large sample size is needed in conjunction with a multitude of validated

survey items which will inform researchers of measurable variables related to these topics. Fortunately, the 2013 TALIS data set serves as a reliable secondary data source for researchers, and was utilized for this study to provide a global lens to the issue of teacher shortages and attrition.

### **Participants**

According to the standards set forth by the TALIS Board of Participating Countries, participating schools and teachers were based on scientifically drawn samples that would be representative of each country's teachers and students (National Center for Education Statistics, n.d.). It was determined that "in order to represent the country accurately and reliably, each country must sample at least 200 schools" (National Center for Education Statistics, n.d.). These schools were randomly drawn, and the school principal along with up to 22 teachers were asked to complete the survey with response rates varying by country. The participants were teachers of various subject areas at all levels, denoted as K-12 in the United States; however, TALIS uses the International Standard Classification of Education (ISCED) to determine teaching level (OECD, 2014). The 2013 survey focused on Level 2 classification; which is lower secondary education or middle school and junior high, although there were a number of Level 1, primary education teachers and Level 3, secondary education teachers (OECD, 2014). A combined sample size of 147,399 was included in the analysis. It is important to note that teachers that teach adults only, special-needs only, part-time, or out on leave were excluded from the survey (OECD, 2014).

### **Materials**

Participants could complete either a paper and pencil or online version of the questionnaire, and no personal information was required. The data is available for public use, and can be downloaded on the National Center for Education Statistics (NCED) or OECD website in the form of an SPSS data file. The data from the United States is not included in all of the survey items because the response rate did not meet the requirements; however, the data is included in the TALIS international public use data files. For this study, data files were downloaded into spv- files and analyzed using IBM SPSS version 23.

### **Procedure**

Initially, TALIS items were selected based on their relationship to the latent factors of job satisfaction, self-efficacy, and teacher attrition; specifically, variables described in similar studies were compared to TALIS survey items. Variables that were highly correlated were then excluded to reduce multicollinearity, such as Items 5a, 5b, 5c, and 5d, "How many years of work experience do you have?" broken into a) years at the surveyed school, b) years total, c) years working in other realms of education, and d) years working other jobs. For the purposes of this investigation, only 5b, years working as a teacher in total, was included in the analysis (Field, 2013). This process was repeated for each of the first round of selected items.

A total of 17 survey items were ultimately chosen to most closely represent the underlying constructs, and these provided information on teacher age, years of experience, participation in a training program, self-report of feelings of preparedness, teacher mentoring, and job satisfaction (Appendix A). Finally, following recommendations for exploring correlations between data, the statistical analysis chosen was principal axis factoring using the following criteria; Kaiser-Meyer-Olkin (KMO) measure, eigenvalues greater than 1, and oblique rotation (Field, 2013). This exploratory factor analysis was chosen to "reveal any latent variables that cause the manifest variables to covary," (Costello & Osborne, 2005). Using IBM SPSS version 23, survey items were selected for factor analysis, along with the KMO test for sphericity, and anti-image correlation matrix to test assumptions. Eigenvalues were set at greater than 1 to exclude factors that do not explain any more variance than adding a variable, and Varimax orthogonal rotation was selected to reduce the number of variables with high loadings on a single factor (Field, 2013).

## Results

A principal axis factoring analysis was conducted on the 17 items with oblique rotation, and the KMO = .70 which verified the sampling is adequate for analysis along with Bartlett's test of sphericity significant at  $\chi^2(136) = 60343.16$ ,  $p < .001$ . The correlation matrix revealed that 14 of 17 items correlated at least .3 with a minimum of one other item, suggesting reasonable factorability (Neill, 2008). After reviewing the eigenvalues and scree plot, the first five factors explained 45 percent of the variance, therefore these factors were extracted for subsequent analysis. Five factors were retained, Table 1 shown in Appendix B provides the rotated factor loadings, and each item with a criterion level of .40 or greater demonstrates strong correlations for those factors. The items that cluster for the same factor indicate that factor 1 reflects motivation, factor 2 represents self-efficacy, factor 3 is representative of empowerment, factor 4 relates to occupational stress, and factor 5 represents peer relations.

Age and experience items had strong correlations with motivation. Kirby and Grissmer (1993) noted the U-shape pattern of attrition implying that middle career and more experienced teachers have more job-related motivation. Self-efficacy related to survey items about teacher preparedness and formal training programs, an institution that supports teach autonomy and support will increase teacher and organizational commitment (Klassen & Chui, 2011). Klassen and Chui also noted that these factors were related to teacher empowerment, and were noted in survey items about new teacher induction programs and school climate. Occupational stress and peer relations overlapped with school climate and professional development, these activities define an organizations commitment to supporting teacher professionalism, a key factor in teacher retention; according to Kirby and Grissmer (1993). These constructs are important indicators to those examining teacher attrition and retention, and the commonality found in the TALIS implicates that teachers, globally, experience these issues within their unique school systems (Guarino, Santibanez, & Daley, 2006).

## Discussion

It is important to begin to understand what motivates an individual to enter the teaching profession, both age and experience had high factor loadings under factor 1; .95 and .87, indicating that there are some shared characteristics for those that chose to become teachers and remain in the profession (Guarino, Santibanez, & Daley, 2006). In other words, this analysis suggests that there are some underlying motivators that are shared which should be explored future analyses. Teachers experienced various types of preparation for pedagogy, content, and classroom practice and these variables shared factor 2 loading at -.92, -.81, and -.80 respectively supporting high self-efficacy for teachers participating in a structured teacher preparation program (Skaalvik & Skaalvik, 2010), this finding is supported by the formal training items which all loaded significantly under factor 3. In addition to these findings, self-report of job satisfaction and career regret loaded at -.85 and -.50 under factor 4 suggesting that occupational stress correlates with these variables. Teachers participating in mentoring or induction activities experience more peer relationships or factor 5, and all items loaded  $>.4$ .

## Limitations

There are a number of limitations in this study, including the potential for high multicollinearity between variables due to the nature of the survey items; this also may be due to the subjective nature of item selection (Beavers et al., 2013). However, individual items were chosen based on a strong theoretical framework and then deleted or included based on appropriate data prescreening procedures which should have negated these effects (Fields, 2013). In addition, a number of the survey items offer interval or ordinal data rather than continuous measures, and the literature is not in agreement on the appropriate use of this statistical method on such data (Beavers et al., 2013). However, the number of research papers utilizing this method increases confidence that statistically significant analyses can be performed.

## Implications

This analysis supports the premise that teachers around the globe are struggling with similar issues that may cause a teacher to leave the profession, and that these issues should be explored in future studies. Considering the current teacher

shortages, teacher educators need to define the impact of candidates' age and experience when forming recruitment programs, in addition to the structure of the program itself. For example, the high numbers of attrition among young teachers may point to a need to recruit individuals from other occupations that are in midlife and more interested in changing to an altruistic career with positive experience characteristics (Klassen & Chiu, 2011).

In general, teaching as a profession lacks prestige and economic compensation lags behind other opportunities of equivalent education and experience; therefore, these factors should be explained during recruitment. Future research may explore the alignment of expectancy-value theory with teacher education enrollment and teacher attrition in order to ascertain how economic factors play a role in individuals choosing teaching as a lifelong career. Additionally, this analysis points to stress as being a dominant factor for job satisfaction and intention to quit (Klassen and Chiu's 2011; Pearson and Moomaw 2005) indicating future research should attempt to identify specific sources of stress which could be addressed by school administrators, districts, and other governing bodies. For example, a significant mitigator of stress are supportive activities and programs; such as mentoring and teacher induction (Hoy & Spero, 2005). Hoy and Spero performed a longitudinal study to assess changes in self-efficacy from preparation through student-teaching, and finally the induction year, and the results indicated that self-efficacy ratings decreased at the end of the induction year. The connection between responses concerning peer relations, mentoring, and induction activities should be explored further to identify best practices of supporting preservice and new teachers (Guarino, Santibanez, & Daley, 2006; Pearson & Moomaw, 2005).

### Conclusion

The purpose of this exploratory factor analysis study was to discover the number of latent constructs contributing to variables which are theoretically related to teacher attrition and retention. Factor loadings suggest that motivation, self-efficacy, empowerment, occupational stress, and peer relations can explain relationships of those survey items, confirming the first research question that there are shared characteristics among teachers that are satisfied in their current positions. The second research question is addressed by factor 3, which suggested that teachers with formal training in pedagogy, content, and classroom practices are more empowered in their current positions. Empowerment, according to Pearson and Moomaw's (2005) investigation, leads to both job satisfaction and occupational commitment; which are increasingly important factors with teacher shortages looming. The final research question concerning the effect of mentor programs on job satisfaction is less clear with the most significant factor loading factor 3 (empowerment) = .35. However, the survey items point to a relationship between teachers that have participated in mentoring or induction activities (Appendix B).

Teaching is a multifaceted, complex profession, and research regarding teacher attrition and retention should attempt to tease apart these complexities so policies and teacher education programs can more accurately reflect the needs of our current education system. Darling-Hammond (2010) explains that the power to transform teaching and learning lies within teacher preparation. Buchanan's (2012) study examining the reasons teachers choose to leave the classroom indicated that mentoring would have altered early classroom teaching experiences for those that chose to leave the profession. It is possible to utilize data from sources such as TALIS to determine ways that teacher recruitment activities and teacher preparation programs can address needs of future teachers to help them remain in the classroom. The implication is significant, "as measured by the teacher scores on a licensing examination, along with teachers' experience and education—had more powerful effects on student achievement than socioeconomic status" (Ferguson, 1991 as cited in Darling-Hammond, 2010, p. 39). In other words, in order to make positive impacts on student success in Texas, and across the United States, methods must be put in place to prepare and support high quality teachers which may increase the likelihood of retaining them in the classroom.

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Appendix A  
Survey Results

Variable	Item	Item	Item
Gender	TT2G01		
Age	TT2G02	—	
Experience	TT2G05B		—
Teacher Program	TT2G11		
Teacher Preparedness	TT2G12A	TT2G12B	TT2G12C
Self-Report Preparedness	TT2G13A	TT2G13B	TT2G13C
Participation in Induction Program	TT2G19A	TT2G19B	TT2G19C
Mentoring activities	TT2G20A	TT2G20B	
Job Satisfaction	TT2G46J		
Job Regret	TT2G46D		

## Appendix B

Results from Exploratory Factor Analysis for the SPSS Analysis of TEACHING AND LEARNING INTERNATIONAL SURVEY Items (N=12708)

	Rotated Factor Loadings				
	1	2	3	4	5
Background/ How many years of work experience do you have?/ Year(s) working as a teacher in total	<b>.95</b>	.04	-.08	-.02	.03
Background/ How old are you?	<b>.87</b>	.07	.04	-.01	.06
Background/ Prepared for elements in teaching/ Pedagogy of the subject(s) I teach	-.03	<b>-.92</b>	.02	.03	-.03
Background/ Prepared for elements in teaching/ Content of the subject(s) I teach	-.04	<b>-.81</b>	-.01	.04	-.01
Background/ Prepared for elements in teaching/ Classroom practice in the subject(s) I teach	.00	<b>-.80</b>	.014	.01	-.02
Background/ Are you female or male?	-.00	.06	.04	.04	-.04
Background/ Elements included in formal education or training/ Pedagogy of the subject(s) I teach	.02	-.05	<b>.87</b>	.02	.05
Background/ Elements included in formal education or training/ Content of the subject(s) I teach	-.00	-.06	<b>.83</b>	.00	.04
Background/ Elements included in formal education or training/ Classroom practice in the subject(s) I teach	.04	.02	<b>.71</b>	.01	.05
Background/ Did you complete a teacher training programme?	-.03	.03	.35	-.05	-.02
School Climate/ About your job/ All in all, I am satisfied with my job	.03	.00	.08	<b>-.85</b>	.01
School Climate/ About your job/ I regret that I decided to become a teacher	.01	-.04	.01	<b>.50</b>	.03
Professional Development/ Participation in programmes/ I took/take part in general and/or administrative introduction	.01	-.03	.05	-.03	<b>.59</b>
Professional Development/ Participation in programmes/ I took/take part in an induction programme	.02	.04	-.00	.05	<b>.49</b>
Professional Development/ Participation in programmes/ I took/take part in informal induction activities	-.00	-.02	.03	-.01	<b>.42</b>
Professional Development/ Involvement in mentoring activities/ I presently have an assigned mentor to support me	.16	-.01	.01	.05	.21
Professional Development/ Involvement in mentoring activities/ I serve as an assigned mentor for one or more teachers	-.12	.07	-.00	.01	.13

# A SURVEY OF FACILITATED IEPs IN 29 STATES

**Michele Anne Gist-Barrow, Ed.D.**

University of Mary Hardin-Baylor

**Christie Bledsoe, Ed.D.**

University of Mary Hardin-Baylor

**Kris Ward, Ph.D.**

University of Mary Hardin-Baylor

**Hollis Lowery-Moore, Ph.D.**

University of Mary Hardin-Baylor

## Abstract

*With a growing number of school officials and parents of children with disabilities not always agreeing with what is developmentally and educationally appropriate for the child, state education department officials need to better inform stakeholders about facilitation as a non-adversarial dispute resolution option. Utilizing an exploratory sequential mixed methods study that involved an analysis of the 29 state websites with existing facilitative plans, the researcher aimed to identify states with well-developed Facilitated Individual Education Plan (FIEP) processes with exemplary components.*

Keywords: special education, individualized education plans, facilitation, dispute resolution

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The Individuals with Disabilities Education Act (IDEA) offers many provisions to students and parents including the right to challenge decisions about the appropriateness of their child's educational program (Weber, 2008). Parents can challenge an educator's decisions through many different dispute processes, which include negotiation, mediation, and administrative hearings (Mueller & Carranza, 2011; Zirkel, 2008). While formal procedural due process hearings remain as a fundamental option to resolve conflict for parents under IDEA, this amended act offers other alternative dispute resolution strategies (Feinberg, Beyer, & Moses, 2002; Mueller, 2009a). State laws regarding education must include other effective conflict resolution mechanisms for resolving disputes (Mueller, 2009a).

A Facilitated Individualized Education Program (FIEP) is one form of alternative dispute resolution strategies described within the IDEA guidelines. Presently no mandated federal regulations require the use of facilitation, but when IEP team members agree to this procedure, they should follow IDEA regulations (Mueller, 2009b). This alternative strategy grants disputants equal opportunities to problem-solve by cultivating an attitude of conciliation and collaboration when misunderstandings arise (Muller, 2009a). Facilitation is cost-free and lawyers do not need to attend the meetings (Martin, 2010). A neutral third party, a facilitator, trained in dispute resolution techniques offers disputants a process by creating an agenda, ground rules, goals, and open communication to equalize discussion to reach an agreement (Lombardi & Ludlow, 2004; Mueller, 2009a). Through open dialogue, the disputants focus on the child's educational needs and develop an

educational program to address those needs (Martin, 2010; Mueller, 2009a). If disputants do not reach agreement through facilitation, other formal procedural safeguard routes are available to resolve issues.

State laws must provide alternatives to dispute resolution between schools and parents. Federal legislation requires ensuring certain procedures are established and implemented at the state level to permit parties to resolve conflicts through an appropriate compliant resolution procedure. Suchey and Huefner (1998) expressed a need to increase training and implementation of conflict resolution strategies with a desire to prevent a due process hearing. Established laws give little direction with respect to determining an appropriate dispute resolution model, selecting dispute resolution processes, or evaluating dispute resolution performance or program accomplishments (Markowitz, Ahearn, & Schrag, 2003).

According to Mueller and Carranza (2011), a need exists for deeper understanding in order to develop less adversarial resolution practices and evaluate dispute resolution processes. Because of conflicts expressed by parents of children with disabilities and school district employees, this is a national topic to address for educator preparation programs, current educators and researchers (Pudelski, 2013). Currently, special education conflict resolution practices need improvement (Lake & Billingsley, 2000; Zirkel, 2008).

According to Mueller and Carranza (2011), one form of alternative dispute resolution strategy used in many states is Facilitated Individualized Education Plan (FIEP) meetings. FIEP is a form of dispute resolution involving a neutral third party who assists disputants in negotiating a resolution. During the FIEP meeting, a trained facilitator helps with identifying the positions and interests of the parties (Martin, 2010). Facilitators use their skills to encourage the team in crafting an agreement that can lead to an effective Individual Education Plan (IEP) for students with disabilities (Martin, 2010; Mueller, 2009a).

FIEP meetings are an alternative dispute resolution strategy that can allow parents and educators to think creatively and problem-solve as a team. This method gives parents and educators the ability to resolve disputes before positions and emotions become rigid (Martin, 2010). Although infrequent, researchers indicate early conflict resolution activities such as FIEP can be successful for maintaining positive school relations and collaboration when disagreements arise (Mueller & Carranza, 2011). However, Consortium for Appropriate Dispute Resolution in Special Education (CADRE) (2016) researchers reported only 29 states offered FIEP statewide. According to Mueller and Piantoni (2013), additional research is needed to support the FIEP process. There is also a need to implement FIEP meeting procedures in more states as an effective resolution strategy.

### **Due Process Is a Procedural Safeguard Right**

The *Notice of Procedural Safeguards: Rights of Parents of Students with Disabilities* is a written document given to parents by the school district that explains specific procedural rights for parents of children with disabilities (Weber, 2008; Wright & Wright, 2007). Under IDEA, all parents or guardians must receive a copy of this document, and IDEA gives specific regulations as to when the school district is required to distribute this document to parents or guardians (Weber, 2008; Wright & Wright, 2007). These safeguards attempt to level the playing field between parents and the school district (Rothstein & Johnson, 2010). School district personnel must provide these safeguards to parents because parents have a right to notice and consent (Weber, 2008). Parents also have the right to participate in the development of their child's IEP. Parents are provided with advanced notice prior to any significant actions carried out by the school district and, when feasible, given notice in the native language of the parents (Wright & Wright, 2007).

Procedural safeguards available to parents and students include matters relating to identification, evaluation, or placement in a special education program or an interim alternative educational setting (Weber, 2008; Wright & Wright, 2007). Procedures to protect the rights of children with disabilities also apply to provision of Free Appropriate Public Education (FAPE). Consent and notice must be given to parents when the school district is considering changes that may impact FAPE (Yell, 2006). The school district is required to provide written prior notice to parents or guardians when a copy is requested or whenever district personnel propose to initiate or change services related to identification, evaluation, or

educational placement of the student (Weber, 2008; Wright & Wright, 2007). Parents or guardians are also given notice when a due process complaint is filed (Rothstein & Johnson, 2010). Additionally, IDEA requirements include the right for parents to examine educational records, contribute in evaluation and placement meetings, request an independent educational evaluation at the cost of the school district, and present information about disagreements at an impartial due process hearing (Rothstein & Johnson, 2010).

Each procedural protection has been guaranteed for the intent of creating safeguards assuring that the rights authorized for children with disabilities in accordance with FAPE are truly provided to parents and children (Yell, 2006). These safeguards are included to inform parents completely about mandated rights available under IDEA, and the right to an education is protected by fair procedures under the law. Due process is to substantiate fairness in the identification, evaluation, service, and placement of a student with a disability (Wright & Wright, 2007). This process is to provide equal consideration of interest of all who are engaged in dispute issues related to the education of the student with a disability (Rothstein & Johnson, 2010; Zirkel & McGuire, 2010).

### **Due Process Hearing**

Parents and school districts can challenge elements of an IEP through the mechanism of a due process (Weber, 2008; Yell, 2006). The due process hearing is a formal, quasi-judicial forum for both parties in the dispute to present evidence and arguments to an impartial hearing officer (Yell, 2006). The impartial officer hears both sides of an argument, analyzes the evidence and issues, and then renders a decision. Decisions made by the impartial hearing officer focus on federal and state laws (Wright & Wright, 2007; Yell, 2006). Often used as a guide for decision-making by the impartial hearing officer are previous precedents determined through other court decisions and due process hearings (Wright & Wright, 2007). Parties who disagree with decisions made by the hearing officer may seek redress in the appellate and federal courts (Wright & Wright, 2007; Yell, 2006). Though formal procedures result in a decision, these due process hearings take away the opportunity for parents and school districts to make decisions, and impose monetary costs, emotional stress, and create adversarial relationships (Mueller, 2009a; Mueller & Carranza, 2011).

### **Removal of Decision-Making Power**

Due process proceedings take place in a court, and these proceedings require an impartial hearing officer to examine the evidence in the case of both the parents and the school district neutrally (Weber, 2008). This process removes participants as decision makers and relegates decision enforcement to an impartial hearing officer (Weber, 2008; Yell, 2006). Procedurally this is an adjudicated process compared to a consensual process. Adjudicated procedures limit the involvement of individuals and do not give parties the opportunity to have much input in their own decisions (Weber, 2008). An impartial hearing officer hears evidence and decides the outcome based on criteria predetermined by IDEA regulation or previous precedent cases (Weber, 2008; Yell, 2006).

### **Facilitation in Special Education**

Limitations that are damaging to supportive, collaborative relationships exist when utilizing formal dispute resolution practices for parents and the school district. A more effective strategy for parents and school district personnel would be to make use of a proactive option of facilitation in lieu of formal due process procedures in settling disputes (Mueller & Carranza, 2011). Even though formal procedures remain in the regulations as a needed provision to safeguard individual rights, facilitation as an alternative dispute resolution method offers both parents and school districts personnel an opportunity to make decisions more collectively (Mueller, 2009a; Mueller & Carranza, 2011). Facilitation supports a less adversarial dispute resolution process with collaborative practices and effective support regarding student-centered educational service programming and planning (Lombardi & Ludlow, 2004; Mueller, 2009a; Zirkel, 2008).

The purpose of facilitation in special education is to resolve differences between parents and educators in an environment that provides a powerful and highly beneficial alternative compared to other existing adversarial methods

(Hogan, 2009). Facilitation is a voluntary process IEP team members can agree to use; the intention is to have a substantively neutral facilitator present to make communication and problem solving easier (CADRE, 2014). When contentious interactions and adversarial climates exist, an impartial facilitator helps IEP team members reach agreement on complex or controversial issues (Mueller & Carranza, 2011). Impartial facilitators assist the IEP team members to communicate more effectively, problem-solve, focus on student outcomes, and develop agreement to the mutual satisfaction of the participants (Martin, 2008). Facilitators do not impose or have authority over decisions made in the IEP meeting.

Facilitation gives parents and school districts an equal opportunity to solve disagreements by mutually crafting an agreed upon individualized educational program that exhibits appropriate educational or developmental needs of the student with a disability (Martin, 2010; Mueller, 2009a). Through facilitation, the discussion coordinator guides parties with an open dialogue and assists the team to resolve conflicts during the meeting. Navigated by the facilitator, the disputants focus their energy on the child's educational needs (Martin, 2010; Mueller, 2009a).

Some primary benefits identified with the use of a facilitation method for IEP team members is building stronger relationships, improving communication, and reducing the adversarial and costly nature of disputes (CADRE, 2014; Mueller, 2009a). This alternative dispute resolution strategy helps build and improve relationships between parents and school personnel. Fostering strong communication and problem-solving skills among parties is necessary to develop an appropriate IEP for the child (Egbert & Salsbury, 2009; N. Martin, 2010). Accordingly, this type of alternative dispute procedure can lead to solutions without causing adversarial emotional distress or financial burden (Mueller & Carranza, 2011). The facilitation process affords the opportunity to exercise safeguard rights without high financial and emotional costs (Martin, 2010).

### **Theoretical Framework**

The theoretical framework was Rogers' facilitation theory (Hogan, 2009; Oxford Centre for Staff and Learning Development, 2002). The critical principle of this theory is the student will learn with the educator functioning as a facilitator (OCSLD, 2002). Effective facilitation requires understanding of individual's different perspectives, backgrounds, and priorities. These traits may lead to clashes, which stifle group progress and process (Hogan, 2009). Therefore, effective facilitators require strong public speaking skills, content neutrality, active listening, ability to protect the process, coaching, and providing feedback (Hogan, 2009; Rogers, 1983). Successful facilitation requires a leader in action to involve all parties and individual positions by means of an empowering process (Hogan, 2012).

Facilitation is a comparatively new practice in the special education alternative dispute resolution framework. Research on Facilitated IEP (FIEP) is in the early stages of development. Patterns and trends identified in this study will contribute a foundation for the initial research concerning the efficacy of this process in the special education alternative dispute resolution framework and help states provide a better quality of special education conflict resolution practices.

### **Methods**

Exploratory sequential mixed methods design begins with qualitative exploration followed by a quantitative step of analysis to point out relationships derived in the qualitative data (Creswell, 2015). According to CADRE (2016), 29 states offer a Facilitated IEP (FIEP) process and each state department provides information related to FIEPs on a public website (Appendix A). The information on these websites was the data for this study. There is no requirement for uniform data; therefore, information varied from state to state.

### **Research Purpose and Questions**

The purpose of this exploratory sequential mixed methods study was to examine the use and effectiveness of FIEPs in the 29 states with existing facilitative plans. Data analysis involved reviewing alternative dispute resolution options of

FIEPs through website data from 29 states in the United States. The following research questions guided the investigation of this study:

R1: To what extent did the FIEPs reflect effective oversight?

R2: To what extent did the FIEPs reflect effective professional standards?

R3: To what extent did the FIEPs reflect effective awareness and outreach?

R4: To what extent did the FIEPs reflect effective evaluation?

The exploratory sequential mixed method has two phases (Creswell, 2015).

Initially, Phase 1 involved the qualitative portion of this study, and this included a document analysis of written sources presented on the 29 state educational websites. Document analysis included data collected for review and evaluation both electronic and printed information from these websites (Martella et al., 2013). The first phase involved categorizing qualitative data according to components in the rubric. In Phase 2, data was evaluated by category.

### Research Instruments

CADRE and Project Forum reports contain recommendations related to FIEPs for states to develop, implement, and improve alternative dispute resolution systems and processes (Henderson, 2008; Henderson & Moses, 2008). These recommendations are the components of the rubric to evaluate the data in this study. There are 13 components in the rubric (Appendix B). Four over-arching categories contribute to improving effective practices: a) oversight, b) professional standards, c) awareness and outreach, and d) evaluation. Four options for ranking were exemplary, proficient, developing, and emerging. Three knowledgeable individuals reviewed the rubric to determine the validity of the components. Two retired special education directors and one special education administrator helped decide if the design of the questions supported the overarching research question and sub-question.

### Data Collection and Analysis

Posted documents were collected for further investigation through the review of online pages for each state's department of education FIEP meeting practices. Both electronic and printed information from these websites were collected for document analysis (Martella et al., 2013). The researchers analyzed each document from the websites of the 29 states with existing FIEPs using the rubric to decide which of the 13 components outlined by CADRE and Project Forum (Henderson, 2008; Henderson & Moses, 2008).

During the first phase, the researcher and co-rater investigated the qualitative information to verify if the 13 competencies in the rubric were present. The researcher and a qualified co-rater read the website postings independently. CADRE and Project Forum reports outlined criteria that served as a framework for qualitative analysis categorizing information according to existing themes (Henderson, 2008; Henderson & Moses, 2008). Themes shift from general to very specific when using deductive coding (Martella et al., 2013). Together, the researcher and co-rater collaborated on the results of the coded data. The researcher and co-rater then categorized each state's website on a proficiency scale.

In the second phase, the researcher used quantitative research to analyze content of each website according to each component of the rubric. The web content for each state was evaluated for the level of development according to the rubric. In order to answer each research question, the researcher tallied the number of states at each level and used frequencies to show how many state educational department websites were at each level of proficiency.

## Findings

### Research Question 1: To what extent did the FIEPs reflect effective oversight?

The oversight category included five components (Table 1). System design, the first component, relates to the materials provided by the state educational agency on the process and practice of FIEP. Although 14 states were exemplary,

Wisconsin had the strongest plan with exceptionally clear documentation about the development of the FIEP process and in-depth information on the FIEP practices within the state.

Table 1

*Oversight of FIEPs*

Oversight	Emerging	Developing	Proficient	Exemplary
System Design		NM, MT, AK, CT	DE, SD, SC, LA, NH, MS, OH, MA, DC, OK, AR	WI, PA, IA, TX, UT, MD, WA, ND, ID, MI, MN, NC, IN, FL
Law/Regulations/ Policy/Procedure/ Guidance		OK	PA, WA, SD, LA, NH, NM, DC, MT, AK, AR, CT	WI, IA, TX, UT, DE, MD, SC, ND, ID, MS, OH, MI, MN, MA, NC, IN, FL
Stakeholder Involvement in Advisory Role/Review	AK, CT	LA, NH, MA, NM	UT, DE, MD, WA, SD, SC, ND, MS, OH, DC, IN, MT, OK, AR	WI, PA, IA, TX, ID, MI, MN, NC, FL
Data Tracking/Forms	DE, MD, WA, ID, MA, MT, AK, AR, FL, CT	PA, IA, TX, UT, ND, LA, NH, OH, MI, NM, OK	SD, SC, MS, MN, DC, IN	WI, NC
Letter Templates/ Communications	DE, MD, WA, NH, MS, MA, MT, AK, CT	SD, OH, MI, NM, OK, FL	PA, TX, UT, SC, ND, LA, ID, MN, DC, IN, AR	WI, IA, NC

Eleven states were proficient with consistent documentation provided by the state educational agency about the process and practice. These states lacked the detail of system design. For example, Mississippi put FIEP information into a one-page document with a brief overview of system design. The four states with developing system design provided limited information related to the process and practice of FIEP. When considering the four states with developing system design, information was very difficult to find or superficial.

Law, regulations, policy, procedure, and guidance were the second component of oversight. Of the 39 states, 17 were exemplary. Iowa supplied a comprehensive document related to laws and guidelines of IDEA.

The third component for oversight was stakeholder involvement in an advisory role and review. Involvement included how stakeholders design, implement, evaluate, and improve the FIEP process. Of these nine states, Wisconsin was outstanding with obvious icons for stakeholders to access and understand their role in the FIEP process. However, many of these states, such as Washington, used only short statements to explain stakeholders' involvement in the FIEP process and lacked an explanation of the role of these stakeholders. Four states were identified as developing with inconsistent evidence of full information for stakeholders, while two states were emerging with no evidence of comprehensive information for stakeholders.

Data tracking correlates with data collection and methods used to track implementation practices at the state level. This component also refers to forms related to decision outcomes and checklists for tracking completed steps in FIEP disputes. Wisconsin and North Carolina both have comprehensive data tracking processes and forms for all stakeholders to submit. Many states have a form, but limited information is collected from parents or school districts. For example, Louisiana has a form, but the form has only basic contact information and lacks the opportunity to explain why an FIEP meeting is being requested.

The last component was letter templates and communication. Most websites displayed sample letter templates and forms for communication with parents, families, schools, and facilitators. North Carolina has substantive means for communicating with stakeholders and provides letter templates to communicate information specifically to parents and/or school districts. Of the 11 states proficient states, the majority only communicated FIEP information with the use of a brochure without templates for letters for communicating with stakeholders.

Of the five components in the oversight category, system design and law were the best developed. Many states had clear evidence of exemplary practices in these two areas. However, data tracking and forms have little to no information related to procedures for tracking data collection. Letter templates and forms of communication were more scattered across the proficiency scale for all of these states compared to the other four components.

**Research Question 2: To what extent did the FIEPs reflect effective professional standards?**

Two components comprised the professional standards category (Table 2). The personal and human resource component included training and technical assistance for facilitators. This component encompassed compensation, a method of assigned cases, and caseload management for a facilitator. In Maryland, documents contained specific information related to training course hours, number of days for training, and content taught within the training. Training and technical assistance for professional development, the second component, included training manuals, training descriptors, and professional development provided to stakeholders or facilitators.

Table 2  
*Professional Standards of FIEPs*

Professional Standards	Emerging	Developing	Proficient	Exemplary
Personnel/Human Resources	LA, AR, CT	NH, MS, OH, MA, NM, MT, AK	PA, UT, WA, SD, SC, ND, ID, MI, MN, NC, DC, IN, FL	WI, IA, TX, DE, MD, OK
Professional Development	LA, AR, CT	ND, NH, MS, OH, MN, MA, NM, DC, IN, MT, AK	PA, UT, MD, WA, SD, SC, ID, MI, NC, FL	WI, IA, TX, DE, OK

Overall, personnel and human resources provided consistent information related to training and technical assistance for facilitators. However, very few states had specific information related to FIEP training and technical assistance for professional development. Most states (n=14) had limited to no information related to FIEP professional development.

**Research Question 3: To what extent did the FIEPs reflect effective awareness and outreach?**

As reported in Table 3, the awareness and outreach category included four components. The first component was brochures and posters comprised of educational or promotional printed materials related to FIEP. All 11 exemplary states gave distinct information about FIEP in both English and Spanish. Parents and school districts can also access this information very easily. Although seven states were proficient, this information also encompassed other component areas of the awareness and outreach category. For example, the awareness and outreach category contained some of the information related to brochures, but was not easily located.

Table 3

*Awareness and Outreach of FIEPs*

Awareness and Outreach	Emerging	Developing	Proficient	Exemplary
Brochures/Posters	NH, MS, MA, CT	TX, LA, DC, MT, AK, OK, AR	UT, MD, SC, OH, NC, NM, FL	WI, PA, IA, DE, WA, SD, ND, ID, MI, MN, IN
Website and Online-only Material	MA, AK, AR, CT	MD, LA, NH, MS, NM, MT	TX, UT, SD, SC, ND, ID, OH, MN, DC	WI, PA, IA, DE, WA, MI, NC, IN, OK, FL
Fact Sheets/FAQs	LA, NH, MS, MA, AR, CT	MT, AK	DE, MD, WA, SD, OH, MI, NC, NM, DC, OK, FL	WI, PA, IA, TX, UT, SC, ND, ID, MN, IN
Guidelines/Manuals for parents/LEA Staff	LA, NH, MS, AK, AR, CT	MA, NM, MT	PA, UT, MD, WA, SD, SC, ND, OH, MI, MN, NC, IN, OK, FL	WI, IA, TX, DE, ID, DC

The second component in awareness and outreach was website and online-only material. These were relevant to educational or promotional material about the FIEP including videos and other forms of media. Florida had distinguishable videos for parents and school districts to support understanding FIEP educational and promotional material. For example, the video featured the FIEP process with a parent interview and a mock FIEP meeting. These six developing states had limited information have website links to CADRE, which only provided general information to parents and school district staff. For example, Montana has a special education link for CADRE, but stakeholders are unable to obtain state-specific information related to website and online-only materials.

The third component in awareness and outreach was fact sheets and frequently asked questions (FAQs). The 10 exemplary states had clearly labeled icons leading to fact sheets and/or FAQs. Two states, Montana and Alaska, were recognized as developing with minimal evidence of factual information identified with FIEP due to limited information about educational and promotional materials related to FIEP.

The fourth component in awareness and outreach was guidelines and manuals for parents and LEA staff. This included guidance documents for educational or promotional information about FIEP in formal procedural safeguards,

notices, guidebooks, and training materials. The exemplary states had detailed guidance documents. Wisconsin had the greatest detail in the plans with outstanding guidelines and manuals for parents and school districts and also a multitude of publications for stakeholders. Many states (14) were proficient with consistent evidence of guidance documents.

Of the four components in the awareness and outreach category, brochures, posters, website, and online-only material represented a substantial amount of clear promotional material about FIEP. Additionally, the majority of states that were clear in these areas also had consistent or distinct fact sheets and FAQs, and guidelines for parents and LEA staff. Alternatively, states with limited to no evidence of this information typically were either developing or emerging within all four components of awareness and outreach category.

**Research Question 4: To what extent did the FIEPs reflect effective evaluation?**

Two components comprised the evaluation category (Table 4). The first component included materials and instruments related to evaluating FIEP processes and facilitators. North Carolina had the strongest plans with comprehensive measures for using evaluation instruments to evaluate FIEP processes and training. The majority of states (20) were emerging with no evidence of evaluation instruments used to assess FIEP processes and FIEP training programs. These states lacked evaluation instruments for improving the FIEP process and supporting FIEP training.

Reports, summaries, or analyses related to evaluation activity of FIEP program. This component pertained to analyzing patterns and trends with recommendations to improve facilitator effectiveness and the facilitation process. North Carolina was the one state with exemplary practices and evidence of evaluation data that was recognizably unique compared to other states in order to improve the facilitation process.

Table 4  
*Evaluation of FIEPs*

Evaluation	Emerging	Developing	Proficient	Exemplary
Materials/Instruments related to evaluating FIEP Processes and Facilitator	TX, DE, MD, WA, SD, ND, LA, ID, NH, MS, OH, MI, MA, NM, IN, MT, AK, AR, FL, CT	IA, UT, OK	PA, SC, DC	WI, MN, NC
Reports, Summaries or Analysis Related to Evaluation Activity of FIEP	IA, TX, DE, MD, WA, SD, ND, LA, ID, NH, MS, OH, MI, MN, MA, NM, IN, MT, AK, AR, FL, CT	WI, UT, SC, DC, OK	PA	NC

Neither component in the evaluation category was well developed; both lacked evidence of an evaluation instrument or process to collect evaluation data for analyzing the FIEP process. Only one state, North Carolina, had clear evidence of an evaluation instrument and distinct collection of evaluation data to analyze the FIEP process. Essentially these two components of the evaluation category lacked significant educational information compared to the other three overarching categories.

### Recommendations

Rogers' facilitation theory has one main principle: learning transpires by the educator serving as a facilitator (Hogan, 2009; OCSLD, 2002). The theoretical framework was evident in the four categories, particularly in oversight, professional standards, awareness and outreach, and evaluation. The most distinguishable category in the instrument pertaining to facilitation theory was a professional standard.

Professional standards involved the training and professional development of the facilitator. Therefore, the critical belief of this theory is learning occurs with a well-trained educator functioning as a facilitator (OCSLD, 2002). Professional development improved the facilitator's understanding of different perspectives, backgrounds, and priorities of the other individuals involved. The outcomes of assessing the proficiency of the 29 states involved within the professional standards category indicated a continued need for training and professional development for personnel. Without proper training, ineffective practices can lead to unnecessary clashes that stifle the group progress and process (Hogan, 2009).

Finally, facilitators with effective traits and practices have strong public speaking skills, maintain content neutrality, listen actively, protect the process, and provide strong feedback (Hogan, 2009). Successful facilitators involve all parties and individual positions through an empowering process (Hogan, 2012). The three categories from the research instrument—oversight, awareness and outreach, and evaluation—involved all of these practices. Those categories were a framework for communicating purposeful intent for the FIEP process, improving the process through a survey from all stakeholders at the end of an FIEP meeting, and enabling FIEP members to communicate and maintain trusting relationships.

Educators in developing or emerging states regarding oversight should establish clear documentation about the development of the FIEP process and in-depth information of FIEP practices. Wisconsin and Iowa are excellent examples in terms of strong documentation related to process and practice of FIEP. Iowa also provided comprehensive documentation related to laws and guidelines of IDEA. Additionally, other states could make use of the model Wisconsin has established with easily identifiable website icons for stakeholders to access clear information in understanding their role in the FIEP process.

Wisconsin and North Carolina have established comprehensive data tracking processes and forms that are very clear for all stakeholders. Implementing data tracking processes and forms need to improve for more than half of the 29 states in the study. Wisconsin and North Carolina are also good examples for providing letter templates to communicate information to parents and/or school districts.

Professional standards involved standards and professional development. Employing practices from states such as Wisconsin and Texas could help establish specific FIEP training and technical assistance for professional development and educator preparation. Only Texas has enacted state regulations for providing facilitation and expectations for facilitators to assist FIEP members. Other states might benefit from implementing similar state regulations in order to help stakeholders better understand facilitation as an option for alternative dispute resolution.

A few states in the emerging range for all four components of awareness and outreach category. States such as Wisconsin or Pennsylvania could be models for emerging or developing states to improve brochures and posters to provide clear educational or promotional printed materials related to FIEP. Additionally, providing brochures and posters in other languages besides English would be beneficial for non-English speakers. This information may help stakeholders better understand facilitation processes and practices.

The second component in the awareness and outreach category was website and online-only material. Florida provided informative videos to help parents and school district personnel understand FIEP process by providing educational and promotional material. Additionally, other states could make use of the model North Carolina has established with easily accessible website icons for stakeholders. Additional data related to FIEP may not have been linked to the state websites. For example, Texas has information related to FIEP, but the state educational agency contracts a regional service center to

provide educational and promotional online material. However, the website for Texas does not provide a link to this additional information. State educational agencies could create a website icon to link this supplemental data for stakeholders.

Wisconsin and South Carolina were exemplary for outreach and awareness with comprehensive fact sheets and FAQs. Implementing fact sheets and FAQs could greatly improve knowledge of the FIEP process for stakeholders.

Evaluation was the most deficient category as the majority of states were emerging on the proficiency scale for both of these components. North Carolina included surveys for stakeholders to complete, and used the survey data to improve FIEP processes and training. Applying the North Carolina plans for materials and instruments could support improvement practices related to evaluating FIEP processes and training. The other component for evaluation is reports, summaries, or analysis related to evaluation activity of FIEP. One recommendation is to consider North Carolina as a model for collection of longitudinal data to help improve facilitation processes.

### **Conclusions**

The results of this research can inform parents and educators concerning the effectiveness of this process in the special education alternative dispute resolution framework. A positive outcome would be to establish a better quality of special education conflict resolution practices. Moreover, the data collected and analyzed in this study may provide the field of special education with many ideas for further inquiry.

Further studies should also follow FIEP meeting outcomes to determine the frequency of decisions concluding in agreement between parents and school district personnel. There is a need for a longitudinal study to monitor states' success utilizing FIEP meetings. Investigating state agency practices over a period of time could provide evidence on how oversight, professional standards, awareness and outreach, and evaluation have changed after the implementation of FIEP meetings. Detailed information could further clarify others challenges, which may assist with improving existing FIEP plans or help educators in states without an FIEP process as an alternative dispute resolution strategy. Data collected may reveal additional needs for professional development and help improve FIEP programming.

Disparity of knowledge exists in special education. Schools understand procedural safeguards and parents know about their child. This creates a disparity of power in the IEP decision-making process. There is a need to level out the playing field especially related to the disparity of knowledge. We need to educate our parents and schools to this disparity of knowledge. (Turnbull & Turnbull, 2017)

Parents of children with disabilities want a fair education for their child. When school districts provide fairness in decision-making about services and programming for students with disabilities, then parents are more likely to believe they have reasonable due process. Additionally, states with well-developed FIEP processes can provide clear information to parents, school districts, and other stakeholders, which will decrease the disparity of knowledge and result in a better quality of special education conflict resolution practices. These same states can serve as a model for other states that want to develop their own FIEP process. The outcomes of this study suggest states with existing FIEP plans should take necessary measures to ensure website data is clear and provides knowledge for all IEP decision makers.

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Appendix A  
29 States

Alaska  
Arkansas  
Connecticut  
District of Columbia  
Delaware  
Florida  
Iowa  
Idaho  
Indiana  
Louisiana  
Massachusetts  
Maryland  
Michigan  
Minnesota  
Mississippi  
Montana  
New Hampshire  
New Mexico  
North Carolina  
North Dakota  
Ohio  
Oklahoma  
Pennsylvania  
South Carolina  
South Dakota  
Texas  
Utah  
Washington  
Wisconsin

Appendix B  
Rubric

Oversight	Emerging	Developing	Proficient	Exemplary
System Design	Documentation on how the process and practice is provided by the state educational agency is not evident.	Documentation on how the process and practice is provided by the state educational agency is somewhat evident.	Documentation on how the process and practice is provided by the state educational agency is consistently evident.	Documentation on how the process and practice is provided by the state educational agency is clearly evident.
Law/Regulations/Policy/Procedure/Guidance	No evidence of laws and guidelines related to materials of IDEA.	Inconsistent evidence of laws and guidelines related to materials of IDEA.	Consistent evidence of laws and guidelines related to materials of IDEA.	Clearly defined evidence of laws and guidelines related to materials of IDEA.
Stakeholder Involvement in Advisory Role/Review	No evidence of comprehensive information for stakeholders.	Inconsistent evidence of comprehensive information for stakeholders.	Consistent evidence of comprehensive information for stakeholders.	Clearly defined evidence of comprehensive information for stakeholders.
Data Tracking/Forms	Procedures for tracking data collection are not evident.	Procedures for tracking data collection are somewhat evident.	Procedures for tracking data collection are consistently evident.	Procedures for tracking data collection are distinctly evident.
Letter Templates/Communications	No evidence of letters and forms to communicate with stakeholders.	Inconsistent evidence of letters and forms to communicate with stakeholders.	Consistent evidence of letters and forms to communicate with stakeholders.	Clearly defined evidence of letters and forms to communicate with stakeholders.

Appendix B, Cont'd.

Professional Standards	Emerging	Developing	Proficient	Exemplary
Personnel/Human Resources	No evidence of information is provided related to training and technical assistance for facilitators.	Limited information is provided related to training and technical assistance for facilitators.	Consistent information is provided related to training and technical assistance for facilitators.	Distinct information is provided related to training and technical assistance for facilitators.
Professional Development	No evidence of information is provided related to FIEP training and technical assistance of professional development.	Limited information is provided related to FIEP training and technical assistance of professional development.	Consistent information is provided related to FIEP training and technical assistance of professional development.	Distinct information is provided related to FIEP training and technical assistance of professional development.
Awareness and Outreach	Emerging	Developing	Proficient	Exemplary
Brochures/Posters	No evidence of educational or promotional printed materials related to FIEP.	Minimal evidence of educational or promotional printed materials related to FIEP.	Consistent evidence of educational or promotional printed materials related to FIEP.	Clear evidence of educational or promotional printed materials related to FIEP.
Website and Online only Material	No evidence of website links related to educational or promotional material about FIEP.	Minimal evidence of website links related to educational or promotional material about FIEP.	Consistent evidence of website links related to educational or promotional material about FIEP.	Clear evidence of website links related to educational or promotional material about FIEP.
Fact Sheets/FAQs	No evidence of factual educational or promotional materials about FIEP.	Minimal evidence of factual educational or promotional materials about FIEP.	Consistent evidence of factual educational or promotional materials about FIEP.	Clear evidence of factual educational or promotional materials about FIEP.
Guidelines/Manuals for parents/LEA Staff	No evidence of guidance documents.	Minimal evidence of guidance documents.	Consistent evidence of guidance documents.	Clear evidence of guidance documents.

Appendix B, Cont'd.

Evaluation	Emerging	Developing	Proficient	Exemplary
Materials/Instruments related to evaluating FIEP Processes and Facilitator	No evidence of evaluation instruments used to evaluate FIEP processes and FIEP training programs.	Minimal use of evaluation instruments to evaluate FIEP processes and FIEP training programs.	Consistent use of evaluation instruments to evaluate FIEP processes and FIEP training programs.	Clearly evident use of evaluation instruments to evaluate FIEP processes and FIEP training programs.
Reports, Summaries or Analysis Related to Evaluation Activity of FIEP	No evidence of evaluation data used to analyze FIEP activity to improve facilitation process.	Minimal use of evaluation data to analyze FIEP activity to improve facilitation process.	Consistent use of evaluation data to analyze FIEP activity to improve facilitation process.	Clearly evident use of evaluation data to analyze FIEP activity to improve facilitation process.

# OUTSIDER TRANSPLANTS AT A HISPANIC SERVING INSTITUTION (HSI): TEACHER EDUCATORS ENACTING AN ETHIC OF CARE

**Karin Ann Lewis, Ph.D.**

University of Texas Rio Grande Valley

**Jacqueline B. Koonce, Ph.D.**

University of Texas Rio Grande Valley

## Abstract

*Applying an ethic of care as a theoretical framework to inform our work, the authors engaged in a collective biography writing process to explore caring within the context of the teaching-learning relationship. The following paper provides glimpses into intentional teaching enactments of caring and our experiences with our students' reciprocity. The enactment of care could greatly enhance the teaching and learning experiences of teacher educators, preservice teacher candidates in teacher preparation programs, and ultimately the students in their future classrooms. Reflecting on and examining our own diverse experiences and perspectives, our other-ness and insider-outsider status, informs our decisions for how we develop our teaching-learning relationships. Analyzing and sharing our decisions in how we practice the art and science of teaching future teachers, viewing our craft through the lens of an ethic of care, helps us develop intentionality and a richer repertoire of purposeful instructional tools.*

Keywords: teacher education, ethic of care, teaching-learning relationships, diversity

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The authors' collective biography writing process evolved organically. In the beginning, we simply recognized our shared interest and experiences and welcomed the opportunity to collaborate. An activity during a college-wide retreat planted the seed, which we have cultivated into the following paper. During the retreat, the faculty divided into small groups of people from various departments and disciplines. The authors first met each other in one of those groups. We created drawings of our backgrounds, experiences, and interests that ultimately led to our being at the university, a large Hispanic-Serving Institution (HSI) in Texas situated on the US-Mexican border. Each person shared her drawing with the group and explained each item included in the picture. The activity provided the refreshing opportunity to meet colleagues who spoke with passion about teaching and cared deeply about students. We encountered kindred spirits. The experiences we shared resonated with each of us, and we agreed to work together on some kind of project related to the teaching-learning relationship and what it means to care. What does care look like in teaching? The following paper provides glimpses into those intentional teaching enactments of caring and our experiences with our students' reciprocity. We believe the enactment of care could greatly enhance the teaching and learning experiences of teacher educators, preservice teacher candidates in Teacher Preparation Programs, and ultimately the students in their future classrooms.

### An Ethic of Care

Noddings' (2003) ethic of care theoretical framework informs our work. She relates caring to empathy and understanding of what students expect of teachers. The person initiating care (in our case, the teacher educator) is called the one-caring, and the one receiving care is called the cared-for (our students). Noddings states, "Our attention, our mental engrossment is on the cared-for, not on ourselves" (p. 24), adding that our actions are dependent on the needs of the cared-for. That is, we should base our pedagogical decisions on the needs of the cared-for and not our own. Likewise, the cared-for also have a responsibility in this relationship with the one-caring through reciprocity of caring. Reciprocity is important to the maintenance of the relationship, and prevents the cared-for from turning on the one-caring in concern for self (Noddings, 2003). As teacher educators, we tend to give more of ourselves when our enactments of care are reciprocated. We found that, once the recursive process of this kind of empathic caring begins, reciprocity initiates an inspiring cycle, a relationship of care that influences meaningful, mutual learning.

Moreover, caring is integral to engaging students of color. Delpit (1995) alludes to a breakdown in relational caring when "teachers see little in common or shared in purpose with their students. The academic success of students from subordinated backgrounds lies very much in the quality of the relationships which their teachers establish with them... the form of caring they demonstrate" (Beauboeuf-Lafontant, 2008, pp. 251-252). Angela Valenzuela (1999) focuses on teacher caring as the source of Mexican-immigrant and Mexican-American students' success. Students desire authentic caring in which teachers see them as valuable, interesting human beings. Authentic caring is different from the usual aesthetic caring in response to students' school-based attitudes and ideas. Valenzuela suggests authentic caring is a prerequisite for students to care about their education (Beauboeuf-Lafontant, 2008). This evokes the oft-quoted maxim, "They don't care how much you know until they know how much you care" (unknown). We genuinely care about our students and their reciprocity, and our course evaluation comments demonstrate that they sense it.

Caring within the context of the teaching-learning relationship does not mean that one avoids critical care. Wink (2005) suggests that caring and critical pedagogy are not dichotomous. She explains that "pedagogical caring" coincides with "the dialectic of a critical stance" in order to meet current students' needs (p. 168). In our work, we found that students appreciate challenging assignments and high expectations, as well as empathy. For example, we both work with students experiencing extenuating circumstances, yet we still expect excellence in their final assignments. We hold high standards and expect students to display professional dispositions. Therefore, like Wink, we believe that caring and critical pedagogy are synergistic.

Our care, our love even, has helped us transcend racial and linguistic boundaries. We strive to embody what Freire (1998) stated:

It is indeed necessary that this love be an "armed love," the fighting love of those convinced of the right and the duty to fight, to denounce, and to announce. It is this form of love that is indispensable to the progressive educator and that we must all learn (p. 41).

Bartolomé (2008) honors Jesús "Pato" Gómez whom she states, "focused on the revolutionary potential of love to equalize asymmetrical power relations among human beings" (p. 1). Gómez believed that love links with equality (Bartolomé, 2008). The care that exists between us and our teacher education students creates an equality among us that we hope our students foster in their own P-12 classrooms, so that their students will also care about their education as a result of their teachers caring for them.

We engaged in a collective biography writing process to compose our paper; it allowed us to compose our story vividly, so that the reader may also see her/his imaginable practice through our eyes (Davies & Gannon, 2006). As we describe our experiences with care, the reader may reflect on her/his own caring practices, and perhaps, prompt ideas for her/his pedagogical repertoire. To begin, we will contextualize our experiences by providing some background information about us as the authors of this paper.

### Outsider Transplants

Although Karin and Jackie come to the University from quite different backgrounds, Karin from a predominantly white university in the north and Jackie from a Historically Black College or University (HBCU) in the south, we soon realized that in moving to the area and acclimating to a culture very different from our own, we had encountered similar/parallel experiences. We discussed our experiences as outsiders, new to the culture and the surprises and unanticipated challenges we faced. We shared the ways we very intentionally developed relationships with our students; how we shared our personal and professional experiences and stories with our students so they could get to know us, and how we came to know them.

Karin moved to the area and arrived at the University perhaps a bit naive. I had not anticipated the implications of my newfound minority status within the predominantly Latino/a community. I am made aware of my difference and how I am perceived; I am an outsider, a transplant. My outsider status became salient to my work. Being referred to as *Anglo* resulted in my acute awareness of and initial experience with feeling my outsider-ness, my other-ness. I had never before been identified as or labeled Anglo; it is not part of my self-concept or identity. Being referred to as Anglo felt foreign, uncomfortable, and loaded. Being cast as an Anglo, I found myself in an unfamiliar stereotype. Being Anglo in this region comes with historical baggage. I became much more cognizant of my appearance, visibly standing out among a predominantly Latino/a population, and the implications of assumptions that may be projected onto me. From my internal sense of self and looking out at the world around me, I sometimes forget how starkly different I appear, how very white I am (even my hair is white). For example, after thoroughly enjoying an interdisciplinary co-teaching opportunity leading a workshop on positive psychology and resiliency, at the conclusion my colleague had someone take a group photo. When she later emailed the photo to me, it struck me how much my almost glowing whiteness contrasted so obviously with everyone around me. I stood out as the only white person in the group of over 50 people. It is a curious, foreign feeling to experience moments of acute awareness of being so different from nearly everyone around me. I had not anticipated this, new to me, aspect of being a transplanted outsider.

In describing her initial experiences as an outsider in this context, Jackie first shared with me how she had thought that, coming from an HBCU, she would be able to relate to her students and they to her, perhaps better than others from outside the Latino/a culture, such as myself. Jackie characterized her experiences with faculty at her HBCU as nurturing, they invested in her academic and future career success; they took a deep interest in her, and she felt cared for (Noddings, 2003). She thought that the faculty remained so invested in her, and all their students, because they knew the racism and opposition their students would face in the outside world as they pursued their careers. Collectively, faculty and students took advantage of the predominantly Black environment to foster community, kinship, trust, and care, which sometimes took the face of tough love. Jackie attributes part of her success to this foundation. She described the HBCU faculty's critical caring (Wing, 2005), and consistently being there when she needed them, as phenomenal. Many of her former professors, even at the time of her own faculty appointment at our HSI in this region on the border with Mexico, still take time to advise her. Those fond HBCU memories led Jackie to expect a similar environment at our HSI, and she wanted to be a part of developing students' confidence and academic success through an ethic of care in her own teaching. However, to her surprise, when Jackie arrived at this HSI, a colleague told her that working at an HSI would be very different from her HBCU experience. Jackie's colleague seemed to doubt her commitment to and fit for the institution.

Jackie shared about her initial and ongoing experiences with people asking her, incredulously, why would she come to this region? I, too, am repeatedly asked that same question, and I remain puzzled by the inferred disbelief that anyone would want to come here. The question seems to suggest a level of skepticism or suspicion of our intentions for coming to live and work in the area. Jackie anticipated the suspicion initially, because she is part of a very small percentage of African Americans in the area. As a minority herself, she related to questioning the intentions of outsiders, considering the incredible amount of racism in the United States. She imagined she also may have questioned whether or not outsiders had genuine intentions and truly wanted to uplift those in her race. In her first semester, to address students' anticipated curiosities, she conscientiously composed a script for introducing herself to her students, stating why she moved to this region and our

institution. Admittedly, however, after living in the area and teaching at the institution for a few years, Jackie grew weary of those questions. Nevertheless, she accepts that every semester, many students will pose those questions. She considers it a reality of distrust and racism in our society, and has come to recognize the questions as a way of protecting oneself from outsiders who might have questionable motives.

Jackie also encountered a few colleagues whose comments seemed to insinuate that they questioned her devotion to teaching, research, and service. Such comments hurt and offended her, because she pours her heart and soul into her students, has developed a strong research agenda, and participates in various levels of service, including in the surrounding community. She felt that although she may be qualified for the position, she may be perceived as not quite qualified enough, because she is not Latina.

Both Jackie and I value the opportunity to live and learn in this new cultural context, and we are confident that we contribute to the diversity of our HSI. We share a passion for teaching, an appreciation for diversity, and we both remain highly invested in our students. We hope that our consistent passion for teaching, conducting research relevant to the area, and participating in service to the community will, over time, be the catalyst for demonstrating our integrity and genuine intentions.

### **Enacting an Ethic of Care: Knowing Our Students**

In addition to our experiences as outsiders, new to the culture and the surprises and unanticipated challenges we faced, Jackie and I discovered the similar ways we very intentionally develop relationships with our students; how we share our experiences and stories with our students so they get to know us, and we get to know them.

We believe teaching and learning is a relationship. Like any relationship, it takes effort, attention, and consideration. To engage in conversations with students in order to let them get to know us and for us to get to know them, we make a point of always showing up to class early and staying a few minutes after class. It is important to us to really get to know our students. On the first day of class, I bring colorful cardstock table tents, markers, crayons, glitter pens, stamps, and stickers, and have the students write their names on both sides and decorate their table tents. This is how I learn their names, because as a visual learner I need to see the students' names with their faces. Jackie also gives students large index cards on the first day and asks them to fold the cards horizontally and write their names on the front and back, so that she can associate names and faces with "name tents". She also has students engage in an opening activity; they give their name, major, hometown, if not from the immediate area (we have learned over the years that most of our students are local), course goal (other than an A), and interesting/fun fact.

I point out to my students that they too can do this when they become teachers to learn their own students' names. I ask my students to write three things that are important for me to know about them on the inside of the table tent. I set the table tents on a table near the door, and as students arrive in class they pick up their table tents, take their seat, and put their name tent on the table in front of them. I can see their names and people sitting behind them could see their names as well. This is also how I take attendance. It saves time, and I do not waste class time calling roll. As students arrive, I start class with a conversation about what is going on in their lives, what good things happened since our last class meeting, and I share brief stories about me. I share stories about personal and professional experiences, because I want students to know me as a person. I found that when people know you as a person and feel that you know them, they work harder for you and I work harder for them, because we care about each other. Mutual respect and mutual care reflect reciprocity. I want my students to look forward to coming to class, to enjoy coming to class every day, and when they do, I do too. I really do love teaching. I love getting to know people, particularly people who have different perspectives, life experiences, cultures, and backgrounds than me. I learn more about myself the more difference and diversity we have in our classroom.

### Enacting an Ethic of Care in the Classroom

The process of caring begins even before our classes start. We reach out to welcome our students a couple weeks before the term begins, introducing ourselves and stating how we look forward to our class and the learning journey we are about to embark on together. Several students have admitted to me that they almost dropped my class when they saw I am Anglo. Reaching out in advance helps mediate preconceptions. Once the class begins, we further develop trust and establish a safe space for learning through engaging activities that both model and provoke critical and reflective thinking about classroom practices.

I emphasize that we will start our class meetings on time, and I expect everyone to be in class on time. I talk about being professionals, practicing being a professional and part of that is being on time. I say, “imagine if you are a kindergarten teacher and you don’t show up on time to work... what would happen? Do you think that your principal would find that to be acceptable? How long would you keep your job?” I assert that if being late to work is not acceptable, then it is not acceptable in our class either, because we all need each other for a successful learning experience. Being on time demonstrates respect, respect for each other’s time and investment in our class. I want them to be successful. I share with my students that I would be remiss if I did not hold them accountable to the same expectations that they will face when they become teachers. In my mind, that is one way I demonstrate that I care about my students. I care about their future. I care about the profession, and I want them to be successful. Perhaps I am strict and set high expectations academically and interpersonally in class, yet I hold students to no higher expectations than I have of myself.

I shared with Jackie how I noticed my students, while working in groups during class, would discuss in Spanish, whispering covertly, and then as I walked around the room and came by their table they fell silent or switch to English looking like they had been caught doing something wrong. I asked my students what that was all about. After a very long pause, one courageous student spoke up. He said, “We don’t want to offend you:”. Puzzled as to how being bilingual or speaking in another language would offend me, I explained that my goal is for them to understand the concepts in our course. I recognize that for many students English is not their native language. I assured them that I am certainly not offended, I value bilingualism, and I encouraged them to discuss in whichever language they felt most comfortable to really grasp the concepts. I suspect that they did not really believe I meant it; they seemed tentative and cautious in discussing in both languages. However, after a few weeks, they became more comfortable and trusted that I am true to my word.

We intentionally focus on being attuned to our students. We take notes so that we remember information students share about their families, their work, and their interests. We follow up and ask them about specific things they mention, to demonstrate our genuine interest in them, and how we value their experiences and interests. They in turn become curious about us. We share stories of our own experiences, and when they ask questions about us, our families, and our backgrounds, we share stories and reveal aspects of ourselves that perhaps may resonate with them. I tie in stories of my own experiences into examples of the theories of learning. I use stories about my children and myself as a mother and teacher to illustrate the content of the course. Jackie has also shares stories of how her little sister by 13 years old acquired her literacy practices. We also share classroom management techniques and how to involve families in the learning process.

We also very intentionally add visuals to our slides and media to exemplify concepts. In doing so, we select images of diverse people, including images of individuals with exceptionalities and children, as well as parents and teachers of Latino/a and Mexican descent. We model what we hope they in turn do when they become teachers. We discuss diversity candidly in its broadest and most inclusive conceptualization. We ask them if they notice anything about our choices in visuals and media. They pick up on the diversity, and they discuss the importance of children seeing themselves and their families valued and reflected in instructional materials. We emphasize the need to include culturally-relevant materials and images. We include culturally-relevant articles, so that students can better connect to the material. We share with our students that we also want our own instructional materials to reflect our respect for their background and culture.

Students have shared that they work full-time, have families and responsibilities to their families, whether they have their own children or they contribute to their household with caring for siblings, parents, and grandparents. They juggle

multiple responsibilities and expectations beyond our classes. Karin shares with her students about her experience being a single mother with two teenage daughters caring for her ailing mother, and during that time driving an hour to go to class at night after working all day at school as a full-time teacher. Jackie openly shared with her students when her father passed away right before the beginning of a spring semester and her own challenges with illness. We assure our students that we understand that *Life* happens, and we will work together through whatever challenges arise. We explicitly state that we are not out to get them; we have been in their shoes, and our role is to facilitate their success. We believe their success is our success. Sharing about our own personal experiences, so that they can relate and know that we can relate for real, is another way of demonstrating that we care.

### Enacting Care in Assignments

We care about our students and the quality of our instruction; subsequently, we plan carefully and intentionally; Karin embeds opportunities for students to have agency and autonomy and make choices. For example, for any papers that she assigns, she has each student sign up for their papers' due dates. She asks them to look at their schedules, assignments in other classes, and consider their family responsibilities. Each student selects the week for his or her paper to be due. Students are surprised that they get to choose their assignments' due dates. Karin also gives students choices in their assignments. For example, when she has them research something, they can choose the topic they research so that it is meaningful to them and whatever their field of study is, because she has students in her classes who are preservice teachers for all levels in all subjects. Giving them the option to select topics of interest to them helps them invest in the work and take ownership of it, which then results in better quality work. In their group work, they have options for how to present their work and she encourages them to be creative.

We both apply a variety of project-based assignments and integrate service-learning experiences with our students. Recently, Jackie started using a rapping activity (Saphier & Haley, 1993) to help students review concepts from two different chapters on either vocabulary or reading comprehension. Students work in groups to write down main ideas from their chapter of interest. Then, as a class, they come up with a list of must-haves for each rap. Students are then given time to develop their raps for a class performance, and they are encouraged, but not required, to perform their rap. Jackie does not assign this kind of review to all of her classes, since each class has a personality of its own, but in getting to know her students, she determines if the class' overall personality is up for it. The activity has been successful, and frequently mentioned in her course evaluations.

Karin provides her students the opportunity to design their own final exams, choose how to demonstrate what they learned in the course, such as through a conference-style poster session open to the college faculty and fellow students, or come up with their own proposal for how to be assessed. One class chose to do a video. They enlisted a film student who agreed to lend them his professional camera and helped edit their film. They wrote a script and each student had parts to play. They negotiated use of a classroom at a local public school to do the filming at night. They used props, costumes, developed their characters, and they rehearsed extensively. They acted out the theories studied in class as applied in practice in an elementary school classroom. The three ringleaders met with Karin several times for reassurance and to make sure they drew from and integrated all of the course content. The students researched, repeatedly reviewing the content of the course to make sure that they demonstrated concepts accurately. Their final film remains the most creative demonstration of learning Karin has ever seen. The night of the poster session for another class, at the conclusion of the poster session these students showed their film to all the students and faculty who attended. Half of the film used English and half of the film was in Spanish with English subtitles ("for Professor Karin"). In the scrolling credits the students included a tribute and expression of gratitude and appreciation for Karin and the opportunities for learning in her class; reciprocity of caring. It made Karin cry.

Our efforts to provide creative, self-directed, authentic learning experiences requires extra time and consideration, yet also shows our care about the quality of our students' learning experiences.

### Reciprocity

We came to this particular region to teach, research, and serve the university and surrounding community. We also came to learn the cultural traditions of this unique region from our colleagues and learn along with our students. We did not realize when we arrived, but in enacting an ethic of care in our teaching practice, we experienced reciprocity of care from our students. It is that reciprocity, along with great mentorship from colleagues, that ties us to this institution.

Jackie feels a *phileo*, or brotherly love towards her students. As students learn from and experience the time she invests in crafting engaging, meaningful lessons, and they see how she truly wants to know them, they in turn give back to her. In her first semester, a student, knowing she had no family in the area, invited Jackie to join her family for Thanksgiving dinner. As students reciprocate care, the feeling turns to *epithumia*, a passionate love for teaching her students the content and dispositions needed to be stellar, impactful future teachers. Indeed, that passion results in Jackie's desire to give more and more of herself in response to her overwhelming experience of caring reciprocity, sometimes to the detriment of her own scholarship productivity. This love that Jackie feels for her students reminds her of Freire and Gómez's links of love to equality. She uses her love to transcend the boundaries of race and language.

At the end of each semester, we celebrate our students' hard work. Karin's first semester culminated in a Posada celebration at the class' service-learning site, complete with a giant piñata, traditional homemade tamale holiday meal, and mariachi music. Jackie's second semester, a student brought in several types of Mexican gorditas to acquaint her with foods from the local culture. Our students teach us about aspects of their lives that they want to share and we demonstrate that we value. Likewise, a student brought in tamales from a well-known restaurant an hour away, because she wanted Jackie to taste *quality* tamales. The student made sure Jackie took plenty home with her.

In addition to these caring acts, students have written numerous e-mails, cards, and course evaluation notes thanking us for knowing their names and "caring" (their word) about them. Many express their desire to take another class with us. Some have told us they hope to have the same zeal for teaching we demonstrate when they have their own classrooms.

We share a few of our experiences with reciprocity of care, but it has been our mutual experience that enacting care is actually a recursive series of reciprocal acts. Passionate reciprocal caring is cultivated and grows over the course of a semester. Truthfully, we make tighter connections in some classes more so than in others, but overall the ethic of care process persists. As educators we thrive on it, and we consider it one of the greatest rewards in the teaching-learning relationship.

### Conclusion and Implications for Teacher Educators and Their Students

It is our hope that this paper provides our colleagues with insights, ideas, and perhaps a different perspective on the teaching-learning relationships we cultivate with our students in teacher preparation programs. Reflecting on and examining our own diverse experiences and perspectives, our transplant insider-outsider status informs our decisions for how we develop our teaching-learning relationships based on an ethic of care. Analyzing and sharing our experiences and decisions in how we practice the art and science of teaching future teachers at an HSI, viewing our craft through the lens of an ethic of care, helps us develop intentionality and a richer repertoire of purposeful, culturally responsive instructional tools. How we embody and enact critical caring pedagogy serves as models for how we expect our teacher candidates to engage with their own future students.

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# DIRECT INSTRUCTION VERSUS GUIDED DISCOVERY WITH AT-RISK STUDENTS IN ALGEBRA I

**Dr. Calli Holaway**

Tennessee State University

**Dr. Julie Herron**

Sam Houston State University

## Abstract

*Though research has indicated that successful completion of algebra is vital to high school academic success (Heppen, Sorensen, Allenworth, Walters, Rickles, Taylor, & Michelman, 2017), the most effective methods for teaching students who are at risk for failure have not been definitively identified. Direct instruction and guided discovery are two instructional strategies that have been identified as potentially effective in helping at-risk students learn. This study explored whether guided discovery was more effective at helping at-risk students learn algebra content. Participants in the study experienced either direct instruction or guided discovery for the same mathematical content. Results of the study indicated that guided discovery was not significantly more effective than direct instruction for at-risk students, nor was guided discovery more effective overall. Further research is needed to examine the differences between the two teaching methods.*

Keywords: algebra, direct instruction, guided discovery, mathematics instruction

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Beginning with the passage of No Child Left Behind (2001), special education students, at-risk students, average students, and above average students were placed into the regular mathematics classrooms together. The implication is that teachers are being expected to address the needs of a diverse student population in the high school mathematics classroom. “The emphases on heterogeneity, special education inclusion, and reduction in out-of-class services for gifted learners, combined with escalations in cultural diversity in classrooms, make the challenge of serving academically diverse learners in regular classrooms seem an inevitable part of a teacher’s role” (Tomlinson, Brighton, Herthberg, Callahan, Moon, & Brimijoin, 2003, p. 119). Teacher education programs in the United States train teachers extensively in keeping the average student engaged. However, it seems that there is less of a focus on the most effective ways to engage special education or at-risk students.

There is significant research on the effectiveness of specific interventions in areas, such as reading, with at-risk students; however, there is very little research exploring effective mathematics interventions for students who are at risk of failure (National Research Council, 2002). Research suggests the use of certain instructional strategies are more effective in the inclusive classroom, including direct instruction, discovery learning, cooperative learning, team teaching, and differentiated instruction. However, which of these instructional strategies is most effective for at-risk learners remains unclear.

### Literature Review

Research states that “students who fail algebra are significantly less likely to graduate on time” (Heppen, Sorensen, Allenworth, Walters, Rickles, Taylor, & Michelman, 2017, pg. 272). There are many reasons that students who are considered at-risk are falling behind in the mathematics classroom. Pugalee (2001) suggests that at-risk students often do not receive the best curriculum resources and are frequently placed in low-level classes that lack rigor. Furthermore, due to the emergence of the inclusion movement, a major concern for educators is figuring out how best to teach the at-risk student and match instruction to his needs (Miller & Mercer, 1997) while still meeting the needs of the regular education student. According to Miller and Mercer, “[i]n addition to designing a curriculum that takes into account learner goals, teachers of mathematics must implement curriculum using effective instructional techniques with research support” (p.53).

Two techniques that have been utilized in teaching at-risk learners are direct instruction and discovery learning; however, the research on the effectiveness of these strategies is contradictory. Supporters for each type of instruction claim that their technique is the best for reaching students who are at-risk in the mathematics classroom. According to Rosenshine (2008), one problem with the research is that it is seldom explained explicitly how direct instruction differs from discovery learning.

#### Direct Instruction

Direct instruction is an approach where the instruction is led by the teacher (Rosenshine, 2008). Rosenshine (2008) goes on to further elaborate that direct instruction is based on the premise that every student is capable of learning mathematical concepts in well-structured lessons. Those lessons include ensuring well-designed instruction that students can easily follow, allowing students to practice problems and receive proper feedback, and allowing students to advance through the curriculum at a regular pace. Research has shown that direct instruction is an effective instructional strategy for students with learning disabilities (Steadly, Dragoo, Arafah, & Luke, 2008). However, there is limited research on the effectiveness of direct instruction with the broader category of at-risk students. One study found that direct instruction was a more successful instructional strategy than the discovery approach for students when they are learning more difficult topics, such as Algebra (Anderson, Corbett, Koedinger, & Pelletier, 1995).

#### Discovery Learning

Discovery learning is also known as inquiry teaching or open inquiry learning (Mandrin & Preckel, 2009). “Learning theorists characterize learning to solve problems as discovery learning, in which participants learn to recognize a problem, characterize what a solution would look like, search for relevant information, develop a solution strategy, and execute the chosen strategy” (Borthick & Jones, 2000, p. 181). Bicknell-Holmes and Hoffman (2000) describe discovery learning as a student-centered approach where students explore a problem and make general assumptions through their inquiry based on the integration of their existing knowledge with their new general assumptions.

Spencer and Jordan (1999) noted that discovery learning should have a specific framework for the student to work through, should give the student the responsibility to work through the material and discover the new concept, should include a guide to help the student focus and direct his or her own learning, and should have a way for students to reinforce the concepts learned. This type of discovery learning is called guided discovery learning. In guided discovery, the teacher uses guides and references to help the students through the discovery process and guide them to the desired result (Mandrin & Preckel, 2009). According to Mandrin and Preckel, discovery learning has been shown in the past to improve students’ ability to transfer skills from topic to topic.

In the debate of discovery learning verses direct instruction, more empirical research has been conducted on the impact of the direct instruction approach with at-risk students. Kirschner, Sweller, and Clark (2006) point out that little empirical evidence exists to support a purely discovery based approach to teaching mathematics. They also note that there exist years of evidence to support direct instruction. An implication of the direct instruction verses discovery debate, with

regard to at-risk students, is that there is a need for more empirical studies to compare the effectiveness of the two instructional strategies.

### Methodology

The purpose of this study is to examine whether at-risk students who experienced guided discovery teaching methods for an Algebra unit demonstrated higher achievement than at-risk students who experienced direct instruction. Therefore, this study seeks to explore the following research question: Is guided discovery or direct instruction more effective in teaching mathematics to at-risk students?

### Participants

For the purpose of this research, the definition of “at-risk learner” as established by the school district in which the study was conducted was used. Therefore, a student was categorized as at risk if he or she was at least 1 year behind in math, was on free and reduced lunch, was identified by the teacher as at-risk of failing the current math course, and/or was receiving special education services for a learning disability. A regular education student was identified as any student who was not identified as at-risk.

Participants in the study were students who were enrolled in two Algebra 1B classes at a high school located in the south central United States. Students were in the 9<sup>th</sup>, 10<sup>th</sup>, or 11<sup>th</sup> grade, and ranged in age from 14 to 17 years old. Parental permission was obtained for all students prior to any data collection. Prior to data collection, 13 students were in the control group (direct instruction) and 22 students were in the treatment group (guided discovery). Both classes contained at-risk and regular students. Three at-risk students (1 from the control group and 2 from the treatment group) were eliminated from the study due to missing pre-test scores.

Table 1  
*Demographics of Participants*

	Regular	At-risk
Control	10	2
Treatment	12	8

### Research Design

Students in both classes learned the same material for a unit of instruction on graphing linear equations. The classes proceeded at the same pace, and the same homework and class-work assignments were given to all students. Both classes were taught by the same teacher. The unit was taught over a three-week time span.

For the control group, the teacher utilized only direct instruction. Each class period consisted of approximately 45 minutes of direct teacher instruction and 45 minutes of practice time. Lesson objectives were clearly written and defined on the board. Each lesson in the unit was structured in the same manner:

- A review of the previous lesson’s material was presented by the teacher.
- Instruction on new material was completed by the teacher presenting the mathematical procedures through a series of examples, using small steps and allowing the students to practice the steps after the examples were given.
- The students practiced the new material, receiving assistance and feedback from the teacher during seatwork time.

Students in the treatment group were taught the same material but were given guided discovery activities instead of direct instruction. The guided discovery lessons followed the following guidelines:

- A review of the previous lesson's material was presented by the teacher.
- Students were provided with a discovery learning worksheet to use as a guide during the guided discovery activity. Students were instructed to work individually for 15-20 minutes while the teacher acted as a facilitator. The teacher then led a class discussion of the students' discoveries and recorded a summary of the discovered material on the board.
- The students practiced the new material, receiving assistance and feedback from the teacher during seatwork time.

### Data Collection

A pre-test and post-test assessment of 20 multiple-choice questions was administered to all participating students, with the exception of 3 at-risk students who were absent on the day the pre-test was given. The assessment was developed by the classroom teacher and was designed to assess the specific material that was covered in the unit. The pre-test was administered on the first day of the unit and the post-test was administered on the last day of the unit.

### Results

Descriptive statistics showed that at-risk students in the control group scored considerably lower on the pre-test than at-risk students in the treatment group and regular students in both groups. However, the at-risk students in the control group showed the largest gain from pre-test to post-test (see Table 2). The gain scores for the other three groups were similar, with the regular students in the control group showing the least amount of gain.

Table 2

*Pre- and Post-test Descriptive Statistics for Type of Instruction and At-risk Status*

Group and At-Risk Status	n	Pre-Test Mean	Post-Test Mean	Mean Gain
Control, Regular	10	5.20	12.10	6.90
Control, At-risk	2	3.50	13.00	9.50
Treatment, Regular	12	5.58	13.50	7.92
Treatment, At-risk	8	5.50	12.75	7.25

Because of the small sample size, nonparametric analyses were used to compare mean gain scores. To answer the research question, the Wilcoxon Exact test was conducted using only the at-risk students from both control and treatment groups. Results showed that there were no significant differences between the gain scores of at-risk students in the control and treatment groups ( $T = 12.00$ ,  $p = 0.80$ ).

### Post Hoc Analysis

A post hoc analysis was conducted to determine if there were differences in overall gain scores between the control and treatment groups. The Wilcoxon Exact test was conducted to compare the two types of instruction. Results showed that there were no significant differences between the mean gain scores of the control ( $M = 16.25$ ) and treatment groups ( $M = 16.65$ ;  $T = 195.00$ ,  $p = 0.46$ ).

### Discussion

The results of this study showed that guided discovery was not more effective for at-risk students than direct instruction. At-risk students in both the guided discovery and the direct instruction classroom showed gains from pre-test to post-test, but there was not a significant difference between the mean gain scores of the two groups. Though the at-risk students in the guided discovery classroom showed a higher mean gain score than those in the direct instruction classroom, these gains can be primarily attributed to a gain score of 17 points for one at-risk student in the guided discovery classroom.

It is interesting to note that the regular students in the direct instruction classroom showed the least amount of gain from pre-test to post-test. Visual inspection of the data revealed that, out of the 35 participants, only two students scored lower on the post-test than on the pre-test, and both of those students were regular students in the direct instruction classroom. The two scores substantially lowered the mean gains for the regular students in the direct instruction classroom, which raises the question of whether direct instruction is effective for all students.

The post hoc analysis demonstrated that overall mean gains were not significantly different between the direct instruction and the guided discovery classrooms. Since the pre-test scores for the two groups were also similar (4.92 for direct instruction; 5.55 for guided discovery), this result shows that the use of discovery learning did not have more or less of an impact on student learning than direct instruction. The majority of the students in this study scored at least 8 points higher on the post-test than the pre-test, regardless of the type of instruction.

### Limitations

It should be noted that the very small sample size, particularly for treatment group, had a substantial impact on the statistical results of the study. Future research with a larger sample may yield different results. In addition, guided discovery was not the typical method of instruction for the teacher in this study, and the lack of familiarity with the guided discovery process on the part of both teacher and students may have influenced the amount of learning that took place. Implementation of guided discovery on a regular basis may impact the results of future studies.

### Conclusions

The results of this study indicated that, in general, direct instruction and guided discovery are equally effective in helping students learn mathematics. This contradicts the work of Anderson, Corbett, Koedinger, and Pelletier (1995), which indicated that direct instruction was more effective for teaching difficult material to at-risk students. More research is need to explore how at-risk students respond to both teaching strategies and which is most appropriate for students who are at-risk for failure.

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# THE FIELD EXPERIENCE AND STUDENT TEACHING SURVEY: ESTABLISHING RELIABILITY AND VALIDITY

**Deborah J. Williams, Ed.D.**

Stephen F. Austin State University

**Tingting Xu, Ph.D.**

Stephen F. Austin State University

## Abstract

*In this study, the investigators delineate the steps they have taken to establish reliability and validity regarding a recently developed instrument, referred to as the Field Experience and Student Teaching Survey (FEASTS). The study followed a survey design and employed mixed methods (qualitative and quantitative) to gain feedback regarding the recently developed instrument. Cronbach's alpha was measured to examine the reliability for the Likert-scale items for both the pilot study and phase one. Results yielded a high reliability with Cronbach's  $\alpha = .932$ . The pilot study utilized a convenience sample of 11 teacher candidates whose majors were early childhood through sixth grade, and phase one received feedback from 108 respondents. Descriptive statistics revealed that 85% of participants agreed that the statements in the survey were clear and easy to understand and 15% strongly agreed. In addition to establishing reliability and validity, investigators learned valuable information about teacher candidates' opinions of their preparedness for field experiences.*

Keywords: survey, field experience, student teaching, reliability, validity

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Problems facing higher education today are dismal; however, “colleges and universities have many assets they can employ to confront these challenges” (Felten, Gardner, Schroeder, Lambert, & Berefoot, 2016, p. 8). Several colleges and universities across the nation are flourishing, as faculty and staff work together towards aspirational goals to meet students' evolving needs. Authors of the current study focused on educator preparation due to the tremendous amount of attention it has received in the form of government initiatives, mandated policy, and critical reports (Edwards, Gilroy, & Hartley, 2002).

The Council for the Accreditation of Educator Preparation (CAEP, 2013) approved a new set of standards. The goal of these new standards is to make the accreditation process more rigorous and outcome-driven. These new guidelines involve revising minimum criteria for program admissions and also challenging programs to demonstrate their graduates' impact on student achievement. Heafner, McIntyre, and Spooner (2014) strongly suggested, “Today, it is not enough for universities to place teacher candidates in diverse schools for their student teaching or even pre-student teaching experiences. Candidates must have direct involvement in improving the achievement of students” (p. 4).

In response to the emphasis surrounding educator preparation, several investigators have launched research studies that targeted teacher candidates for the purposes of enhancing program quality assurance (CAEP, 2013). For example, Alkus and Olgan (2014) investigated the opinions of ten preservice and 11 inservice preschool teachers concerning the development of children's creativity in early childhood education and found that obstacles to developing creativity of young children were related to inadequate support from the school administrators. When considering program improvements, this educator

preparation program gained pertinent information regarding partnerships with school districts. In a comprehensive study conducted by Patrick, Macqueen, and Reynolds (2014) with 939 teacher candidates, they concluded that teacher candidates were mainly focused on their future classroom lessons rather than their impact in the global society. These findings indicate the need for educator preparation programs to recruit diverse candidates, as well as exposing them to diverse field experience settings.

After completing various field experiences, Ates (2013) investigated 24 teacher candidates regarding their opinion of what constituted effective comprehension instruction and concluded that the participating teacher candidates perceived reading as an interpretation and meaning-making process. However, their opinions about teaching reading and comprehension were far from viewing the students as active and competent readers. These data provided invaluable findings that the educator preparation program could use to strengthen candidates' content and pedagogical knowledge.

Oren and Ormanci (2012) investigated teacher candidates' opinions of development and implementation of worksheets, and they found issues with choosing suitable questions and developing questions appropriate for students' levels in developing worksheets. These findings provided important information about candidates' content and pedagogical knowledge. In an additional study, Oren and Ormanci (2014) explored teacher candidates' understanding of the digestive system. Findings revealed valuable information on content and pedagogy such as that teacher candidates' drawings of digestive system organs were quite detailed, whereas drawings that represented connections among digestive system organs were limited. Burton (2012) explored 62 teacher candidates' perceptions of math using drawings, and results provided insight into the teacher candidates' positive and negative experiences and metaphors that they associated with teaching mathematics to fourth grade students. Quantitative findings from Yuksel's (2014) study with preservice English language teachers revealed that their perception related to various teaching competencies was homogeneous and they felt proficient in teaching but needed further support in classroom management. This study provided insight into the teacher candidates' positive and negative experiences and metaphors that teacher candidates associated with teaching mathematics to fourth grade students. Capella-Santana (2003) suggested that teacher candidates' attitudes were impacted by field experiences in culturally diverse settings, courses in multicultural and bilingual education. Data revealed that opportunities for teacher candidates to express their feelings about multicultural issues with a culturally/ethnically diverse group enhanced their attitudes and knowledge. Furthermore, Capella-Santana (2003) concluded that teacher candidates' attitudes and knowledge made positive changes regarding multicultural education. Bonner and Chen (2009) concluded that constructivism-oriented teacher candidates' grading and teaching beliefs were inconsistent as revealed by 222 responses to the Survey of Assessment Beliefs (SAB). Findings from Ucar (2012) indicated that the teaching practice process couldn't reach its aim due to the problematic process, including the lack of theoretical knowledge, short period for practice, negative affective behaviors, problems in curriculum and communication, lack of facilities and mentors, and disconnection between theory and practice. Results from these studies have provided critical insights to teacher education programs regarding strengths and weaknesses in candidates' content knowledge and pedagogical knowledge prior to entering the profession as inservice teachers.

### **Purpose of the Current Study**

Based on previous research findings, there is limitation in explorations of elementary teacher candidates' opinions regarding their overall field experience in terms of effective teaching and teacher preparation. Therefore, the current study's intent was to add such information to the literature by following a survey research design utilizing mixed methods (qualitative and quantitative). Moreover, the investigators delineate the steps they have taken to establish reliability and validity regarding a recently developed instrument, referred to as the Field Experience and Student Teaching Survey (FEASTS).

Accordingly, the following research questions guided this study. Investigators sought answers to three major questions: (a) What were the participants' opinions of their field experiences and/or student teaching? (b) What were the participants' opinions of the clarity of the recently developed survey statements? (c) What suggestions did participants have for improving the survey?

### Theoretical Framework

Two perspectives on learning support the study. First, the investigators designed the FEASTS based on self-efficacy views (Bandura, 1997), a social cognitive learning theory. In 1977, Bandura proposed that human beings learn by carefully watching others in their environment, and later he found strong correlations between self-efficacy and the quality of performance (Bandura, 1997). Eggen and Kauchak (2004) proposed that learning happens when there is a change within a human's internal mental structures or processes. Statements that comprise the FEASTS were constructed with the intention to afford candidates a voice in their learning environment, such as how confident candidates felt and/or how uncertain the candidates felt during the field experience. The goal was for field experiences to engage candidates and allow them to change by bridging theory and practice, as research has found that high self-confidence influences learner motivation, perseverance, cognition, and meta-cognition (Kinzie, 1990; Bandura, 1997; Semiatin & O'Connor, 2012). Studies on the relationships between self-efficacy and learning effectiveness have further concluded that students with higher self-efficacy are more capable of cognition and metacognition and persevere longer in the learning context (Burgoon, Meece, & Granger, 2012; McCombs, 1984).

Second, this research was guided by Dewey's (1944) self-reflection views, also underpinned by the social cognitive learning theory. The investigators wanted candidates to take the FEASTS after completion of their experience which required reflective thinking (Dewey, 1944) in order to judge the impact of their learning. According to Dewey (1944), reflective thinking is crucial to teacher development and student learning. Through candidates' reflective thinking, learning took place. It is also explained by Eggen and Kauchak (2004) that learning has occurred when there is a change within a person's internal mental structures or thinking.

### Method

#### Instrument

The current survey was developed based on standards, literature, and feedback from experts. It encompasses 46 items as a result of pilot study. There were 43 five-point Likert scale items ranging from strongly disagree to strongly agree to solicit respondents' opinions of their preparedness for field-based work. Example statements included: (1) I felt prepared to teach literal level, inferential, and applied comprehension; and (2) I felt prepared to teach young children about writing traits such as voice. Additionally, there are three other items. One item was related to demographics: "I recently completed \_\_\_\_\_," - with the following options (1) field experience 1, (2) field experience 2, (3) student teaching, (4) first-year inservice, or (5) second-year inservice. Item number 44 involved respondents' opinions of the explicitness of the survey statements: "The statements in this survey were clear and easy to understand". Candidates were required to choose one of the following options: (1) strongly disagree, (2) disagree, (3) does not apply, (4) agree, and (5) strongly agree. Item number 46 was open-ended, involved a written response, and was analyzed qualitatively.

**Reliability.** The survey was piloted to ensure reliability. The pilot study utilized a convenience sample of 11 teacher candidates whose majors were early childhood through sixth grade. Phase one received feedback from 108 respondents. Cronbach's alpha was measured, and results yielded a high reliability with Cronbach's  $\alpha = .932$ . Descriptive statistics revealed that 85% of participants agreed that the statements in the survey were clear and easy to understand and 15% strongly agreed. The highest rated category was collaboration between the university supervisor and mentor teacher, as the mode was five (strongly agree). The lowest rated category was problem-solving in math, which received two modes of one (strongly disagree). Written comments indicated that preservice teachers believed the survey was thorough and statements were easy to understand but some information did not pertain to field experience one.

**Validity.** The investigators utilized content validity by reviewing various state certification examinations to set up the survey categories. Teacher certification examinations were studied throughout the United States to determine collectively what knowledge beginning elementary teachers were expected to demonstrate. In studying teacher certification examinations including the California Educator Credentialing Examinations, Florida Teacher Certification Examinations, Illinois Licensure

Testing System, New York State Teacher Certification Examinations, North Carolina Testing Requirements, Texas Examinations of Educator Standards, and Washington, DC Public Schools Teacher Certification and Licensing, investigators noticed commonalities. For example, in order to obtain a license, elementary teachers are required to take two different exams. One exam is related to pedagogy and professional responsibilities such as student development, assessment, instruction, learning environment, and professional environment.

Additionally, most states require elementary teachers to pass a content examination that includes subjects such as language and literacy, mathematics, science, social sciences, fine arts, health and physical education. Another commonality investigators noticed was that the aforementioned states followed similar processes for providing test makers with feedback for examination questions and statements. Working committees were comprised of public and charter school educators, faculty from educator preparation programs, education service center staff, representatives from professional educator organizations, content specialists, and members of the business sector. Demographics of committee members such as geographical location, job titles, years of experience, ethnicity, and gender were balanced. The Field Experience and Student Teaching Survey encompasses the following categories: reading, math, science, social studies, composition, student engagement, differentiated instruction, collaboration, and theory/research.

### **Data Collection**

The survey was created using the Qualtrics database. After obtaining university human subject approval, the survey link and passcode were emailed to universities located in Florida, Indiana, North Carolina, and Texas. Investigators that served on the research team were prompted to make the survey link available to their candidates during the last two weeks of the semester. The investigators employed the purposeful sampling strategy, and a total of 108 subjects responded. Data were collected during the last week of the semester and were analyzed employing quantitative and qualitative methods.

### **Data Analysis**

Descriptive statistics was used to examine the frequencies of each question. The Cronbach's alpha test and descriptive frequencies were applied to the Likert-scale statements to provide answers to research questions one and two. The investigators analyzed the qualitative feedback from the written responses using cogenerative dialoguing (Tobin & Roth, 2005). They focused on the research question and coded responses independently. The principal investigator coded responses and then shared with the second investigator. The second investigator either agreed to, extended, or disagreed with the principal investigators interpretation of teacher candidates' feedback. When disagreements surfaced, investigators explained their thinking which resulted in cogenerated understandings and explanations.

### **Findings**

The current research study was guided by three questions. After examining teacher candidates' responses to the survey statements based on Likert scale and open-ended questions, the investigators found pertinent information regarding teacher candidates' perceptions of their readiness for field experiences.

#### **Question 1: What were the participants' opinions of their field experiences and/or student teaching?**

Descriptive statistics frequencies provided ratings for each category of statements. These data were used to draw conclusions on teacher candidates' opinions of their field experiences. Appendix A shows the mean and mode for each category of statements. The categories represented on the survey included reading, math, science, social studies, composition, student engagement, differentiated instruction, collaboration, and theory/research.

Over 60% of the candidates agreed or strongly agreed that they felt prepared to teach reading skills such as phonological awareness, phonics, fluency, vocabulary, and comprehension. However, less than 50% of the candidates either agreed or strongly agreed that they could facilitate a reading workshop lesson. When children are engaged in a reading workshop, they practice their reading by reading self-selected texts as the teacher confers and teaches students individually or

in small groups. Direct instruction is another approach to teaching reading. Based on the current data that have been collected in phase one, candidates may require additional instruction or professional development in pedagogical decisions.

The majority of candidates felt extremely confident in teaching writing and math in most areas, as the choices of agree and or strongly agree ranged from 54%-90%. Investigators noted that 54%-83% of the teacher candidates felt prepared to teach math and social studies, as evidenced by the ratings of agree and or strongly agree. Data showed that 46%-78% of the candidates either agreed or strongly agreed that they felt prepared to teach math. Although 79%-88% of the teacher candidates agreed or strongly agreed that communication between the university professors and mentor teachers was effective, they did not feel prepared to spend two hours four days a week in the schools implementing their learning. Data indicated that 68%-98% of the teacher candidates felt prepared to engage the students and differentiate instruction. Results are displayed in Appendix A. Cronbach's alpha was also high with Cronbach's  $\alpha = .932$  in the current study.

**Question 2: What were the participants' opinions of the clarity of the survey statements?** To answer this question, investigators used the mode from descriptive statistics frequencies and found that 85% of the participants believed the statements on the survey were clear and easy to understand and 15% strongly agreed. The responses for statement 47 regarding the clarity of this survey indicated that all participants either strongly agreed or agreed that this survey was clear. Candidates' self-assessment of their readiness in various areas was also an indication that the survey items were lucid.

**Question 3: What suggestions did participants have for improving the survey?** Statement 48 was the last item on the survey, and investigators used this data for revision considerations. Written comments indicated that some teacher candidates believed the survey was clear and easy to understand and no revisions were needed. On the other hand, some teacher candidates believed that the length of the survey needed decreasing and the Likert-scale needed expanding to include a neutral response such as neither agree nor disagree. The summary of cogenerated understandings and explanations based on participants' written responses are displayed in Appendix B.

### Discussion

Previous research findings revealed a gap in the literature regarding elementary teacher candidates' perceptions of their overall readiness for field experiences and student teaching. In order to narrow this gap, the current study's intent was to add some information regarding candidates' perceptions of their overall readiness to the literature and also launch the process of establishing reliability and validity for the recently developed FEASTS. Results showed that the survey appears to be valid based on evidence that the survey met the investigators' goal, which was to assess teacher candidates' opinions of how prepared they felt to deliver instruction in reading, math, science, social studies, and writing. Further, the investigators solicited feedback regarding how comfortable teacher candidates felt about discipline management or student engagement and candidates' ability to differentiate instruction for English Language Learners, struggling readers, and gifted and talented students. Furthermore, candidates responded to items that related to research and theory taught at the university. The investigators in this study found that teacher candidates may require additional support in student engagement or discipline management. This finding is aligned with Yuksel (2014), who also found that teacher candidates felt proficient in teaching but needed further support in classroom management. The investigators also found that less than 50% of the candidates felt prepared to facilitate reading workshop. This finding aligns with Ates's (2013) study who also learned that candidates' content and pedagogy in the area of reading needed strengthening. These findings from the current study are meaningful and have added to the existing literature regarding the use of candidates' opinions to explore the impact of the educator preparation program prior to placement in the field.

CAEP's (2013) revised accountability standards outlined performance measures and requirements for educator preparation programs. The investigators in the current study identified three major findings that directly relate to CAEP's standards. The first finding relates to content and pedagogical knowledge. Through reflection (Dewey, 1944), data revealed that candidates' opinions of their confidence levels in delivering instruction for various subjects were diversified. The highest percentages of agree and /or strongly agree involved communication between the mentor teachers and site professors. This finding provides documentation in the area of establishing strong partnerships between the university and school district

(CAEP, 2013). Teacher candidates felt they needed additional preparation and/or support in order to spend two hours in the schools. The lowest percentages involved preparation to teach reading workshop, math problem solving, and science themes. Research supports efforts in considering teacher candidates' perceptions, as studies on the relationships between self-efficacy and learning effectiveness have found that students with higher self-efficacy are more capable of cognition and metacognition and persevere longer in the learning context (Burgoon, Meece, & Granger, 2012; McCombs, 1984). Investigators sought to enhance candidates' "sense of readiness" prior to placement in the field, and FEASTS has strong potential for providing an unobtrusive avenue for universities to collect reliable data regarding their EC-6 educator preparation program.

A second major finding revealed that this survey was reliable. Cronbach's alpha test yielded a high reliability score and more than 85% of the targeted population found the survey statements clear and easy to understand, which enhanced content validity. The instrument is reliable and valid and provided pertinent information that might be used to enhance program quality assurance (CAEP, 2013) for the participating universities. A third finding stemmed from responses to the open-ended question that aimed at capturing the teacher candidates' suggestions for improving the survey. Valuable feedback for revisions surfaced, such as no changes were warranted, the survey was too lengthy, and the Likert-scale options were limited. These comments will be used to revise sections of the instrument.

### **Limitations**

This study provided some meaningful findings, but at the same time, the limitations of this study need to be carefully taken into consideration. One of the limitations in the present study was the sample size. Due to the limited number of participants who volunteered to take the survey, interpretation of the results was carefully applied within the context of the study.

### **Next Steps**

With increased attention surrounding educator preparation and continuous improvement (CAEP, 2013), seeking teacher candidates' opinions is crucial to the process for building a bridge between educator preparation and PreK-12 schools. This study's results contribute to the body of evidence that teacher candidates' opinions, attitudes, and beliefs can provide valuable information for program documentation and improvements. Based on written feedback from respondents, next steps involve adding six choices to the Likert-scale: strongly disagree, disagree, neither agree nor disagree, does not apply, agree, and strongly agree. Feedback from the open-ended question, related to revising the Likert-scale choices, included responses included comments such as, "should have an option for neither agree nor disagree", "include a neutral response option", and "sometimes I had to put disagree for ones I felt neutral about because 'does not apply' doesn't work".

The investigators will shorten the survey due to teacher candidates' suggestions such as "make it shorter" and "decrease the amount of questions." To begin this process, the investigators will revisit the reliability report and eliminate the statement from each category that showed a low correlation when compared to the other questions in the same category. Following the elimination process, investigators will rerun the Cronbach's alpha test of reliability.

The investigators plan to make the FEASTS available to a wider number of elementary teacher candidates across the United States in order to improve the sample size. In its current state, this survey instrument is reliable and valid for educator preparation programs to utilize. The vision is for educator preparation programs to access this instrument as an avenue for strengthening their program's quality assurance, a CAEP standard. Approximately, 90% of the survey items that encompass the survey relate to content and pedagogical knowledge, also a CAEP standard. Collaboration represents one of the eleven categories that comprise the instrument, yet another CAEP standard that relates to establishing strong partnerships with school districts. Finally, CAEP requires educator preparation programs to recruit diverse teacher candidates and expose them to diverse students. FEASTS also consists of items related to special student groups such as English language learners. Today, universities face many challenges, especially their educator preparation programs. Nonetheless, findings regarding FEASTS lead the investigators to a conclusion that this instrument has strong potential to serve as an avenue for gaining feedback from teacher candidates regarding the impact of their educator preparation program.

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Appendix A  
The Field Experience and Student Teaching Survey

**Survey Responses**

Statements by Categories	Strongly Disagree/ Disagree	Does Not Apply	Agree/ Strongly Agree
<b>Collaboration-</b> I felt prepared to spend at least two hours in schools four days per week to practice different classroom configurations	99%	1%	0%
<b>Collaboration-</b> I felt prepared to spend at least two hours in schools four days per week to promote positive student behavior.	69%	31%	0%
<b>Reading-</b> I felt prepared to teach phonemic awareness, phonics, vocabulary, fluency, and comprehension.	0%	2%	98%
<b>Reading-</b> I felt prepared to teach consonant blends, digraphs, and diphthongs.	5%	3%	93%
<b>Reading-</b> I felt prepared to teach literal level, inferential, and applied comprehension.	22%	8%	69%
<b>Reading-</b> I felt prepared to facilitate a Reading Workshop lesson.	35%	18%	48%
<b>Theory-</b> I felt prepared to deliver instruction based on constructivist views by scaffolding as students actively participated in the learning process.	22%	8%	71%
<b>Writing-</b> I felt prepared to teach writing lessons.	9%	8%	84%
<b>Writing-</b> I felt prepared to teach procedural, skills, and craft / mini-lessons during writing workshop.	4%	7%	90%
<b>Writing-</b> I felt prepared to teach young children about writing traits such as voice.	6%	11%	84%
<b>Writing-</b> I felt prepared to implement developmental writing strategies to help students reach the conventional stage.	17%	18%	65%
<b>Writing-</b> I felt prepared to expose students to various literary genres to model effective writing.	21%	22%	58%
<b>Math-</b> I felt prepared to teach concepts about algebra, geometry, graphing, and problem-solving.	5%	12%	83%
<b>Math-</b> I felt prepared to introduce young children to algebraic concepts by teaching how to recite numbers forward and backward from any given number, skip counting, and identifying number patterns.	23%	19%	59%

## Appendix A, Cont'd.

Statements by Categories	Strongly Disagree/ Disagree	Does Not Apply	Agree/ Strongly Agree
<b>Math-</b> I felt prepared to expose young children to shapes found in household items as an effective way to introduce geometry.	10%	22%	69%
<b>Math-</b> I felt prepared to involve young children in conducting surveys to reinforce graphing.	7%	21%	73%
<b>Math-</b> I felt prepared to teach problem-solving in math.	19%	27%	54%
<b>Social Studies-</b> I felt prepared to teach various social studies related themes.	12%	13%	74%
<b>Social Studies-</b> I felt prepare to expose students to various types of communities such as classroom, school, and/or virtual.	8%	9%	82%
<b>Social Studies-</b> I felt prepared to teach young children the concept of consumer.	6%	8%	81%
<b>Social Studies-</b> I felt prepared to teach young children how community helpers can enhance their understanding of the concept of producer.	9%	24%	66%
<b>Social Studies-</b> I felt prepared to teach the three branches of government.	7%	22%	72%
<b>Science-</b> I felt prepared to teach various themes related to science.	20%	35%	46%
<b>Science-</b> I felt prepared to teach young children how to use safety goggles and how to properly wash hands to enhance their knowledge of scientific investigations and reasoning.	10%	12%	78%
<b>Science-</b> I felt prepared to facilitate activities that prompted students to ask questions about organisms, objects, and events they observe in the natural to support scientific investigations and reasoning.	4%	30%	66%
<b>Science-</b> I felt prepared to teach young children about significant forms of energy such as light, heat, and sound.	9%	26%	65%
<b>Science-</b> I felt prepared to teach about natural resources such as streams, lakes, and oceans.	15%	26%	59%
<b>Student Engagement-</b> I felt prepared to enhance students' intrinsic motivation and self-initiated achievements.	7%	26%	69%
<b>Student Engagement-</b> I felt prepared to use external incentives in order to promote intrinsic motivation.	7%	25%	69%

## Appendix A, Cont'd.

Statements by Categories	Strongly Disagree/ Disagree	Does Not Apply	Agree/ Strongly Agree
<b>Student Engagement-</b> I felt prepared to help create highly engaging classroom activities to minimize inappropriate student behavior.	6%	9%	85%
<b>Student- Engagement-</b> I felt prepared to co-create classroom expectations and consequences with students in order to minimize off task behavior.	10%	13%	77%
<b>Collaboration-</b> I felt that collaboration between my mentor teacher and university supervisor helped me with small group instruction.	10%	2%	88%
<b>Collaboration-</b> I felt collaboration between my mentor teacher and university supervisor helped me with whole group instruction.	6%	6%	89%
<b>Collaboration-</b> I felt collaboration between my mentor teacher and university professor helped me create learner-centered lessons.	16%	5%	79%
<b>Collaboration-</b> I felt collaboration between my mentor teacher and university professor helped me implement informal assessments to identify students' strengths and weaknesses.	14%	4%	82%
<b>Differentiation-</b> I felt prepared to design lessons for struggling readers.	16%	7%	77%
<b>Differentiation-</b> I felt prepared to design lessons for gifted and talented students.	26%	4%	71%
<b>Differentiation-</b> I felt prepared to design lessons for English learners.	27%	6%	68%
<b>Reading-</b> I felt prepared to teach a small group of students as the other students engaged independently with literacy centres.	27%	4%	69%
<b>Theory-</b> I felt prepared to "Kidwatch" (Goodman, 1978) and take daily anecdotal notes	7%	9%	85%
<b>Theory-</b> I felt prepared to scaffold as students actively participate in the learning activities	15%	27%	58%
<b>Theory-</b> When working with young children, I felt prepared to scaffold in the Zone of Proximal Development (Vygotsky, 1978).	6%	2%	92%
<b>Other-</b> I felt prepared to utilize technology and other digital tools to problem solve and research additional materials needed.	8%	6%	86%
<b>Differentiation-</b> I felt prepared to implement formative, pre-assessments, ongoing, and post-assessments to meet the needs of individual students.	2%	0%	98%
<b>Other-</b> I felt prepared to communicate and support my philosophy of education teaching.	7%	6%	88%

Appendix B  
Sample of Candidates' Feedback

**Summary of Written Responses**

Summary of Written Responses	Cogenerated Categories
Make it shorter.	Length of survey
Should have an option for neither agree nor disagree	Likert-scale
I do not have any questions pertaining to the improvement of this survey.	No improvements needed
Easy survey	No improvements needed
Include a neutral response option.	Likert-scale
The survey was easily understood and provided appropriate answer choices to choose from.	No improvements needed
Make it a little shorter.	Length of survey
Decrease the amount of questions.	Length of Survey
Less questions.	Length of Survey
This is too broad. I felt a lot of the questions did not apply to me. I also wish there was a neutral option for these statements. Sometimes I had to put disagree for ones I felt neutral about because "does not apply" doesn't work.	Likert-scale

# PRESERVICE TEACHERS' PERSPECTIVE ON THEIR PREPARATION FOR FAMILY ENGAGEMENT

**Neelofer Tajani, Ph.D.**  
University of Houston

## Abstract

*Family engagement in children's education is one of the key factors for student success in school, yet little attention has been paid in teacher preparation programs to enhance the knowledge, skills, and attitudes of preservice teachers to involve families in their children's learning. Using a survey research design, the study aims to examine preservice teachers' perspectives and knowledge on their preparation in learning family engagement strategies and practices during the third and fourth year of the teacher preparation program. The results of the study indicated that preservice teachers feel fairly well prepared in understanding the importance of family engagement for student learning; however, they feel somewhat prepared to encourage parents to partner with schools to take decision making roles to enhance student learning.*

Keywords: preservice teachers, family engagement, teacher preparation, field experiences

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Parental involvement has been positively associated with student gains in social competence, cognitive development, communication skills, literacy development, vocabulary growth, expressive language comprehension skills, and positive engagement with peers, adults, and learning. Despite the strong evidence that strongly suggests the importance of family engagement in student learning, how to effectively engage parents, particularly in urban environment, is still a challenge.

Various local, state, and national policies emphasize the importance of the family's role in children's learning. The federal *No Child Left Behind Act* requires Title I schools receiving aid to set aside some portion for family engagement programs and activities. Additionally, education was one of the main topics for the Texas 84<sup>th</sup> legislative session where House Bill (HB) 4 passed, which provided funding to school districts that meet state standards on curriculum, teacher certification, and parent engagement for high quality prekindergarten programs for qualifying students. One of the major requirements to receive state funding for qualifying students is that districts must develop and implement a family engagement plan to maintain high levels of family involvement, together with strategies based on empirical research on positive family engagement and student outcomes (Texas Education Today, 2015). Consequently, any university offering teacher preparation programs should be ready to emphasize the importance of family engagement and to educate their students regarding the promotion of family engagement. Institutions have a responsibility to make sure our teachers are trained and ready to incorporate the new requirements in their teaching.

In recent years, research has identified the need for teacher education programs to support early childhood preservice teachers in developing dispositions and strategies to implement for effective engagement with families (Baum & Swick, 2008). The National Association for the Education of Young Children (NAEYC) accentuated the importance of empowering families to be involved in their children's learning and development by creating family and community relationships as one of the standards for early childhood teacher preparation programs (NAEYC, 2009). According to the NAEYC standards, teachers prepared in early childhood degree programs must know and understand the characteristics of

diverse families and communities. Furthermore, teachers should use this knowledge to create respectful and reciprocal relationships to support and involve families in their children's learning.

### **Need for the Study**

The classrooms of the twenty-first century are continuously changing and are becoming increasingly multicultural; one-third of students in kindergarten to the 12th grade in United States come from minority groups consisting of diverse cultures and languages (The Center for Public Education, 2012). The U.S. Bureau of Census (2009), projects that by 2028, one-half of school age children will be minority students. What does this mean for parents, educators, and schools in terms of student learning and success? Educators have a growing and important responsibility to educate and meet the needs of diverse families and students. Schools and teachers serving these families must develop ways to understand parents' perspectives and engage them to support student learning. Teacher education in family engagement and partnership is a highly effective and significant method for increasing student achievement and reducing the barriers for home-school partnership (Chavkin, 2005).

According to Weiss (2005), educators must understand the cultural, structural, and historical basis for family involvement, rather than concluding that certain parents are simply uninterested in their children's learning. To be able to teach and prepare future students effectively, educators need to employ concrete skills in understanding and working with families. To accomplish this task, teachers should be exposed to more experiential and hands-on methods of problem solving, communicating, and collaborating with students and families during preservice student teaching (Shartrand, Weiss, Kreider & Lopez, 1997). Because of the trend in changing demographics of schools in the many urban areas, it is vital for teacher preparation programs to have strategies to prepare preservice teachers to meet the needs of diverse students and families.

### **Epstein's (2001) Home, School and Community Topology**

Epstein's (2001) Home, School and Community topology also forms the backdrop of this study. Epstein's topology consists of six types of family involvement practices for building a comprehensive home-school partnership: 1) Parenting: assisting families with parenting skills; 2) Communications: communicating with families about school programs and student progress; 3) Volunteering: improving recruitment, training, activities and schedules to involve families as volunteers; 4) Learning at Home: involving families with their children in academic learning activities at home; 5) Decision Making: including families in school decisions, governance and advocacy activities; 6) Collaborating with the Community: coordinating the work and resources of community business, agencies, culture and civic organizations.

Applying the above framework will help educator preparation programs teach preservice teachers the internal and external factors that affect the family, school, and community partnerships. Some of the external factors are the family's socio-economic background and school policies. The internal factors are communication between families and schools and how social interaction between schools and families occurs (Epstein & Sanders, 1996). This framework will help answer the research question concerning the teacher's attitude regarding family engagement practices and how it changes during the teacher preparation program.

### **Purpose Statement**

Despite the empirical research that supports family engagement, teacher education programs are not always successful in preparing preservice and novice teachers to engage effectively in activities to support families (Abel, 2014; Epstein & Sanders, 2006; Sanders, Jones, & Abel, 2002). Current literature suggests that teachers know that family involvement matters (Lawson, 2003); however, they do not receive adequate hands-on training and experience to understand parents, build partnerships and engage families in trusting relationships that benefit parents and teachers as well as schools. It is important to know the current landscape of preservice teacher preparation for family and community engagement in teacher preparation programs. This study will look at the perspective of preservice teachers on their preparation for working

with parents in the largest urban university in the Southwestern United States. Teacher education programs, university professors, and school districts may benefit by further enhancing their programs for family engagement.

## Methods and Procedure

### Research Design

This study employs a group comparison and non-experimental survey research design with quantitative data collection methods. To accomplish the goals of this study, cross-sectional survey methodology was used to collect data from 3<sup>rd</sup> and 4<sup>th</sup> year preservice teachers in an Early Childhood (EC) - 6 elementary education program at a large urban university. According to Fraenkel and Wallen (2003), cross-sectional survey methodology is a time efficient design, as data are collected at one point in time from predetermined population. In this study, quantitative data were collected from two groups of preservice teachers at one point in time.

### Sample and Data Collection

**Participants.** Participants for the study were all the students enrolled in the 3<sup>rd</sup> and 4<sup>th</sup> year of EC-6 teacher preparation program at a large urban university. This teacher education program prepares teachers for EC-6, 4-8, 8-12, and EC-12 certification levels and is organized into four phases: pre-teaching, developing teaching, student teaching 1, and student teaching 2. Demographic information about the participants was gathered and shared in the final paper.

**Participant Selection.** Purposive sampling was used in this study. According to Krathwohl (1998), purposive sampling is used when certain groups are likely to provide rich information. All the preservice teachers in their third and fourth year of EC-6 teacher education program at a large research university were selected to participate in the study as they completed their required coursework for pre-teaching and had the opportunity to observe and student teach in the public school classrooms. The third and fourth year preservice teachers provided rich information regarding their experiences in the program.

### Instruments

**Parent/Family and Teacher Survey Form.** The Parent/Family and Teacher Survey Scale consists of 12 Likert-type items that measure teachers' attitudes towards and preparation for family engagement. This instrument was first developed by Teagarden and Knorr (2010) and utilizes a four-point scale ranging from one (not prepared) to four (well prepared). According to Groff and Knorr (2010), the survey scale is designed based on the national standards of Parent Teacher Associations (PTA) for Family-School Partnerships and best practices for family engagement.

Additionally, four open-ended questions were added to the survey to gather evidence of instructional strategies that promote knowledge, skills, and understanding of EC-6 preservice teachers for family engagement in student learning. Further in the survey, there were four demographic questions about: 1) studying year, 2) gender, 3) ethnicity, and 4) teaching field.

### Data Collection Procedure

Data collection began at the beginning of the fall semester 2016 and continued until the early part of November. An online survey along with the consent form was distributed via email to all the students enrolled in their third and fourth year of teacher preparations program using the listserve database. The response rate was over 80%, and no face-to-face surveys were administered. A reminder was sent out after one week and again after two weeks in the form of the initial letter and invitation. The data were entered into a statistical software program Statistical Package for the Social Sciences (SPSS) for analysis.

## Results

### Demographics

A total of 439 students responded to the survey link sent in the email to all the junior and seniors enrolled in the fall semester of teacher education program in the large urban university. Twelve percent (12%) of students who responded the survey were male and eighty-eight (88%) were female. Table 1 presents the demographic information for preservice teachers (N=430).

Table 1  
*Demographic Information (N=430)*

Ethnicity	Number of Responses	Percentage
American Indian Alaskan Native	*	*
Asian or Pacific Islander	63	15%
Black or African American	34	8%
Hispanic or Latino	167	39%
White / Caucasian	142	33%
Mixed Race	23	5%

\*This category was omitted due to low number

The Parent/Family and Teacher Survey Scale was used to measure the preservice teacher's preparation for family engagement during the program; the Cronbach's Alpha for the survey items,  $n=12$ , was also calculated to test the reliability of the instrument of teachers' perspectives. According to reliability statistics, Cronbach's Alpha was reported as .940, which is interpreted as a highly reliable set of questions for this section of the instrument. The highest rated item ( $M = 3.33$ ,  $SD = .775$ ) was "Understanding the Value of Parent Involvement." The lowest rated item on the Parent/Family and Teacher Survey Scale ( $M = 2.09$ ,  $SD = 0.952$ ) stated, "I have the necessary skills to offer training that may enable parents to serve as representatives in decision-making bodies". Table 2 presents the means and standard deviations of survey items and subscales (N=360).

Table 2

*Means and Standard Deviations of Parent/Family and Teacher Survey Items and Subscales (N=360)*

	Items	M	SD
1.	Ability to Work with Parents	2.63	.897
2.	Ability to Hold Effective Parent-Teacher Conferences	2.43	.973
3.	Ability to Affect School Policies Concerning Parent Involvement	2.25	.936
4.	Understanding of Available Parent Resources	2.37	.975
5.	Understanding of How to Build a Family Friendly School or Classroom	2.98	.863
6.	I have the necessary skills to offer training that may enable parents to serve as representatives in decision-making bodies	2.09	.952
7.	Ability to Work with Diverse Families/Parents	2.97	.877
8.	Understanding of Parent Involvement in Title I NCLB	2.26	.992
9.	Understanding of Teacher Responsibility for Parent Involvement	2.78	.870
10.	Learned Strategies to work with Parents	2.48	.947
11.	Understanding the Value of Parent Involvement	3.33	.775
12.	Ability to determine if parents have sufficient knowledge about their child's educational needs to make major educational decisions for them	2.52	.897

To understand specific ways the preparation program is helping teachers learn to engage with diverse families, this open-ended item was included: "List the specific ways your teacher preparation program prepared you to work with families of various ethnic backgrounds in an urban school settings". Preservice teachers reported that the most common way was through classroom discussion (27%). Another twenty one percent of the preservice teachers responded that observation and field experience helped them prepared to work with families. Another, twenty five percent reported that required coursework and assigned readings help them learn to engage with diverse families. Moreover, eight percent of preservice teachers mentioned that specific assignments and class projects also helped preparing them for working with families. However, nineteen percent of the respondent mentioned that they had not received any instructions regarding how to work with various families to help them with their children's learning. Table 3 provides the summary of preservice teachers' responses (N=360) of specific ways the program prepared them to work with families.

Table 3

*Summary of Preservice Teacher Responses of Specific Ways Teacher Preparation Program Prepared them to Work with Families (N=360)*

Specific Ways	Number of Responses	Percentage
Through Classroom Discussions	96	27%
Observation and Field Experience	76	21%
Required Coursework and Readings	91	25%
Specific Assignments and Projects	29	8%
No Instruction Received	68	19%

### Discussion

The purpose of this study was to examine the preservice teachers' attitudes towards their preparation for involving families from diverse ethnic backgrounds in children's learning in urban school setting. Years of research have provided evidence of greater academic achievement and positive learning outcomes as a result of family's involvement and home-school partnership. The five core elements that should be part of preservice teacher preparation for family engagement include incorporating the national standards, advanced curriculum, collaborations among various stakeholders, continuous professional development, and evaluation of learning (Caspé, Lopez, Chu & Weiss, 2011).

The results of the study encourage understanding of the current evaluation of learning and make suggestions for further advancing the curriculum and/or professional development for the teachers. The findings of this study are consistent with the past studies where preservice teachers understand and value the importance of partnering with families for the child's learnings. However, teacher preparation programs need greater efforts to teach preservice teachers how to promote and encourage parents to take decision-making and advocacy roles to impact the school policies concerning parental involvement in their child education. The study results also indicated a need to have more classroom discussions regarding the state and national policies/programs involving students' learning to empower preservice teachers with the knowledge to support child and their families' educational needs. Likewise, the need for instruction and experience working with diverse parents was highlighted not only for novice teachers but also for experienced teachers by their school principals (Swain & Lewis, 2016).

This study highlighted that teacher preparation programs are incorporating the knowledge and experience regarding working with families at various levels of the program. The open-ended question revealed that preservice teachers are learning through classroom discussions, required coursework, readings, various class assignments, classroom observation, and field experiences. One unexpected finding was that percentage of the specific ways of learning to engage with families through field experiences was not the highest response received from the preservice teachers.

### Limitations and Future Directions

The study is limited to examining preservice teacher's field experiences during a teacher preparation program at only one of the large research university in southwestern part of United States and may not be representative of most teacher education programs. Further research will be needed to incorporate findings from other teacher education programs. Additionally, future studies might want to include interviews with preservice teachers to authenticate the responses received in the questionnaire, as there is no way of telling how much respondents had to understand the full context of the situation before answering the questions.

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# SUPPORTING TEACHER CANDIDATES WITH STANDARDS BASED LESSON PLANNING

**Kimberly A. Welsh**

Stephen F. Austin State University

**Robin D. Johnson**

Texas A&M University Corpus Christi

## Abstract

*Responding to the challenges that candidates face during the field experience and clinical teaching semesters in regards to lesson planning, instructional delivery, and personal reflection, the authors developed and utilized a framework for small group planning. The Explicit Learning Framework (ELF) provides a temporary scaffold to candidates and ensures that learners are receiving appropriate instruction that is aligned to standards. After several years of application and revision to the framework, it has proven to be a valuable tool for candidates as they move toward greater confidence and proficiency with planning for small group reading instruction.*

Keywords: teacher preparation, lesson planning, standards based instruction

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The Explicit Learning Framework (ELF) is an instructional support tool to assist candidates with crafting and delivering standards-based lessons for small group reading instruction. During field experiences and clinical teaching, candidates typically deliver standards-based reading lessons within flexible whole group, small group, and one-on-one settings. The ELF is designed as a planning, teaching, and reflective framework to assist candidates in providing targeted, intentional instruction to learners needing contextual and language support within core instruction. The ELF enables candidates to plan reading lessons that allow emerging readers to manipulate text, understand textual supports, and become independent readers. The ELF is a tool to assist with the thinking process when planning for explicit and targeted small group reading instruction. In addition, the ELF supports candidates with planning and reflection through a continuous improvement cycle.

Candidates often struggle with knowing what appropriate support may look like for individual learners and when to allow a learner to engage in cognitive struggle with a concept. For some learners, this cognitive shift may take longer than others and the candidate may have to provide various means of support several times within one lesson. For other learners, candidates may have to keep the support in place over a series of days before pulling away the support. This back and forth continuum is a technique that has to be refined over time by candidates and is unique to each learner's needs per the standard being taught at any given time. The level and duration of support is often based on the complexity of the standard being taught, the text being used, and the task to be performed (Fisher, Frey, & Lapp, 2009).

The ELF focuses candidates on one reading standard and spirals that standard throughout the framework to provide consistency and mastery of learning. During instruction, the sections of the framework are optional and flexible per the individual needs of a learner in the moment, but the standard does not change throughout the lesson. In addition to the redundancy of the spiraling standard, the candidate will fully script all sections of the ELF. This scripting allows university supervisors a window into the thought process behind the candidate's planning. When a candidate teaches a lesson and a

large majority of learners do not master the standard, the university supervisor can discern one of the following four factors about the candidate's level of understanding: (a) content knowledge of the standard, (b) the standard expectation, (c) the lesson planning process, or (d) instructional delivery methods. When a university supervisor is observing a candidate, the effectiveness of the instructional delivery should be the key focus, since the other three factors can be pre-assessed with the scripted ELF. It allows the university supervisor to predetermine when a candidate may need more assistance with understanding the meaning of standard content vocabulary, the level of rigor in the standard expectation, or how to maintain focus and intentionality on one standard throughout the entire lesson.

The Council for the Accreditation of Educator Preparation (CAEP) emphasizes the importance of candidates having knowledge of content and standards, as "...candidates develop a deep understanding of the critical concepts and principles of their discipline..." (Standard 1, 2013). Scripting the ELF takes a proactive approach to instructional delivery by pre-assessing a portion of the candidate's knowledge base prior to delivering instruction to readers. However, if a scripted ELF is solid in content knowledge about the standard, the standard expectation, and the lesson planning process, but readers still do not master the standard, instructional delivery may be the factor that needs to be addressed. This arduous task of scripting every single small group reading lesson would not be expected of classroom teachers, yet it is an excellent preparation and planning tool to clarify misunderstandings among candidates and to encourage them early on to be reflective practitioners (Brookfield, 2017).

Ideally, at the beginning of field experience, the classroom teacher, candidate, and university supervisor collaborate on evidence-based practices that are best for the group of learners with whom the candidate will work. The classroom teacher provides context and background regarding the students in the classroom. Then, the candidate uses the ELF to plan small group lessons in tandem with the classroom teacher to supplement and support the core reading instruction. Unfortunately, this scenario may not always be the norm. During field experiences, candidates may be given only 30 minutes of reading instruction time each day in which to teach prepared lessons. While most state standards require candidates to have experiences with a wide variety of diverse learners, many candidates are given only a small group of readers to work with over the course of an entire semester. In some cases, the candidate may be left to plan in isolation and to deliver instruction with minimal feedback and direction. Therefore, it is necessary that candidates have a deep knowledge regarding the standard content, understand the standard expectations, and know how to plan thoroughly and effectively with a cycle of reflection built into the framework for continuous improvement.

### **Explicit Learning Framework (ELF)**

The ELF serves as a process guide for candidates. One ELF template provides added support with an in-depth explanation for each section (see Appendix A), and another ELF template leaves each section blank (see Appendix B). Both templates are intended for the candidate to type the entire lesson plan, addressing each expanding section. Based on needs identified from previous lessons and informal assessment, the candidate will craft the ELF around one reading standard for which explicit instruction, modeling, and practice for mastery is needed. The first three sections and the last section are shaded to indicate that they are not part of the lesson delivery. These sections of the ELF are for the candidate to set up and reflect on the lesson. The un-shaded middle sections are the lesson delivery sections.

#### **Title of Book/Text and Genre**

It is important for candidates to note the book title or text and genre to make sure the correct text types are chosen for the standard they are teaching. For instance, an English Language Arts and Reading (ELAR) fifth grade Texas Essential Knowledge and Skills (TEKS) statement reads, "Students are expected to use multiple text features and graphics to gain an overview of the contents of text and to locate information" (§110.16[11][D]). The tagline for this ELAR standard specifies that this expectation should be taught and assessed in an informational text/expository text (§110.16[11]). University supervisors need to be aware of this cross check to evaluate whether the standard being taught in the ELF is aligned with the correct text and/or genre type. This provides a layer of accountability for candidates to ensure that an aligned curriculum is

being taught. It also should be an expectation of the university supervisor that the candidate has thoroughly read the book or text that is listed in this section so that instruction is relevant for both skill and context.

### **Standard**

The ELF's structure centers around determining which standard meets the reading needs of the small group. This same standard will guide and spiral throughout the entire lesson plan and will align to the (a) book/text/genre section, (b) the stated purpose, (c) the as you're reading (AYR), (d) the follow up, and (e) the wrap up sections. Individual or collective learner needs, informal or formal assessments, teacher observations, anecdotal records, or school wide curriculum scope and sequences are all key considerations that may influence areas of needed growth when determining which standard the lesson will address.

### **Supplies**

Since many candidates have to pull reading groups in tight places within the classroom to deliver targeted instruction, a dedicated supplies section on the ELF planning template proves beneficial and helps to ensure that instructional time is maximized. Any materials that might be utilized within a small reading group would need to be noted, such as white boards, dry erase markers, books, bookmarks, erasers, magnetic letters/tiles, data sheets, pencils, vocabulary cards, realia, media, and picture cards. Candidates are encouraged to use a multi-modal approach while teaching in order to accommodate a wide range of diversity such as English language learners (ELL), advanced readers, progressing readers, and unmotivated readers.

### **Focus**

The focus is a way to center readers on the content and is used as an attention getter to quickly set the conditions and context for small group learning. This focus allows readers to shift their stance from whole group to small group reading instruction, and candidates should pose the question as soon as readers are sitting down for immediate engagement. It can be as simple as, "What do we know about fairytales?" to a more explicit question, such as, "What is a strategy we can use when reading does not make sense?". The candidate may elicit inquiry by displaying a picture or may have some sort of realia that prompts readers' questions. The focus can be content or standard driven and should take only a few seconds. The purpose is not to expound on a topic or allow for elaboration. It is a quick question (and possibly answer) focus. Some examples of how to frame a focus might be:

- Showing an image of a cowboy on the range and prompting, "Look at this picture and describe to me what you see".
- Asking readers to predict what the text will be about based upon a picture from the text.

The purpose is not to question readers and actually 'expect' an answer. It is to heighten curiosity and to activate immediately a motivation toward learning.

### **Stated Purpose**

This section includes what the candidate tells the readers they will learn as a result of small group time. It is in student friendly terms. For example, "Today, we will compare and contrast Cinderella and Bubba, the Cowboy Prince, using a Venn diagram". The university supervisor needs to pay particular attention that this stated purpose matches the standard that is listed. This is evidence of alignment between the standard and the candidate's knowledge of the standard.

### **Word Instruction**

Each small reading group lesson should include a small amount of time to explicitly pre-teach any needed vocabulary. There are two parts to this section. The first part is for vocabulary or specialized terms found in the text. Candidates should thoroughly read the chosen text and choose words that might prevent a learner from reading fluently and/or might hinder comprehension. This might be an unusual word, a lengthy word, a word that does not follow any typical

phonic pattern, or academic vocabulary that is specific to the content (Beck, 2013). No more than five words should be introduced in one lesson. If a text is lengthy, then two-three vocabulary words might be introduced each day. Candidates should choose a consistent way in which vocabulary will be introduced and taught, and the words should be taught in context in order to provide authenticity and transfer. Depending upon the stated purpose of the lesson, the definition of the vocabulary word might be given prior to reading, or it might be the goal of the lesson that the learners are to utilize the context to determine meanings. If a definition is given prior to reading, candidates should use a student friendly definition that would fit in the context of the text as opposed to a dictionary definition. This automaticity of word recognition will free up cognitive space for readers to focus on meaning rather than trying to determine unknown words. The candidate quickly states the pronunciation of each word. An example of candidate talk, with the proper noun underlined if there is one, might be:

- This is Cinderella. She is a princess that we are going to read about.
- This is Bubba. That is a nickname given to many men in the South. He is a cowboy that we are going to read about.
- This word is heritage. Heritage is the ways of life that is seen in the country we are going to learn about. You will see it many times in our text.
- This says Washington. It is one of our 50 states. If you come to this word and you forget what it says, just use the strategy of ‘W’ and keep reading. You will know it is a place. Since Washington was not necessary in understanding the meaning of the story, no emphasis was placed on having to know that exact word. This familiar strategy to use for proper nouns can be applied in all content areas.

### **Text Features/Format**

Each lesson also needs to include time to recognizing various text features or text formatting exhibited in different types of text. This segment of the ELF is one that does not tie directly into the standard. The purpose of including this as a part of the framework is to allow readers to have recognition and familiarity with features or formatting that aid learners during the cognitive shift of responsibility from the candidate to the learner in order to promote reading independence. This is a quick, focused section that draws readers’ attention to something unusual or distinctive about the text. It may be introducing a new feature each day of the same text or having one feature that is expounded upon during the course of the text study. It may be as simple as a discussion about how the formatting of the text is different from previous texts that have been read. Text features or formatting might involve teaching a feature for the first time or it might be a review of a feature previously seen. There are a myriad of features and formatting that can be pointed out: table of contents, index, italicized words, punctuation, use of quotation marks, illustrated versus photographed pictures, labeled pictures, bolded words, glossary, picture clues, narrative formats versus expository formats, underlined words, context on the spine of the book, repetitive text formats, and text boxes. Readers benefit from the added language support that is particular to certain types of texts as well as contextual support that make text comprehensible.

### **Preparing the Text**

This part of the ELF consists of two parts. The first part, activating prior knowledge (PK) about text content, is the most important when initially introducing a new text. Navigating through readers’ prior knowledge and determining the level of initial knowledge of a topic is critical in setting up the correct frame of mind for the brain to acquire new information. The second section, modeling the task that demonstrates learner mastery of the standard, is to provide a reference to the learner for what is expected during or after reading. If the candidate tells students they are to make a Venn diagram comparing and contrasting Cinderella and Bubba, the Cowboy Prince, then the candidate should quickly review a Venn diagram. “Today, after you are finished reading, you are going to compare and contrast Cinderella and Bubba, the Cowboy Prince using a Venn diagram. Who can show me how to make a Venn diagram here on my whiteboard? (reader makes two large overlapping circles on the whiteboard). How will we know where to put the comparisons and where to put the contrasts? Yes, we need to label both sides and the overlapping middle section (candidate labels one side with a ‘C’ for Cinderella and one side with a ‘B’ for Bubba to show the contrasts, and ‘C&B’ over the overlapping section for the comparisons).” The candidate then

leaves the whiteboard out as a visual model for the readers when they begin to construct their individual Venn diagrams after reading.

### **As You're Reading (AYR)**

This is perhaps the most important part of what the candidate actually says to the readers. This section tells learners exactly what the purpose for reading will be. Although the candidate shared the stated purpose earlier, there have been several sections between it and actual reading. This allows learners to have a set purpose prior to opening and reading the text independently. Candidates should tell learners in one succinct sentence exactly why they are reading the material and what they will do with the new information either during or after they had read the text. An example of the AYR could be something as simple as, "As you're reading about Bubba, the Cowboy Prince, pay particular attention to characteristics that are in comparison or in contrast from what we shared yesterday about Cinderella. You may use post it flags to mark characteristics you want to include later on your Venn diagram." This restating of the purpose and expected outcome of the lesson in a more succinct manner serves as an intentional way of focusing the brain on what is essential (Wolfe, 2010). The goal is that over time, readers transfer and apply this skill and begin to set their own purposes for reading during independent reading and when confronted with unfamiliar genres.

### **Text Engagement**

Unlike traditional round robin or popcorn reading formats where readers are not engaging at all times, a simultaneous reading format is utilized during the reading of the text. After the AYR is stated, readers are handed copies of the text being used. This may be in the form of authentic texts, leveled readers, newspaper clippings, magazines, poetry, content textbooks, or chapter books. Various reading formats are encouraged to encourage learners to read for different purposes and in a wide variety of texts. Candidates should be aware that behavioral observations of the reader, in addition to listening and providing feedback, are critical during this section. Anecdotal notes specifying reading gains and needs, in addition to reading behavior observations, should accompany this section in order for the candidate to track and notice patterns over time.

### **Follow-Up**

After the candidate has listened to each learner read, all are asked to come to a close with the reading. The readers will transition to the assessment task that was modeled by the candidate during prepping the text, and that is aligned to the standard, the stated purpose, and the AYR. The assessment task may be written, oral, individual, or group, and may be graded or not. It is one piece of informal assessment that candidates should use to guide future small reading group planning. If the task were to be completed during reading, then readers would begin their second read while completing the task.

### **Wrap-Up**

The wrap up is a dismissal of the readers from the small group that ties directly in to the standard, as opposed to the content of the book. University supervisors need to be cognizant about candidates leaving readers with skill/standard content, not text content. Candidates are to teach the reader the skill, not the book. Some wrap up examples might be:

- Tell me one comparison that is written on your Venn diagram between ...
- Who can share one fact/opinion?
- Did anyone notice a character trait?

Learners leave the small reading group and return to whole group reading without any disruption to the reading culture in the classroom.

### Candidate Reflection

Candidates fill in a quick reflection on the outcomes of the small group immediately following the wrap up. Preferably, this part will be completed after the learners leave the reading group and before the candidate assumes other classroom responsibilities. If the classroom teacher or university supervisor observed the lesson, the candidate should independently reflect on the planning, delivery, and outcome of the lesson before feedback is given in a shared conversation. This is for reflective purposes to assist the candidate with professional growth and with honing in on individual needs and gains of the readers. The following questions might guide the reflection:

- Did every reader master the standard? How did you know?
- Who would benefit from further instruction in this standard? How do you know?
- What one question could I have asked that would have probed deeper into the readers' thinking?
- Was the text complexity appropriate for this group of readers? How do you know?
- Was there anything that you would have done differently with this lesson? Why?

### Summary

Over a series of semesters, the authors observed that the inability to understand the processes and structures of planning hindered candidates' ability to deliver instruction effectively. When the ELF was created and used as a planning tool for candidates throughout reading coursework, candidates were able to focus on learners' needs and how to teach the standards in a way that met those needs during field experience and clinical practice. The ELF assisted candidates with anchoring lesson planning around one standard and scaffolding instruction throughout the entire lesson based on individual readers' needs. A space for critical conversations was also created since there was a shared understanding of the planning process between the university supervisor, the classroom teacher, and the candidate. The ELF has proven to be an invaluable tool for increasing candidates' level of understanding regarding (a) content knowledge of the standard, (b) the standard expectation, (c) the lesson planning process, and (d) instructional delivery.

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## Appendix A, Cont'd.

<p><b>Prepping the Text: (this allows the reader to access schema prior to reading) ** There are TWO parts to this section **</b></p> <p>3. <i>activating PK about <u>text content</u>: get readers thinking about CONTENT</i></p> <p>4. <i>modeling <u>task to assess skill</u> that will be completed during text engagement – skill (STANDARD)</i></p>
<p><b>AYR: (this states the purpose for reading - tell readers exactly what they will be doing during and/or after reading; this helps to focus the reader and aids in comprehension)</b></p> <p>5. <i>“As you’re reading, I want you to...”</i></p> <p><b>aligns to the Standard, the Stated Purpose, and the Follow Up</b></p>
<p><b>Text Engagement: (lead with higher level questions that assesses standard; anecdotal notetaking)</b></p> <p>6. readers may complete a graphic organizer, quick write, highlight, etc... (have learners read the entire text through the 1<sup>st</sup> time without any task; during the 2<sup>nd</sup> reading, hot read, they may complete task)</p> <p><b>this should be LONGEST section of entire ELF</b></p>
<p><b>Follow Up: (this is what candidate told readers they would be doing in the AYR; this is where a task is completed; this product relates directly to the standard)</b></p> <p>7. if task is started during 2<sup>nd</sup> read of text engagement, complete it here</p> <p><b>a task may be individual or completed as a small group; there is no time for a lengthy writing activity</b></p>
<p><b>Wrap Up: (how will you tie lesson together and dismiss readers from small group)</b></p> <p><b>candidates may ask a dismissal question tied to the standard</b></p>
<p><b>Teacher Candidate Reflection: (the lesson should be reflected upon as soon after teaching as possible)</b></p> <p>this may be handwritten, allowing for immediate reflection</p>

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Appendix B  
Explicit Learning Framework (ELF) Blank

<b>Teacher Candidate:</b>	
<b>Title of Book/Text:</b>	<b>Genre:</b>
<b>Standard:</b>	
<b>Supplies:</b>	
<b>Focus:</b>	
<b>Stated Purpose:</b>	
<b>Word Instruction:</b>	
<b>Text Features/Format:</b>	

Appendix B, Cont'd.

<b>Prepping the Text:</b>
<b>AYR:</b>
<b>Text Engagement:</b>
<b>Follow Up:</b>
<b>Wrap Up:</b>
<b>Teacher Candidate Reflection:</b>

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# "HECK, YEA. TECHNOLOGY IS THE BOMB, YO": STUDENT PERSPECTIVES ON A MOBILE TABLET PILOT PROJECT AND IMPLICATIONS FOR EDUCATOR PREPARATION

**Heather K. Olson Beal, Ph.D.**

Stephen F. Austin State University

**Mark S. Montgomery, Ph.D.**

Stephen F. Austin State University

**Mary Smith, M.Ed.**

Stephen F. Austin State University

## Abstract

*This exploratory case study of a mobile device pilot project at a regional comprehensive university highlights the experiences of students who participated in the project. Data, which included focus group interviews with student-participants and a post-survey of student-participants, were broken down into units of meaning (Lincoln & Guba, 1985) and then organized into discrete categories via open and then axial coding (Strauss & Corbin, 1998). Findings highlight student perspectives regarding how tablet usage changed the learning process for them (though in many cases, they struggled to articulate exactly how) and discussion of benefits and challenges of tablet usage in university classrooms. Findings have important implications for educator preparation programs and faculty which are training future teachers to work in classrooms with students and mobile devices.*

Keywords: mLearning, mobile tablets, student voice

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As use of internet technologies and mobile devices in PK-20 learning environments has exploded in the last decade, more research is needed that explores the impact of these technological shifts on students' academic engagement and learning outcomes, as well as the impact on pedagogical strategies and styles. This growing body of research is of particular importance to faculty in educator preparation programs who are training future teachers to use mobile technologies that may not yet even exist. Teacher educators are preparing teacher candidates who come to college campuses with a wide range of classroom technology experience ranging from none to teacher candidates who attended schools with significant access to and use of technology. Furthermore, teacher educators are training teacher candidates to teach in schools with a similar range in terms of access to and effective integration of technology.

In the rural area in which this case study was conducted, some teachers in area schools are using mobile technologies increasingly in their PK-12 classrooms to ask questions, deepen existing content knowledge, and co-create new knowledge with their students. As teacher educators, we began to wonder how college students perceived technology and how they feel about using technology to enhance learning. What do today's college students know about technology? How do they feel about it? Do they perceive it as an overall good? Do they use their devices as learning tools, or primarily as

communication devices? Are they inclined to embrace technology as a learning tool or to eschew it? These questions, which are key to designing teacher education coursework, creating meaningful and authentic assessments, and framing conversations about technology, are the impetus behind this exploratory case study.

While there is no one agreed-upon definition of mobile learning (or “mLearning”), it includes—in broad strokes—the pedagogical use of mobile computing devices such as phones, tablets, and netbooks (Brand & Kinash, 2010; Crompton, 2013; Manuguerra, 2011). Nearly a decade ago, Cobcroft and Towers (2006) identified three ways in which mobile devices would change the teaching and learning landscape: 1) changes among the learners, whom Prensky (2001) earlier identified as “digital natives” while older adults were called “digital immigrants”; 2) substantive changes with regard to the types, availability, and access to technology; 3) changes within institutions as administrators and faculty grapple with how to respond to these technological shifts. The following brief literature review focuses primarily on the ways in which technology use impacts the university student, which is the level of analysis of this study.

### Theoretical Framework

According to Crompton (2013), students today both expect and are expected by their professors to be active in their own learning—shifts which reflect the move away from behaviorism and towards cognitive-constructivist theories of learning (Bruner, 1966; Vygotsky, 1978) and problem-based learning (Wilson, 1996). The result of these pedagogical shifts is an increasing focus amongst scholars and practitioners alike on creating learner-centered environments (Freeman et al., 2014; Roehl, Reddy, & Shannon, 2013).

Research on mLearning, which seeks to connect the advent of mobile technologies with research on teaching and learning, is mixed. For example, numerous studies (Al Zahrani & Laxman, 2015; Chen, Lambert, & Guidry, 2010; Hargis, Cavanaugh, Kamali, & Soto, 2014) identified positive relationships between Web-based learning technology and student engagement and achievement. While Enriquez (2010) identified an overwhelmingly positive response from students towards the use of tablet PCs for learning, students in Rossing et al.’s (2012) and Miller’s (2012) studies reported both positive and negative perceptions of mobile technology usage. Henderson, Gibson, and Gibb (2013), on the other hand, identified advantages (e.g., size, weight, portability) of iPads for students with disabilities as well as disadvantages (e.g., lack of specialized software, difficulty writing lengthy writing pieces, social media distractions).

While Brand and Kinash (2010) call for more “empirical research that tests educational efficacy, not only interface acceptance or popularity” (p. 148), others lament the absence of student voice from educational research in general and urge researchers to highlight it (Bahou, 2011; Cook-Sather, 2006). Flutter and Rudduck (2004) posit that “The most important argument for listening to the pupil voice lies in its potential for providing schools with directions for constructing a better future” (pp. 131-132).

The primary objective of this exploratory case study of a mobile device pilot project at a regional comprehensive university in a rural part of Texas was to highlight the experiences and perspectives of college students who participated in the project. Because we wanted the college students’ voices and experiences to emerge with minimal influence from us, we began with three broad research questions that guided the study. First, what benefits (if any) did students experience during the mobile tablet pilot project? Second, in what ways did tablet usage change the learning process for the students? Third, what challenges did students experience with mobile device usage? This paper concludes with some implications for educator preparation programs which are grappling with how to best prepare teacher candidates to appropriately and effectively use technology in their future classrooms.

### Research Design

In the fall semester of 2014, the Vice President of Academic Affairs at the case study site (a regional comprehensive university of approximately 13,000 students) asked a team of university faculty and staff to investigate the feasibility of implementing a one-to-one mobile device initiative. A committee was convened that included faculty members representing

a range of disciplines and staff members from various university offices (e.g., student affairs, the Information Technology department, the business office) to gather information from other institutions and to explore existing research. Over the course of this process, it became clear that more time was needed before a university-wide initiative could be launched. Thus, it was decided that a smaller pilot project would begin immediately while discussions continued about a university-wide initiative.

Once the decision had been made to proceed with a smaller pilot project, five faculty members from the following disciplines were selected to participate in the pilot: mathematics, engineering, education, political science, and German. There was no formal application process; rather, faculty participants were chosen based on their interest in participating and recommendation from their department chairs. Student participants in the pilot project came from a range of classifications (with the majority being juniors and seniors) and disciplines. The Assistant Director of the university's Center for Teaching and Learning ordered two different tablet devices (iPads and Microsoft Surface tablets) for the predicted enrollment (n=145) for the five selected courses. Contracts were quickly drafted and vetted by legal counsel as students would be held responsible in case of damage or loss.

A case study (Stake, 2000) employing both qualitative and quantitative data collection and analyses methods was conducted over the course of one academic year, which included one semester of planning and the first semester of project implementation. The three authors had different roles. One occupied dual roles: first, as a committee member on the initial committee tasked with exploring the possibility of implementing a university-wide mobile tablet pilot project and then, as a researcher. One author worked directly with the students and faculty participating in the pilot project, so she was familiar to them and was present during the focus group interviews. The third author participated in data analysis, peer debriefing (Lincoln & Guba, 1985) and writing.

When the semester began, students in each participating class learned that their class was part of a mobile tablet pilot project. If students did not wish to participate, they were allowed to enroll in a different section. No students opted out of the mobile tablet pilot project sections. While initial projections were that those five courses would contain approximately 145 students, each of the five courses ended up with enrollment lower than expected, which resulted in a total of 91 students who participated in the mobile tablet pilot project. Students in all five participating courses (mathematics, engineering, secondary education, political science, and German) were invited to volunteer to participate in the research study. Participation was not required or assessed in any way. The study was reviewed and approved by the Institutional Review Board at the university where the study took place.

Data were collected from two primary sources. First, we conducted three focus group interviews with student-participants. The focus group interviews had between two and five participants each and lasted approximately one hour each. Students were given free pizza to eat during the focus group. Second, we distributed a post-survey to all 91 participating students that included a quantitative component with Likert scale questions and a qualitative component wherein participants were asked to provide written responses to open-ended questions. Eighty-eight students completed the survey.

In terms of data analysis, the survey data was first carefully examined and tabulated to see how the students answered the Likert scale items. Second, the open-ended post-survey responses were broken down into units of meaning (Lincoln & Guba, 1985) and organized into categories that represented events, ideas, or themes that emerged from the data via an open coding process. Third, the focus group interview data was similarly broken down into units of meaning (Lincoln & Guba, 1985) (Strauss & Corbin, 1998). Finally, all the categories were compared with one another via the constant comparative method (Glaser & Strauss, 1967). The next section shares the primary findings, followed by a discussion of the findings and implications for educator preparation programs and faculty.

### Findings

The first task was to assess how participating students said they were using the tablets. This depended largely on the professor of record for the course. Some professors used the mobile devices largely as expensive copying machines, disseminating electronic documents to students and allowing students to share documents from their tablets with the whole class via wePresent. Others used the devices to experiment with content-specific learning applications or games such as Kahoot and polling apps like Poll Everywhere.

Survey participants were asked to identify ways in which they and their classmates used the mobile tablets during class. During data analysis, their open-ended responses were coded and grouped into the following categories illustrated in Table 1.

Table 1  
*Uses of the Mobile Device*

Tablet Use	Percentage of Respondents
Completing in-class activities	33
Completing homework	28
Taking notes	26
Accessing websites/fact checking	20
Taking quizzes/polls	19
Discipline-specific usage (e.g., Arduino)	11
Sharing articles	10
Accessing professor's lecture notes or slides	10
Communicating with classmates	8
Communicating with professor	5
Accessing course ebook	4
Accessing online course delivery system (e.g. Desire2Learn)	4

The second task was to assess the extent to which students agreed or disagreed with the items listed, which focused on student use of, comfort with, and attitudes towards the tablets. Table 2 shows the extent to which students agreed/disagreed with the survey questions, where 1 = strongly disagree, 2 = disagree, 3 = no opinion, 4 = agree, and 5 = strongly agree.

Table 2  
*Students' Uses and Attitudes Toward Technology*

Question	N = 88	SD	D	N	A	SA	Mean
Prior to taking this class I was familiar with using a tablet as a learning tool.	88	14	17	15	23	19	3.18
I feel that the activities in this class have helped me become more comfortable using a tablet as a learning tool.	88	7	1	4	34	42	4.17
I am able to use the tablet for work in other classes.	88	8	3	6	28	43	4.08
I feel the tablet I have is very easy to use.	88	5	5	4	29	45	4.18
I used the tablet in class for non-class activities (for example: social media, texting)	87	21	19	9	20	18	2.94
I feel I take more notes because I have the tablet.	88	12	15	18	18	25	3.33
I feel I communicate with the instructor more because of the tablet.	87	5	13	16	19	34	3.43
I read a majority of the course material on the tablet.	87	5	13	16	19	34	3.74
I use my tablet to access additional materials to help me in this course.	87	6	2	4	30	45	4.22
I believe having a tablet has helped me learn.	87	8	2	5	37	35	3.93
I feel like the tablet negatively affected my ability to pay attention in class.	88	42	26	9	4	7	1.95

Student participants in this study were overwhelmingly (though not entirely) positive regarding the experience of using a mobile device in the classroom. In open-ended responses to the post-survey and in focus group interviews, students identified numerous benefits of the devices, including convenience, ready access to the internet, and ease of use. As one student explained, “The tablet was incredible . . . I was able to take it anywhere and it was compatible with everything I needed to do.” Students also noted that the device was lightweight and compact and that they benefited from learning how to use a new device with which the majority of them had not had previous experience. Out of 88 responses on the post-survey, only two noted that they had experienced “no benefits” from having participated in the mobile device pilot project.

Four-fifths (82%) of students in the post-survey agreed or strongly agreed that the tablet had helped them learn. In focus group interviews, the researchers asked students to describe whether and how the tablets had changed the learning process for them. Students responded similarly on the survey questions, noting that they participated, paid attention, read more of the course materials (51%), and communicated more frequently with their professor (81%) in the tablet-enhanced course than in their non-tablet-enhanced courses. For example, one student said, “My attention was heightened while using the tablet in class” and another said, “I was able to communicate more with my professors, mainly because my email was linked to my tablet.” Nearly half (n=43) of the respondents on the post-survey said that they took more notes in their tablet-enhanced class because of the tablet. Other students said the tablet helped them be more organized and efficient with their reading and studying. For example, one student explained, “I have become more streamlined in how I work, study, and present material in class.” Another noted that she had “become exponentially more organized and engaged in my classes” due to the tablet usage.

When asked to compare their tablet-enhanced course to their non-tablet-enhanced courses, students said that the tablet-enhanced course was much more engaging. In one focus group, a student explained that in most of their courses, “They all follow the same basic format. You just walk in, sit down, and write notes while the professor talks.” Students said that their fellow classmates do the following things during lectures: texting friends, sleeping, not attending, and “just basically blank stares.” One student noted that in a non-tablet enhanced course during which he estimated that the professor lectured 90% of the class time, a fellow student sits in the back of the room and watches Netflix with no sound on. Students

explained that they were more engaged in the tablet-enhanced courses and benefited from being able to actively participate in class and follow along with what the professor was doing on their own device.

Finally, students identified a wide range of challenges they experienced in their tablet-enhanced course, including compatibility issues, learning to use a different platform (Apple or PC), battery or other hardware issues (i.e. protective cases), weak connectivity, devices updating in the middle of class, and fear of breaking or losing the device and thus being held financially accountable to the university. While some students (42%) said the tablet negatively affected their ability to pay attention in class, others explained how they reserved the tablet only for use as a learning tool, using their phone for entertainment and social media. One student explained, “I was actually surprised by the amount of people that weren’t sitting there just on Facebook or whatever. I thought that was gonna be a problem, but people were actually engaged on the tablets.”

We close this section with a brief mention of one additional consideration which we believe represents fertile ground for future research (though it did not reach the level of research findings). More than one student attributed their willingness and comfort with participating more vocally in the tablet-enhanced course to the anonymity provided by certain apps. As one student explained, “I think the best part was that it is all anonymous. So, if you get it wrong, you can’t single out that person.” Another student noted that he “was more comfortable contributing to class discussion when we were able to type out our answers first.”

### Implication for Educator Preparation Programs

These primary findings suggest four implications for educator preparation programs. First, student participants in the study were almost unanimously in agreement that using the mobile tablet was a positive experience for them. However, when examining the multiple sources of data, different data sources revealed different answers, in some cases. For instance, while students responded in the survey and in the focus groups that the devices helped them, 42% of the survey respondents said that the tablet distracted them from paying attention in class. Furthermore, while the mean was 2.94 on the Likert scale item that asked “I used the tablet in class for non-class activities (for example: social media, texting), focus group participants reported that their *classmates* texted friends and watched Netflix. Students may have been reluctant to admit—either on the survey or in the small focus group settings—that they used the devices for non-learning-related purposes. The devices did, after all, belong to the university in which they were enrolled and the interviewer was someone who could potentially be their professor of record in a course. Thus, these findings reveal either a lack of honesty or a lack of awareness about their own technology use, coupled with very positive attitudes and dispositions towards technology use. If, as students, they are predisposed to feel favorably towards technology, it may be difficult for them, as teachers, to think critically about effective technology use in their future classrooms.

Second, students’ perceptions regarding changes to the learning process and/or to their study habits were unclear. Students responded that the devices were helpful. However, when pressed, they were not able to articulate *how* the device helped them learn or how it changed how they study. Their responses focused primarily on things like convenience, portability, weight and a gut sense that they did *more* than they do in their non-tablet courses. This finding is important to teacher educators because it suggests a limitation in students’ ability to self-assess their own learning or critically self-evaluate their use of the tablets as learning tools.

Third, this exploratory study suggests that there may be differences between the way students use their personal devices versus the way they use school- or university-loaned devices. Several students in the focus groups said that they had decided at the beginning of the semester to only use the university-loaned device for their classes. Therefore, they had not downloaded social media apps like Facebook, Snapchat, or Netflix so that they could maintain focus during class and only use the device to support their learning. This raises interesting questions about the advantages and disadvantages of BYOD (bring your own device) initiatives versus using school- or university-owned devices. These questions apply to higher education in general as well as to educator preparation programs which are seeking to train their teacher candidates to use technology for instruction. More research needs to be done to examine this potential distinction.

Lastly, findings from this study raise questions about the ways in which we, as educational researchers and particularly as teacher educators, measure “student engagement.” Students in this study reported feeling more engaged. They felt like the devices helped them learn. They reported communicating with their professors more frequently and accessing the content more regularly. Are these good measures of student engagement? Is it important whether students report *enjoying* a learning experience more? Why or why not? Is this evidence of the affective domain influencing learning outcomes? Though findings from this study do not extend to this, we believe they raise the question and hope that more research will be done to further understanding of the relationship between the affective domain, technology use, and student learning outcomes.

### **Scholarly Significance of the Study**

Despite the growing body of literature that focuses on mLearning, it is still a relatively immature field which will undoubtedly continue to expand. Findings from this exploratory study, which adds to the literature by highlighting the voices and experiences of students who primarily felt that the mobile tablets enhanced the learning experience for them, may be valuable to other universities who are considering similar mobile tablet initiatives and to educator preparation programs which are training future teachers. Findings also have implications for pedagogical professional development for faculty. As we plan for higher education reforms that we hope will increase student learning outcomes, better prepare students for further education and/or the workforce, and train future teachers, it is important to consider student attitudes and perceptions in addition to quantitative measurements of student achievement, such as test scores and GPAs, as well as other issues such as cost and wireless infrastructure, etc.

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The goal of the Forum is to promote scholarship regarding campus-based and field-based Teacher Education in Texas.

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Authors must be active members as a condition for publication.

**Submission Requirements**

**Style:** The manuscript must adhere to the Publication Manual of the American Psychological Association (6<sup>th</sup> edition).

**Format:** Cover Page (includes author(s), institution, email)  
Abstract Length: 200 words maximum  
Manuscript Length: 2,500-5000 words in length (double-spaced). No page numbers.  
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