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EDITORS

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Dr. Mark Meyers at
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We look forward to hearing from you.

Two Beginning Teacher Educators' Reflective Practices: A Collaborative Self-study

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Abstract:

Two beginning teacher educators lead a collaborative self-study to nurture their collaborative relationship into a community of practitioners and reflect and work on their teaching practices. The research question for the study was: In what ways do two beginning assistant professors support each other during the process of reflecting on their teaching? Data collected consisted of written teacher reflective journals and audio recordings of collaborative reflective conversations around significant success and areas of focus that emerged from our reflective journals. Findings suggest the ways the two assistant professors supported each other was by inviting and providing feedback, complimenting teaching strategies and risk taking, and supporting the exploration of alternative ideas by sharing new perspectives.

Introduction

Doctoral degrees in hand and eager to enter teacher education as assistant professors, we found ourselves both teaching in the Literacy program at a mid-sized university in the southeastern United States. Early conversations with one another revealed a shared belief in reflection as a tool for exploring and modifying our teaching practices in response to student need. Though we both taught university courses while pursuing our doctoral degrees, we still considered ourselves novices in the higher education classroom, and sought a way to make sure our practice continued to evolve.

It was also our past experiences of teaching in higher education that lead us to this project. The literacy course Author1 taught was one of four sections at the large university where she studied.

Because of this, she regularly planned and reflected on the progress of the course with one or all of the other course instructors; and Author2 co-taught or had a graduate assistant helping her with teaching a course during her studies. So both of us had a support system and a partner to work with in our previous teaching experiences. When we entered our new assistant professor positions, we found ourselves teaching literacy courses with a long-standing history within the college of education, but due to the size of the institution, there was only one section of each course offered. This created a new teaching experience for each of us and left us both feeling somewhat isolated in comparison to our prior teaching experience.

As such, we made the decision to purposefully enter into a collaborative self-study research project (Samaras, 2011) that would both foster our relationship as a community of practitioners (Wenger, 1998) and support the reflection on our teaching practices by collecting data through personal reflective journals and collaborative reflective conversations.

In the context of demands for teaching, research, and service in higher education, teacher educators need to be purposeful in finding the time and space to do collaborative work and meet in more formal ways (Martin & Dismuke, 2015). Reporting on the benefits of collaborative reflection on their use of technology in an undergraduate writing methods course, Martin and Dismuke (2015) noted that such collaborative reflection, "served as a space to debrief the challenges of new practices and experiences… and provided proactive support for implementation of digital products and processes in our courses" (p. 10).

Teacher Reflection

An essential component of effective teaching is continual reflection. Reflective practice is not a new term nor does it have a universal definition (Farrell & Jacobs, 2016). Dewey (1933, 1938) proposed that reflection grows from the practice of gathering information, studying the

problem, gaining new information from a variety of sources, and making informed decisions. Effective educators use what they know about the reciprocal nature of theory and practice to reflect on their practices (Schon, 1983). Teacher reflection, specifically reflective journals (Farrell, 2007), improve teaching performance, teacher self-efficacy (Jay & Johnson, 2000), and metacognition (Freese, 2006). Our definition of reflective practice, or reflection, aligns best with that of Farrell and Jacobs (2016) who suggest "…reflective practice is an evidence-based, cognitive act that is accompanied by a set of attitudes. …reflective practice can be a cooperative activity best completed through interaction with others" (p. 3).

Research Question

The purpose of this collaborative self-study was to learn from and with one another as we learned to support each other as reflective practitioners. Our question was: In what ways do two beginning assistant professors support each other during the process of reflecting on their teaching?

This question is contextualized in our stories of becoming assistant professors, specifically teachers of pre-service teachers. We both felt that our graduate work prepared us very well for teaching, which seems not to be the case for a good number of doctoral degree graduates (Hay et al., 2013), even though we felt we were still novices at this. This gave us confidence that our project would allow us to strengthen our existing practices by looking more critically at the ways in which we were responsive to the needs of our students.

Methodology

Participants

At the time of the study, Author1 was beginning her second year and Author2 was in her first year as assistant professors of literacy education. Before beginning our doctoral studies, we

were both K-12 public school teachers in the US. Author1 taught in both middle and elementary schools prior to working as an instructional coach, and Author2 was a middle school English as a second language teacher. While working on our doctoral degrees we both taught undergraduate courses as graduate teaching assistants, and Author1 had an additional year of experience as a lecturer.

Data Collection and Analysis

We collected data during the fall semester of the 2013-2014 academic year through 1) reflective journals and 2) audio recordings of collaborative reflective conversations around areas our reflective journals. During this semester, Author1 taught a literacy assessment course that met on campus on Monday for 50 minutes and off campus at an elementary school on Wednesdays for 100 minutes, with 40 minutes of this time spent in one-on-on tutoring sessions between the university candidate and a second grader. The university candidates also had a three-week field placement during this semester in which they did not meet for the literacy assessment course. Author2 taught an emergent literacy course that met on campus for 50 minutes three days each week. We each kept an electronic teacher reflective journal in which we wrote after the class meeting(s) during each week of the fall semester. The purpose of the journals was retroactive analysis of the classes we taught. We then exchanged our journals via encrypted password protected emails and read these prior to our conversations, which were recorded and transcribed. Each c conversation lasted 45 to 90 minutes and was framed around discussion of topics and items of interest from our journals. The journals consisted of a total of 24 weekly entries (Author2 composed 13 and Author1, 11) and a total of seven conversations. There were three additional conversations in the spring semester to check with each other on the progress of our teaching after the fall semester's collaborative work.

Our analysis focused on an evolving search for meaning within the data—an intentional journey of looking with new eyes at what was routine; our teaching (Tripp, 1993). We employed constant comparative analysis as a means of identifying emerging patterns and inductively discovering thematic threads that evolved from these patterns (Glaser, 1965, Lincoln & Guba, 1985). The entire data set was read in its entirety by both researchers to identify emergent themes. Codes were created and data was coded in its entirety by both researchers. Inconsistent coding was resolved though conversation and discussion. Then each code was read as a whole and findings were written.

Findings

The research question which framed our study was: In what ways do two beginning assistant professors support each other during the process of reflecting on their teaching?

Analysis of data revealed we utilized multiple avenues to support each other. The avenues explored in this paper are: inviting and providing feedback, complimenting teaching strategies and risk taking, and supporting the exploration of alternative ideas by sharing new perspectives.

Inviting Feedback

We naturally centered the discussions on inviting and offering feedback. We defined feedback as goal-oriented comments that provided actionable thinking used to foster further reflection or to implement a change in our practice (Wiggins, 2012). Inviting feedback on how to handle situations that arose in our classes emerged as a hidden objective in our journals. We noticed that as we explored potential scenarios for handling issues in our journals, the responding partner would step into the reflection during our conversations by providing feedback. Thus, the

awareness that our journal had a reader other than ourselves meant we included specific issues as a way to invite feedback.

As our trust and comfort with one another grew over time, we discovered that we wrote with a broader sense of reader in mind. We authored our beginning entries primarily for ourselves, and these entries seemed to capture what took place in our classes; a general overview of the "what" took place and our thoughts on how things went. However, the more we engaged in conversations, our journaling became a place to communicate directly with each other. For example, in her journal, Author2's writes about having her students teach lessons "… I have not figured out other way of making them peer teach the different types of reading lessons. I need to think of that for next semester. Any ideas?" (Author2, Journal, 11/13/2013). By including the question "any ideas?", Author2 acknowledges that she is open to ideas and establishes the expectation for Author1 to think into this with her. It is as if Author2 is purposefully setting the agenda for the collaborative conversation through her journal entry.

Providing Feedback

Noting that inviting feedback became a natural part of our journaling, we took a closer look at what we drew on as we offered feedback. Analysis revealed that our feedback stemmed from 1) our personal experiences from teaching in K-12 or higher education college instructors, 2) ideas generated but had not tried ourselves, or 3) a shared experience.

Author1 frequently wrote about her tendency to overplan her classes. This was a tremendous point of frustration and she repeatedly wrote about how she felt this meant she was not providing enough content for her students. Noting this recurrent theme in Author1's journals, Author2 accepted the invitation to provide feedback by sharing a strategy she uses when planning her own classes. Author2 stated: "So I kind of always have a non-essential

[activity planned] that it's nice to have, but if I don't have it [implemented in class] it's not the end of the world" (Author2, Conversation, 03/27/2014). Drawing from her personal experience planning for her weekly courses, Author2 offers that Author1 consider prioritizing her engagements.

We often framed suggestions for our courses based on our K-12 teaching experience. Such suggestions were often about classroom management rather than content. Note how Author1 specifically references the K-12 classroom:

In class, not in my college classes, but in regular classes, you can have students number or assign themselves a letter, A, B, C, D, and this week I want to hear from C or this time I want to hear from person B (Author1, Conversation, 10/23/2013).

In this way, we remind one another that we can draw on the strategies that have been successful in our past teaching experiences even though the context different.

We often provided feedback around assignments that were similar in nature even though we were not teaching the exact same course. For example, even though Author1 taught a reading assessment course and Author2 taught a language development course, planning and teaching a lesson was a common assignment. We both experienced different challenges with this particular assignment. Author1 shared that she struggled with how to help her students consider the depth of the lesson plan without actually having her students revise and rewrite the lesson plan each week. Author1 writes that she would like the students to revise the lesson plan but that there simply was not enough time for detailed feedback. To navigate this dilemma, Author1 explains that the students made reflective notes on the lesson plan immediately after the teaching and then added to these notes from peer discussions (Author1, Journal, 11/03/2013). During the conversation, Author2 affirmed and agreed with this strategy.

At times, we could not provide feedback coming from our direct experience. In these cases, we often asked questions to guide our partner's thinking or presented "what if scenarios" to create space for the other to self-solve the problem. For example, the assessment course Author1 taught included a practicum in which the pre-service teachers assessed and taught an elementary-school student. In her journal, Author1 shared that her students voiced concern about not getting enough small group instruction practice in their course (Author1, Journal, 11/21/2013). Author2's course did not have a practicum so she could not provide feedback from her personal teaching experience. Instead, she posed questions to help Author1 consider strategies for highlighting the relevance of the one-on-one experience:

Maybe you need to front load and ask them [the students] about why do you think we have that [assignment in this class]? What do you think is the value of knowing one student? Then maybe they start making the connections. Maybe they need more scaffolding about why do we need to work with one student? (Author2, Conversation, 11/23/2013).

Another place from which we drew to provide feedback was shared experiences and conversations from our work together at the same university and as colleagues engaged in this project. One benefit of being in this study together was that all of our conversations became a shared experience, and we could remind one another previously discussed ideas. An example of this was in a discussion about ways to use the course meetings across the semester in a structured manner that would perhaps make more deliberate connections between the course and the field placements. Author2 and Author1 both attended a state conference session in which the presenter discussed methods for creating course syllabi. Author2 drew on this shared experience to provide feedback to Author1:

Remember when we went to the conference and we talked about the syllabus? I think what we can do … just put two days for certain topics and have the third one to be decided based on things that are going on [in the classroom]. (Author2, Conversation, 03/20/2014)

Inviting and providing feedback to our partner was a natural and recurring aspect of our relationship and work together. We wanted to reflect on our teaching and make it better, by tapping into our partner's experience and knowledge to seek out ideas and suggestions. In so doing, we accepted that growth as a teacher in higher education was less likely to occur from practice in isolation.

Complimenting Strategies and Risk Taking

An important feature in personal reflection on teaching is to highlight the strengths. Growth comes not just from identifying areas of challenge but also from identifying specific attributes that work well. We read each other's journals with eye for complimenting practices of the other. In typical training of a K-12 teacher, which focuses on what went well when providing feedback, we complimented each other in our conversations and shared what we liked in the each other's journals in addition to providing feedback. When reading each other's journals, we looked practices that worked well or an idea under consideration and made sure to highlight these during our conversations.

For instance, in her journal, Author2 describes how she expected her students to do better on a phonics quiz, the first one in a series of quizzes (Author2, Journal, 09/12/2013). It is clear in the journal entry that Author2 is thinking through the issue. When Author1 highlights the quiz during the conversation, Author2 shared a solution she was thinking of using: dropping the lowest quiz grade. Then Author1 adds, "Well, that's a good idea to think about letting them drop

the lowest grade, and it might be, too, that they will do better as they progress. You never know" (Author1, Conversation, 09/27/2013).

When we complimented each other we sometimes highlighted the difficulty of the tasks and the progress we made. Author1 often concluded her journal with a to-do-list of as a way of holding herself accountable. She then began her next journal by commenting on the actions taken to accomplish the to-do-list. In one conversation, Author2 commented, "…I think you should pat yourself on the back because it was a long list of things [you wanted to do] that take time, so I think you did great" (Author2, Conversation, 10/23/2013). In so doing, Author2 encourages Author1 to see herself as an action-oriented practitioner.

An interesting component we noticed in our complementing of one another is how noticing a practice we identified as effective for our partner could be positioned as a goal for self-improvement within ourselves. In Author2's journal, she describes how she confronted a problem she was having with a student in her class who was distracted by her phone. Author2 shares how she had a quick one-on-one conversation about this situation (Author2, Journal, 06/09/2013). In the follow-up conversation Author1 comments, "So the student that was on the phone and you talked to her after class, so I just want to compliment you again that you're so assertive that way. I wish I was better about that" (Author1, Conversation, 09/27/2013). By recognizing this as an effective practice in Author2's repertoire, Author1 simultaneously identifies an area of need within her own practice.

Since our courses often met at the same time, it was not possible for us to do peer observations. The sharing of our journals became a way to invite the other into our learning communities. Besides inviting and providing feedback to our partner, complimenting and

highlighting what worked well in our collaborative conversations added to the level of support and community of practice we wanted to create.

Exploring Alternative Ideas and Shifting Perspective

During our conversations we identified situations from our partner's journal where the writing focused on a teaching challenge (often written through a negative lens) and provided them with a different interpretation. We both identify ourselves as constructivist, so the exchanges in which we provide each other with a different perspective of the situation is inherent to who we are as teachers and researchers.

It seemed the purpose of comments intended to shift the perspective were intended to keep each other from viewing our work through a negative lens. Often we rather bluntly stated that the other may be too hard on themselves (Author1, Conversation, 03/20/2014) or by saying the choice of words served to frame the reflection with a negative connotation:

… you said something that you'd like to feel more settled and under control. I think teaching is about changing and improving. So I don't think the choice of words is correct. I think you have things settled and under control, you are just thinking all the time about them in you're thinking about changing and improving. So, um just the choice of words didn't seem to – you are too hard on yourself" (Author2, Conversation, 11/21/2013).

In another example of perspective shifting, we talked about what "heard" the other contemplating through their writing and then offered our interpretation of the scenario. In Author1's reflective journal, she frequently wrote about the anxiety that accompanied course evaluations. She routinely expressed this by saying that the negative course evaluation meant that she was not doing a good job, thus developing a negative image of herself as a developing

professor. Author2 helps Author1 reframe this thinking in an attempt to shift her interpretation of the course evaluation. She stated:

What I'm hearing you saying, I think of the wording that you use in your reflection is confusing. You care about the course evaluations but more in terms of the fact that you haven't reached those students. I think you care about the feedback that they give you, not the fact that the evaluations will be bad. This is what I'm hearing you saying

We sometimes asked each other questions about a situation or context we shared to prompt and help our partner shift perspective. The questions we asked our partner seemed to have the purpose of guiding her into thinking at the situation from a different perspective or contemplating a different solution. Here are some examples of questions we asked: "…you still had some [students] who didn't look at the rubric [for an assignment] and my question to you…why do you think that happened? Why do you think there are still those who didn't look at the rubric?" (Author2, Conversation, 10/31/2013). This question was prompted by Author1's journal in which she talked some of her students not looking at all at a new rubric she provided them for a reflection assignment (Author1, Journal, 10/31/2013).

In another instance, Author2 was thinking through how she could help students understand the concepts of phonological and phonemic awareness better and here are the questions Author1 asked: "So my question to you is, can you... tell me the list of the variety of ways in which you helped them try to distinguish those two terms?" (Author1, Conversation, 12/06/2013); and then she continues: "So... What might you do? Are you thinking about what you might do differently next year- I mean next semester when you teach those concepts?" (Author1, Conversation, 12/06/2013). The questions had the purpose of prompting Author2 to think of what exactly she did and what she thought she might want to do next.

As interpretivist researchers and instructors, we believe one's experience and perspective influences how a context or situation is described. Having our partner sharing with us their interpretation allowed us the opportunity to see the situation in a different light. In general the shifting of perspective had the end goal of focusing on what was valuable and relevant in our teaching.

Conclusions and Implications

Our work together are unique to who we are as new assistant professors and our context. We both cared deeply about the teaching and learning that happens in our classroom. However, we realize there are similar situations and instructors out there who might benefit from hearing our story and how we learned to support one another. Teaching in higher education can be at times an isolated endeavor (Kraft, 2000) and in the context of clear established planning periods or blocks like we experienced in our K-12 teaching careers, we created our spaced and devoted the time to reflect and plan our teaching. Despite the fact that we were teaching different courses and there was no one at our university who taught a different section of our course, our common philosophy of teaching and desire to improve our work as instructors brought us together to this project and this process of peer collaboration and reflection.

This project created a routine of peer coaching that we believe has value for all beginning teacher educators. Beyond being assigned a traditional mentor to help us learn to navigate the inner workings of academia, we created a space where we could, without the fear of judgement, discuss our personal experiences as developing teacher educators. As such, we offer that beginning assistant professors consider finding a peer mentor and using a systematic method of reflection to support one another.

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Positively Influencing Preservice Elementary Teachers' Mathematics Content Knowledge and Conceptions

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Abstract:

Learning to teach mathematics is difficult. Having strong content knowledge and positive conceptions toward mathematics are important components of being an effective mathematics teacher. This study presents pilot data that explores the effectiveness of one course in positively influencing preservice elementary teachers' mathematics content knowledge and conceptions about teaching mathematics. Results indicate that the 84 preservice teachers who participated in the course experienced statistically significant gains in content knowledge, attitudes toward mathematics, and confidence in teaching mathematics.

Introduction

To be effective at teaching mathematics, teachers need to understand mathematics content, how students learn mathematics, and the pedagogy related to mathematics (Ball, Thames, & Phelps, 2008; National Council of Teachers of Mathematics (NCTM), 2014). When preservice teachers struggle with mathematics content and have negative conceptions about teaching mathematics, they are more likely to be less effective mathematics teachers. Unfortunately, elementary preservice teachers often suffer from high levels of mathematics anxiety (Vinson, 2001), low levels of confidence in teaching mathematics (Bursal & Paznokas, 2010), and implement traditional pedagogical techniques in the classroom (Guillaume, & Kirtman, 2010). This paper details the impact of a pilot course, designed for preservice teachers in a dual licensure (prekindergarten - grade 3 and special education prekindergarten - grade 3) program, on the preservice teachers' mathematics content knowledge and conceptions about

teaching mathematics.

The research questions for this study were:

1. Does the mathematics course improve preservice teachers' content knowledge?
2. Does the mathematics course influence preservice teachers' conceptions of mathematics?

This research study focuses on a mathematics course for preservice teachers to develop content and positively influence their conceptions of mathematics so that they not only develop a better understanding of content, but are more prepared to be effective mathematics teachers for their future students. In addition to studying how to best support preservice teachers' mathematics learning, the study seeks to inform teacher education in how to best prepare future early childhood mathematics teachers.

Framework and Related Literature

Teachers must possess and draw on a variety of knowledge bases to effectively teach mathematics. Shulman (1986) described the importance of possessing content knowledge and pedagogical content knowledge. Pedagogical content knowledge requires the application of content knowledge in ways that help others acquire the content knowledge. It also includes conceptions about the subject and teaching the subject, knowledge of students' thinking about the subject, and specific pedagogical strategies for the subject (Santagata & Sandholtz, 2018). Around the same time as Shulman, Ernest (1989) described a model in which knowledge of content and pedagogy, beliefs about mathematics and teaching mathematics, and attitudes about mathematics and teaching mathematics influenced instructional methods. More recently, Ball, Thames, and Phelps (2008) extended Shulman's work by developing the idea of mathematics

knowledge for teaching, a framework that includes content and pedagogical content knowledge, but with three specific domains for each.

In subject matter knowledge, Ball, Thames, and Phelps (2008) suggest teachers must possess common content knowledge, specialized content knowledge, and horizon content knowledge. In other words, they not only have to know the content, but also how content applies to teaching and how it is organized across the curriculum. To do this, teachers need both a procedural understanding and also a conceptual understanding of mathematics. Teachers who understand mathematics conceptually are more likely to have more effective mathematics instruction (Fenneman & Franke, 1992). Instead, elementary teachers are more likely to be well versed in the basics of math facts and algorithms and lack a strong conceptual understanding of mathematics . This should not be a surprise as most teachers who are tasked with improving the educational system are products of that flawed system, in which "their own opportunities to learn mathematics [were] uneven, and often inadequate" (Ball, Hill, & Bass, 2005, p. 14). With that caveat in mind, there are strong connections between teachers' content knowledge and the decisions they make when teaching mathematics (Hill et al., 2008).

Ball, Thames, and Phelps (2008) delineate the domains of pedagogical content knowledge into knowledge of content and students, knowledge of content and teaching, and knowledge of the curriculum. These domains focus on how teachers think about students' misconceptions and understandings, how they sequence the representations or examples they use when teaching content, and how they think about presenting or teaching content. Thus, the conceptions teachers have about mathematics and their mathematical content knowledge influence the way they teach mathematics (NCTM, 2014; Ernest, 1989, Wilkins, 2008). Thompson (1992) defines conceptions as a "general notion or mental structure encompassing

beliefs, meanings, concepts, propositions, rules, mental images, preferences" (p. 130). Similarly, McLeod (1992) defined affective domain as "a wide range of beliefs, feelings, and moods that are generally regarded as going beyond the domain of cognition (p. 576). Within the ideas of conceptions and affect, then, include beliefs, attitudes, dispositions, anxiety, and confidence (Philipp, 2007).

Elementary teachers generally have higher levels of mathematics anxiety, lower confidence in teaching mathematics, and higher negative attitudes toward mathematics (Vinson, 2001; Bursal & Paznokas, 2006; Ball, 1990; Karp, 1991). When teachers have higher mathematics anxiety, they are less likely to be confident in teaching mathematics (Bursal & Paznokas, 2006). These negative affects many elementary teachers possess toward mathematics can influence their instruction of mathematics (Philipp, 2007). The literature clearly describes weaknesses of elementary mathematics teachers in both content knowledge (e.g., Fennema & Frank, 1992; Ball, Hill, & Bass, 2005) and conceptions (e.g., Vinson, 2001; Bursal & Paznokas, 2006). While this serves as a call to action for teacher preparation programs, it should also be noted that most American adults' mathematical knowledge is as weak, if not weaker, than teachers' knowledge (Ball, Hill, & Bass, 2005). Ultimately, the relationships between conceptions, content knowledge, and teaching of mathematics are complex and interrelated (Llinares, 2002). Therefore, in this study, we focused on preservice elementary teachers' content knowledge and conceptions of teaching mathematics as important factors in the development of their knowledge of teaching mathematics.

Method

Setting

This study examined a pilot course that was offered and taught by one faculty member at a large public research university in the Mid-Western United States. Initially, the course was created as a response to preservice teachers' needs for remediation before entering a mathematics content course for early childhood and special education majors. To register for the mathematics content course, preservice teachers must pass a 30 question placement test by answering at least 24 questions correctly. The test covers mathematics topics from elementary school curriculum through the middle school curriculum. If the preservice teachers fail the placement test, they can retake the test or enroll in a remedial mathematics course the following semester. The remedial mathematics course is taught in a large setting and extensively utilizes technology in the ALEKS program. Students are required to complete a certain number of hours of time on the technology each week. To pass the remedial course, students must meet their time requirements and pass their exams with a 70% score or higher. While an efficient use of resources, this method of instruction did not meet the needs of many preservice teachers who already struggled with mathematics and had math anxiety.

The mathematics course in this study was designed to meet the needs of preservice early childhood teachers. The course was designed to build preservice teachers' conceptual knowledge of elementary mathematics content, particularly in the number domains (e.g., operations and algebraic thinking, number and operations in base ten, and number and operations--fractions). The course also emphasized the sociomathematical norms used in mathematics education courses at the university in order to socialize preservice teachers to the expectations of the mathematics community. Thus, the course was designed for preservice teachers to not only gain

a more robust understanding of the content but also to prepare them for their future mathematics learning environments and to model reform oriented learning environments they can use as teachers.

Participants

Preservice teachers (n=84) enrolled in Spring 2018, Fall 2018 and Spring 2019 semesters of the course participated in this study. Of the 84, 49 preservice teachers had completed the placement test (i.e., taken both the pre and post test). The other 35 students were missing a pre test or post test score. Some students missing a pre test score were freshmen who elected to take the course without taking the placement test. Others lacking post test scores were absent when the test was administered. Of the 84 preservice teachers enrolled, 80 were female and four were male. Eighty-eight percent of the class self identified as White, 7% self identified as Black, 1% self identified as Asian, 1% self identified as Latinx, and 3% identified as other/mixed race.

Data Collection & Analysis

To examine if the preservice teachers' content knowledge improved after completing the course their pre and post scores on the university mathematics placement exam were collected. The pre-test was given before they enrolled in the course. The post-test was given in the last week of the course. In order for participants to pass the pretest and not be qualified to take the course they needed to receive a minimum score of 24.

To examine if the invention influenced the preservice teachers' conceptions of mathematics the Mathematics Experiences and Conceptions Surveys - Entry (MECS-E) was administered at the beginning and end of the course. The MECS-E is part of the larger MECS which is designed to "understand the evolution of conceptions for teaching mathematics" (Jong & Hodges, 2015, p. 408) during preservice teacher candidates' university coursework and field

experiences. Table 1 shows sample questions from the instrument. The MECS-E is a likert-type scale with six levels ranging from strongly disagree (1) to strongly agree (6). The survey has been used with preservice elementary teachers enrolled in elementary education programs in the United States. MECS scales have been validated at the item level in other studies and populations (e.g., Jong & Hodges, 2015).

Table 1

Sample MECS-E Items

Item	**Construct**
I like mathematics.	Attitude
I enjoy solving math problems.	Attitude
I am knowledgeable in mathematics.	Confidence
My knowledge of mathematics is sufficient to teach.	Confidence

Only attitude and confidence in teaching mathematics were examined in this study. Attitude and confidence were chosen because both constructs are known to change more quickly than beliefs (Philipp, 2007; Benbow, 1995; Jong & Hodges, 2015). A paired-t test was conducted to compare the pre and post-test scores for the content test, as well as the MECS-E categories of attitude and confidence in teaching mathematics. The Bonferroni method was used to control for type I error, and the adjusted alpha was 0.016 (Hinkle, Wiersma, & Jurs, 2003).

Results and Discussion

A paired t-test was conducted to compare the pre and post test scores for the content test, and the MECS-E categories attitude and confidence in teaching mathematics. The thirty-five participants missing either the pre or post test for the content test were excluded from this part of data analysis. There was a significant difference between the pre and post test scores for all of the items examined (Table 2).

Table 2

Results from t-tests

	N	Mean		SD		Significance
		Pre	Post	Pre	Post	p-value
Mathematics Content Test	49	17.16	23.84	3.24	2.32	p < 0.001
Attitude Towards Mathematics	85	2.91	3.40	0.887	1.16	p < 0.001
Confidence in Teaching Mathematics	85	3.65	4.33	1.06	0.92	p <0.001

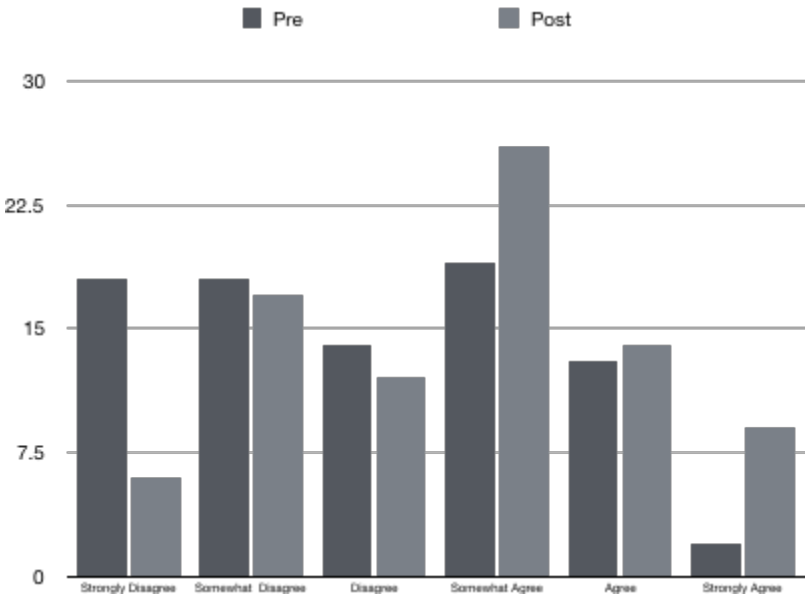
Participants performed significantly better on the content test after they completed the course. On average, the test scores grew by more than six points on a 30 point test. This shows an average gain of more than six items, or more than 22 percentage points after participating in the course. As a result of this course, participants would now meet the requirements needed for further content study in their educator preparation program. Increasing content knowledge was a

primary goal of the course. As increased content knowledge is likely to influence teachers' conceptions (Hill et al., 2008). This expectation is reflected in preservice teachers' changes in attitudes toward mathematics and confidence in teaching mathematics.

There were significant differences in both preservice teachers' attitudes toward mathematics and confidence in teaching mathematics after the course at $\alpha < 0.001$ level. On average, overall preservice teachers' attitudes towards mathematics changed from strongly negative attitudes towards teaching mathematics to having a somewhat positive attitude towards teaching mathematics. An example item included in this category is, *I enjoy solving math problems*. Figure 1 demonstrates the change in individual answers to this item.

Figure 1

Frequency of student responses for "I enjoy solving math problems"

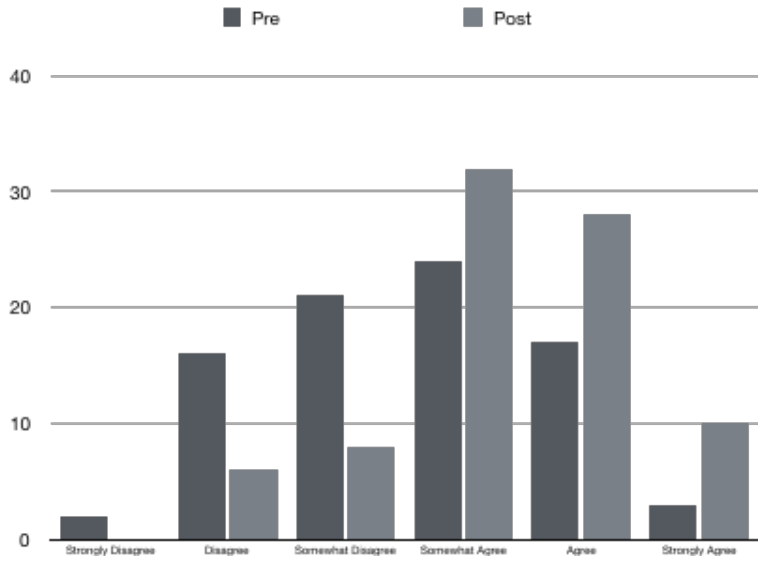


On the pretest 59.5% of the participants expressed some level of disagreement with the statement "I like solving math problems" and 40% agreed with the statement. Only 2% strongly agreed that they liked to solve math problems. However on the post-test on 58.4% of the participants somewhat agreed, agreed or strongly agreed that they liked solving math problems.

Confidence in teaching mathematics had similar positive gains. On the pretest 57.8% of the preservice teachers' responded that they at the beginning of the course ranged from disagree somewhat disagree in their confidence to teach mathematics. On the post test 72.6% of the participants responded positively regarding their confidence to teach mathematics. One item included in the survey was, *I am knowledgeable in mathematics*. On the pretest, 47% of the participants did not feel confident they were knowledgeable in mathematics. In fact, only 24.1% of participants agreed or strongly agreed with the statement they were knowledgeable in mathematics. Following the class, participants' confidence in their knowledge of mathematics increased. Only 16.7% disagreed or somewhat disagreed with the statement "I am knowledgeable in mathematics" while 83.3 % of the participants agreed with the statement. It is also important to note that none of the participants responded they strongly disagreed with the statement "I am knowledgeable in mathematics" on the post test. Figure 2 demonstrates this shift.

Figure 2

Frequency of student responses for "I am knowledgeable in mathematics"



Participants' confidence in their knowledge of mathematics increased as well as their content knowledge. Due to the complex relationship between content knowledge and preservice teachers conceptions about teaching mathematics (Llinares, 2002), it is not surprising that as participants' content knowledge increased, their beliefs they were knowledgeable in mathematics also increased.

The results of this study demonstrate the course was successful in improving the preservice teachers' mathematics content knowledge. While this was a primary goal of the course, it is also important because mathematics content knowledge can influence conceptions about mathematics (Hill et al., 2008). The course also positively influenced preservice teachers' conceptions of mathematics. Their attitudes toward mathematics significantly shifted from predominantly negative to more positive. A similar shift was seen in the preservice teachers' confidence to teach mathematics. While these are important first steps, the results do not show that after this 15 week course the preservice teachers all have extremely positive attitudes toward mathematics. Thus, there is a need for sustained mathematics learning in the context of the mathematics preservice teachers will eventually teach in order to continue to improve content knowledge and conceptions.

Limitations & Future Directions

The primary limitation of this study is the small sample size. This study reports on the initial findings of a pilot course that was offered over three semesters. As such, conclusions may not be fully generalizable, data collection and analysis are ongoing. Even with the small sample size in the content knowledge analysis, there are important results emerging from the data analysis. Specifically, preservice teachers had a statistically significant difference in their content knowledge, attitudes, and confidence in teaching mathematics after participating in the course.

Future studies will continue to monitor the effectiveness of this course as more sections are offered and more preservice teachers enroll. Comparisons between different groups (i.e., first generation students to non-first generation students) is another area to study when the sample size is larger. Moreover, longitudinal work is needed to examine how the course prepared the preservice teachers for their mathematics content course and how their conceptions evolve throughout their coursework and field experiences. Additionally, due to the population this course serves, examining the course's impact on preservice teachers' retention in the major is also an area of future study.

Conclusions

The results from this pilot study show the significant positive impacts the course had on preservice elementary teachers' mathematics content knowledge and conceptions of mathematics. The literature is clear that changing preservice teachers' beliefs change slowly and over time (Philipp, 2007; Conner & Gomez, 2018). However, beliefs are only one component of preservice teachers' conceptions of mathematics. Other components, such as attitudes and confidence, can change in shorter periods of time, as evidenced by the results of this study. Both statements—beliefs change slowly while other components of conceptions about mathematics change quickly—reinforce the need for more intentional, varied, and in-depth opportunities to study mathematics for preservice elementary teachers. Expanding and replicating a course similar to the one described here can provide one opportunity to provide the intentional, in-depth opportunities to study mathematics that preservice elementary teachers need.

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Teacher Candidates' Values Regarding Field Placement: An Exploratory Study

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Abstract:

Field experience is routinely held up as the most important and powerful factor in preservice teacher preparation from a variety of perspectives. However, little is known about specific elements that contribute to lasting, positive outcomes in field placement. This exploratory study investigates teacher candidates' perceptions of field experiences across major. Results indicate significant differences by major in terms of what teacher candidates consider to be of greatest value in a field placement. Implications for teacher preparation programs are presented.

Introduction

The importance of fieldwork to quality preservice teacher preparation has been known for decades (Cochran-Smith & Zeichner, 2005). Not only do novice teachers agree that fieldwork was the most critical aspect of their preparation, but research studies tend to support this conclusion (NCATE, 2010). Teacher educators also agree that such placements are important to teacher preparation, provided they are carefully managed, supported, and aligned to coursework (Bacevich, Dodman, Hall, & Ludwig, 2015).

The last decade has seen an increase emphasis on enhancing both quantity and quality of field experiences for teacher candidates. In fact, the term "clinical experiences" has replaced the all-encompassing term "field experiences" in many places, connoting increased attention to making strong connections between course- and fieldwork through close partnerships and supervision (Hollins, 2015; Zeichner, 2010).

Other aspects of this movement include emphases on coaching and mentoring, increased use of clinical faculty to strengthen and maintain partnerships, and performance assessment of teacher candidates (Hoffman, Wetzel, Maloch, Greeter, Taylor, DeJulio, et al., 2015; Stillman, Ragusa, & Whittaker, 2015). This national movement has been supported strongly by professional organizations such as the National Education Association (NEA), National Council on the Accreditation of Teacher Education (NCATE), Council for the Accreditation of Educator Preparation (CAEP), and American Association of Colleges for Teacher Education (AACTE) (AACTE 2018; Imig, Wiseman & Imig, 2011).

Despite this fervor over intensifying "clinical experiences" in preservice teacher preparation, the longstanding and well-documented gap remains between theory and practice in this area. The disconnect between course- and fieldwork in teacher preparation has been discussed for decades and continues to manifest itself in several ways. Zeichner and Bier (2018) provide common examples of this issue, including teacher candidates being placed with cooperating teachers who have little if any knowledge of the partner university's program or its goals, incompatible philosophies presented in K-12 versus university settings, and "mentoring" that is ineffective or insufficient due to lack of time and resources for mentor preparation and / or follow-through. "As a result of this lack of a shared vision and common goals, the usual ways in which placements are determined and the structure of the cooperating/mentor teachers' roles, teacher candidates frequently do not have opportunities to observe, try out and receive detailed feedback on their teaching of the methods they learn about in their coursework" (Zeichner & Bier, 2015, p. 23).

Unfortunately, despite the attention given to this issue in the professional literature, the knowledge base on field experiences overall remains quite limited. Very little is known about

specific aspects of partnerships, particularly as research attempting to link these aspects to later teacher quality has been unsuccessful (Authors, 2014). Varied research methods that are often difficult to replicate have contributed to the confusion and lack of valuable outcomes I this area. What is known is that "learning to practice is impacted by individual, instructional, and contextual factors – some of which we are only beginning to understand" (Clift & Brady, 2006, p. 331).

This exploratory study investigated the perceptions of 139 prospective student teachers who were beginning the last semester of their preparation. The study seeks to understand their values related to field experience by major. They were asked about various aspects of their field preparation, including number of semesters of placement, their overall feelings of efficacy, and to identify their most valuable field placement and describe why they felt it was most valuable. The purpose of the study was to learn more about teacher candidates' perceptions of value with respect to field placement.

Methods

Participants were 139 student teachers at a midsize, midwestern university. Students were provided a questionnaire that included information on quality and quantity of field placement, as well as an overall measure of efficacy. Simple descriptive statistics and correlations were used to analyze quantitative data. Inductive analysis (Patton, 1990) was used to determine perceptions of valuable aspects of field placement.

Participants

The population included 141 college seniors enrolled at a mid-size, public university in the Midwest. They were all teacher candidates attending a required seminar for prospective student teachers. The purpose of the seminar was to introduce them to rules and expectations

surrounding the student teaching semester. One hundred thirty-nine (98.6%) candidates completed the survey. Out of these 139, the largest number were secondary education majors (43%), followed closely by elementary education (37%). Fourteen percent were special education majors, and six percent self-identified as either art education or music education majors. On average, participants reported participating in four semesters of field placement prior to student teaching. This finding did not vary by major.

Procedure

Participants were given a one-page questionnaire consisting of: (1) background data (results reported above); (2) the Short Form Teacher's Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hay, 2001); and (3) an open-ended question asking them to identify their most valuable field placement and describe why they selected that placement as most valuable. Participants were given time to complete and return the pencil and paper survey before the seminar commenced.

Data Analysis

Quantitative data in the form of major, number of semesters of field experience, and the Teacher's Sense of Efficacy Scale (SES) were analyzed using simple descriptive statistics. Correlations were taken to determine whether a relationship existed between major and either the SES responses or number of semesters of field placement, which could impact perceptions of value regarding those placements.

Qualitative data were analyzed through inductive procedures (Patton, 1990). First, the author searched for "recurring regularities" in the raw data. This method ensured that initial codes encompassed all of the individual responses while avoiding overlap with other categories. Next, similar codes were combined and solidified into categories to ensure distinctiveness. Each

response was placed into a single category of closest match to avoid duplication. The categories were elaborated upon through checking details in original responses to create themes. The coding process is outlined in Table 1. Twenty responses (14%) could not be coded, primarily because participants simply identified the name of a school or course without providing a reason why they perceived the placement to be most valuable.

Table 1

Qualitative Data Coding Process

Raw Data	Code	Category	Theme
(EMS) because my host teacher was really helpful with advice and made me feel welcome	Host teacher personality	Host teacher	Host teacher characteristics
(HHS) my teacher was amazing and the diversity/rigor of the school was great	Host teacher	Host teacher	
at (NM) in block 2. I had a fantastic host teacher who taught me a lot	Host teacher	Host teacher	
(C). the host teachers were very supportive and willing to work with the (university) students every step of the way	Host teacher support	Host teacher	
75 hour block field placement most time in a classroom	Quantity of experience	Quantity	Quantity of experience
my first 4 week placement at HHS was the most beneficial because I had the time to really get to know my host teacher and students	Quantity of experience	Quantity	
(LWF) I spent the entire school day during field. I had a chance to do and see more	Quantity of experience	Quantity	
(LEHS) I am in field all day twice a week and have had a lot of experience in my teaching career	Quantity of experience	Quantity	
at (HJH) my host teacher allowed us to be very hands-on and we interacted with the students. At some of my placements I have only sat in the back and observed	Hands on	Practicality	Practicality of experience
my most valuable field placement was my block 1 placement in the preschool because I got to work with kids and teach the most in that placement	Hands on	Practicality	
the most recent placement at (E) because I got one on one experience with teachers and a more realistic workplace setting	Practical experience	Practicality	
when I was able to teach my own lessons because I was able to practice what I was learning (BE)	Practical experience	Practicality	
my field placement during block 2 because I want to teach in a rural setting & my teacher was the most professional of any of my experiences. I was able to be active in the classroom	Desired setting	Desirability	Desirability of placement
my most valuable field was in block 3 because I am in kindergarten and that is what I want to teach	Desired grade	Desirability	
(E) - it is a school like where I want to teach so it was nice to get my foot in the door	Desired setting	Desirability	
the one semester I was in a special education classroom b/c I got to talk to a teacher about her experiences in my future field and gain experiences that actually related to my future career	Desired subject	Desirability	
block 1	Uncodable		
(SME)	Uncodable		
most valuable was my placement at (WH) in the spring of 2017	Uncodable		
(Course #) (HHS)	Uncodable		

Results

Neither results on the SES nor the number of reported semesters of field experience was related to major (all correlations less than 0.1). Therefore, qualitative data on perceived valuable of placement was presumed to be unrelated to these factors. However, qualitative data did show differences among the majors in terms of factors perceived to be of most value in field placement. Table 2 summarizes results of qualitative data analysis.

Table 2
Aspects of Field Experience Valued by Major

	Overall	Host teacher	Quantity	Practicality	Desirability
Elementary education	51 (37%)	22 (61%)	0	8 (29%)	14 (37%)
Secondary education	60 (43%)	13 (36%)	9 (82%)	16 (57%)	7 (18%)
Special education	20 (14%)	1 (3%)	2 (18%)	2 (7%)	13 (34%)
Art and music education	8 (6%)	0	0	2 (7%)	4 (11%)

With respect to candidates in elementary education, a disproportionate percentage reported valuing the host teacher. Sixty-one percent of participants who indicated this response were elementary education majors, when they only represented 37% of the sample. Reasons provided for the host teacher being responsive for the candidates' "most valuable placement" included that they were helpful, supportive, and provided quality experiences. Other responses mentioned that the host teacher was experienced and/or a good role model.

The second theme, quantity of experience, was identified disproportionately by secondary candidates. Eighty-two percent of responses in this category were from secondary education majors, when they comprised 43% of the sample. No elementary candidates identified quantity

of experience and only two other responses (both special education majors) were categorized in this manner.

The third theme, practicality, was also identified primarily by secondary education majors. More than half (57%) of responses that fell into this theme were secondary education majors. These students mentioned the amount of time spent in the placement over other aspects of the placement when describing why they were most valuable.

The final theme was desirability of the placement, with respect to subject area (i.e. match between placement and student's major), type of school (e.g. rural/urban), or grade level. This theme was indicated disproportionately in responses from special education majors (34% versus 14% of the sample), and art and music education majors (11% of responses versus only six percent of the sample).

Discussion and Implications

The results of this study indicate remarkable variability among the various teaching majors in terms of what elements of field experience are most valued. These results are important in light of recent large-scale research studies tying various qualities of field experiences to later teacher quality. Important findings include desires of teacher candidates regarding their own placement. Implications of the current study are discussed in light of these new findings.

Overall, elementary education candidates appeared to place primary emphasis on qualities of the host teacher in field placement. Secondary candidates placed value on the quantity of the experience, followed by practicality. Special education candidates appeared to value desirability of placement. Finally, art and music education majors, while not well represented in this study, emphasized desirability of placement followed by practicality.

All of these themes are represented in the professional literature on field experience. First, cooperating teachers are critical players in field experience (Zeichner, 2002). Support from cooperating teachers in student teaching is critical to avoiding later burnout, and even characteristics of burnout that occur during the student teaching experience itself (Fives, Hamman, & Olivarez, 2007). Cooperating teachers must be good mentors, and perceptions of teacher candidates regarding quality of cooperating teacher is important to the outcome of the experience, including support and time given for reflection (Cherian, 2007). Elementary education candidates in particular may value their host teacher because of the collaborative, social nature of teaching in an elementary versus secondary setting.

Second, quantity of field experience is emphasized in the professional literature in addition to quality (e.g. NCATE, 2010). Teacher preparation programs are urged to design coursework around fieldwork instead of the other way around, which is the traditional or common way of delivering teacher preparation in undergraduate programs. This element of field experiences may be perceived as more desirable to secondary candidates because of the common, heavy emphasis on content courses over courses in pedagogy and event practica in the content areas.

Third, practicality or "hands on" experiences were valued most highly overall (43% of responses), but disproportionately on the part of secondary education majors. Certainly, the entire emphasis on applicability and practicality has close ties with decades of research on teacher preparation, as discussed above, but the link with major is particularly interesting. This finding may also be due to the disproportionate emphasis on content courses in secondary education, which may then result in fewer opportunities to apply what has been learned in the college classroom, in practical secondary education settings.

Finally, the emphasis on "desirability" characteristics on the part of special education, art education, and music education majors is also important. These three majors are not as well represented in schools in terms of number of potential placements (i.e. there may be only one, or just a few special education, art, and music teachers per school). It is possible that this rarity has led to teacher candidates being assigned to less than ideal placements that are not a good fit with either subject area or desired location or population.

Although teacher preparation programs are required to provide candidates with diverse experiences, such as exposing them to both rural and urban settings, a newer body of research has emphasized the importance of a close match between student teacher placement and later workplace characteristics, in terms of student demographics and setting (e.g. Kreig, Goldhaber, & Theobald, 2016). It is possible that teacher candidates in rarer teaching areas such as special education, art and music education, are less likely than others to receive placements that are a good match.

The results of this exploratory study hold implications for teacher preparation programs within to better meet the needs of their teacher candidates through quality field experiences, particularly in light of new research showing the importance of teacher candidate preferences in field placement. First, all programs should consult the professional literature for both desirable qualities in cooperating teachers and the role(s) that effective cooperating teachers fulfill during field experiences, in an effort to make better selections and for a more informed understanding of practical mentoring in teacher preparation. Second, secondary education programs should examine the balance between course and fieldwork and determine how to provide relevant, in-depth, practical experiences for their candidates. Finally, less common teaching areas such as special education, art education, and music education should consider desirability of placement,

asking to what extent candidates' experiences align with their major and desired type of school for their first teaching assignment. It is possible that programs may need to work harder to ensure goodness of fit for their majors.

Limitations and Conclusion

Results of this study were limited by sample size, the confines of the population to a single university, and primary reliance on measures of perception rather than aptitude or performance. Further study should continue to examine needs and perceptions across major with respect to field experience, with the goal of refining and enhancing experiences for goodness of fit with candidate needs and desires.

In conclusion, teacher candidate participants in this study pointed to several important themes of value when considering field placement. Responses differed by major, and included qualities of host teachers, quantity of field experiences, practicality, and desirability. Each theme is supported by research in field experiences. Newer research has pointed to the importance of attending to teacher candidate views and desires in making field placements. This exploratory study can be seen as a first step in documenting these desires.

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Shrinking an already decreasing pool: Potential implications of edTPA implementation

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Abstract:

The purpose of this case study policy analysis was to explore what the hiring implications may be for school districts in one state if edTPA, a national preservice teacher performance assessment, were fully implemented at the state level as a licensure requirement. This study examined hiring challenges and perceptions regarding this potential policy. edTPA may be beneficial to the state by measuring the pedagogical knowledge of teacher candidates, but it could ultimately harm the state by shrinking an already small pool of potential teachers, especially in rural districts.

Introduction

America is in the middle of a crisis: there are not enough qualified teachers to fill all the classrooms around the country. The Federal Government defines *Teacher shortage* as, "an area of specific grade, subject matter, or discipline classification, or a geographic area in which the Secretary determines that there is an inadequate supply of elementary or secondary school teachers" (Deferment of Student Loans, 1992). In a 2017 report compiled by the United States Department of Education, every state in the country except for Oklahoma reported a shortage of qualified special education teachers; there was a science teacher shortage in all but four states; and there was a math teacher shortage in all but five states (U.S. Department of Education, 2017). Washington D.C., Georgia, Ohio, and West Virginia reported a teacher shortage in every single content area.

There has been a decline in the number of candidates completing licensure programs, however the use of edTPA, a new teacher performance assessment, has been on the rise. edTPA is "a subject-specific performance assessment for beginning teachers that includes versions for 27 different teaching fields.

It focuses on three core areas of effective teaching: planning, instruction and assessment" (Nayfeld, Pecheone, Whittaker, Shear, & Klesch, 2015, pg. 4). An administrative report compiled by the Stanford Center for Assessment, Learning & Equity (SCALE), the American Association of Colleges for Teacher Education (AACTE), and the Evaluation Systems group of Pearson showed that, from 2011 to 2016, 40 states began some level of implementation of edTPA (SCALE, 2015).. Of these, 20 states have at least one institution of higher education (IHE) using it as a program completion requirement; two states are taking steps toward full implementation; and 18 states now require passage of a performance assessment to gain a teaching license. These 18 states all accept edTPA, and five of them require edTPA as the exclusive performance assessment (SCALE, 2015). The state of in this study currently does not require passing a pedagogical performance assessment for candidates to obtain a teaching license; they require a content knowledge objective assessment.

The purpose of this policy analysis case study was to explore what the hiring implications may be for school districts in one state if edTPA was fully implemented at the state level. Other states around the country have implemented this new licensure policy to determine if teacher candidates have appropriate pedagogical knowledge to warrant a teaching license. If edTPA was to become a state licensure policy, it could have far-reaching hiring implications. This study explored what those effects may be by answering these research questions: 1) What are the hiring challenges of the state's school district superintendents in urban, suburban, and rural districts? 2) What are the superintendents' perceptions of the impact on hiring highly qualified teachers due to full implementation of edTPA? This study described the current state of hiring teachers in the state's school districts, and what implications may exist if the state were to

require teacher candidates to pass edTPA, a national teacher performance assessment, as one component of getting a certified teaching license?

The research questions were addressed by drawing on qualitative case study data from school districts in one state. This study focused on the teacher shortage in this state, and what help and/or harm edTPA could do to the pool of teacher candidates there. This investigation examined survey and interview data from district superintendents to describe their hiring challenges, and their perceptions regarding this potential policy and what impact they see it having on their district and the state as a whole.

Review of the Literature

Teacher Performance Assessment

Assessing teachers' ability to teach through a performance assessment is not a new phenomenon. As far back as 1978, beginning teachers in Georgia were being certified based on their rating on the Teacher Performance Assessment Instruments (TPAI) (Capie, 1978, 1979; Georgia State Department of Education, 1979; Johnson, 1978).

It has become vital for teacher education programs (TEP) to ensure they are creating high quality, effective teachers, as legislation will tie a teacher's performance back to the TEP as an indicator of the TEP's effectiveness. In December of 2014, the U.S. Department of Education proposed rules that would require states to collect data and evaluate TEPs based on indicators of their completers' effectiveness (Department of Education, 2014). In 43 states, bills have been passed that would correlate student growth data with TEP completers to develop information about the effectiveness of individual TEPs (Doherty & Jacobs, 2015). The Council for Accreditation of Educator Preparation (CAEP) has also added an accreditation standard that TEPs must meet that requires them to collect and analyze data on their completers' impact on

their students' learning (Council for the Accreditation of Educator Preparation, 2013). All of these combined have led TEPs to ensure that they have the strongest candidates completing their programs, and teacher performance assessments are one valid and reliable way to measure whether or not they are ready to have their own classrooms (Nayfeld et al., 2015; Price, 2014; Sato, 2015; Stanford Center for Assessment Learning & Equity, 2015).

Being a teacher means being part of the bigger profession of education. According to Darling-Hammond & Hyler (2013), professions have three main things in common: they are committed to the populations they serve, they share common knowledge and skills that they use to ensure client satisfaction, and they enforce standards of professional practice. Law, engineering, architecture, accounting, and nursing are occupations that fit this definition of profession. These professions all require certification and licensing exams, just as education does. Educator licensing exams allow teachers to show that they have the content knowledge and skill necessary to teach; performance assessments are one way for educators to show that they have mastered the skills necessary for success in the classroom (Crowe, 2010; Darling-Hammond, 2010). Most current educator licensing exams are multiple-choice, and as such may not validly assess a candidates' readiness to teach effectively (Darling-Hammond, 2010). Many states require as many as three different multiple-choice tests—basic skills, content knowledge, and pedagogical knowledge—but none of those allow potential educators to show that they have the ability to thrive in a classroom the way a performance assessment does (Darling-Hammond, 2010).

edTPA.

edTPA is a national performance assessment that is research-based and created by educators. Candidates complete three main tasks: they plan a learning segment, complete

materials and commentary justifying why they have planned their learning segment the way they did; they teach the segment while videotaping their instruction, and then analyze their teaching afterwards; then they examine student assessment results from within the segment and provide feedback to their students. They also reflect on what went well and what they would do differently. Throughout the entire assessment, it is clear that student-centered learning is the expectation, which is a pedagogical shift away from the teacher-centered classrooms of decades past (Adkins, Spesia, & Snakenborg, 2015; Robinson, 2014; Sato, 2015; Stanford Center for Assessment Learning & Equity, 2015). At its core, it was designed to examine a teacher candidate's ability to complete full cycle of teaching.

A cursory search through the literature highlights how divisive this assessment is. Proponents of edTPA believe that it is more than just an assessment, but that it focuses TEPs on ensuring their candidates go through a program that integrates content knowledge with differentiation to support student learning needs (Adkins et al., 2015). There is also a belief that it "could launch new ways of defining and measuring teaching practices in ways that professions like medicine and nursing have used for decades" (Sawchuk, 2013, p. 1), which could help boost the professional image of teachers. Advocates of edTPA believe the scoring mechanisms in place help support the fact that it is being scored by appropriate, well-trained people. Scorers are either teachers or teacher educators that have gone through extensive training and have high inter-rater reliability at the end of training. The P-12 teachers are often those that are National Board Certified, thus proponents of edTPA believe they are the most highly qualified to score the portfolios. Additionally, the literature showed that edTPA had been found to be both a valid and reliable measure of pedagogical knowledge (Nayfeld et al., 2015; Price, 2014; Sato, 2015; Stanford Center for Assessment Learning & Equity, 2015).

Critics of edTPA offer a few counter arguments. Some believe that it is actually not a valid and reliable assessment, and therefore should not be used in such a high stakes manner as deciding to grant a teaching license or not (Dover, Schultz, Smith, & Duggan, 2015). Another grave concern lies in the perception of corporatization of teacher licensing, and the lack of transparency that has come alongside this. Some are fearful that by giving a corporation such as Pearson the power to create an assessment that is used as a gatekeeper into teaching, it gives the company influence over the entire profession (Darling-Hammond & Hyler, 2013b; Greenblatt & O'Hara, 2015; Hildebrandt & Swanson, 2014). Another reason some oppose using edTPA is that it is cost-prohibitive. At $300 per submission, the cost can add up for those that have to submit their portfolios more than once (Greenblatt & O'Hara, 2015; Parkes & Powell, 2015; Sato, 2015). Ultimately, opponents see it as just another roadblock to a profession that is already struggling, and one that has TEPs fearful it will contribute to the teacher shortage issue (Hildebrandt & Swanson, 2014).

Teacher Shortage

Previous research has demonstrated that certain content areas and certain school settings such as urban, rural, and low socioeconomic area schools face the most challenges when filling their classrooms with qualified teachers due to their less than desirable locations, student bodies, and school characteristics (Hampden-Thompson, Herring, & Kienzl, 2008; Hanushek, Kain, & Rivkin, 2004; Ingersoll, 2002, 2003). Teacher job satisfaction with regards to administrative support, salary, and school and class size also play a role in both recruiting and retaining teachers (Ingersoll, Merrill, & May, 2012; Ingersoll & Smith, 2003).

The perception of whether or not there is a teacher shortage boils down to where in the country one is located. Some states, such as Nevada and New Mexico, are experiencing severe

shortages (Rebora, 2016). By the end of December 2015, Nevada's Clark County School District still had 700 teaching vacancies for the current year. They were using unlicensed substitutes to fill the gaps. Around the country, math, science, and special education have historically seen hiring challenges (Emery & Vandenberg, 2010), but now states such as Kansas and California are among those that have a higher number of unfilled vacancies than ever before (Newton, 2015; United States Department of Education Office of Post Secondary Education, 2015). The state used for this study is just one of many states that have seen a decline in the number of candidates completing educator preparation programs as well; from 2010-2015 there were 22.7% fewer completers (Student Success and Academic Affairs Division, 2016).

However, when data is examined on a national level, the teacher shortage numbers tell a different story. The National Center for Education Statistics released a study in December 2015 that showed nationally, the number of vacant teacher positions actually dropped from 1999-2011, including for math, science, and special education (Malkus, Hoyer, & Sparks, 2015). Rather, there is a substantial shortage in rural and urban areas not due to a lack of supply, but rather due to a revolving door of teachers not staying for more than a year or two (Darling-Hammond, 2001; Ingersoll, 2003). The inability to retain teachers in rural, low-performing, and urban districts continue to exacerbate the teacher shortage issue (Hanushek et al., 2004).

States around the country are attempting to be innovative and recruit and retain high-quality candidates. The Learning Policy Institute identified 40 states that have implemented policies to recruit and retain a strong teaching workforce (Espinoza, Saunders, Kini, & Darling-Hammond, 2018). One strategy currently being employed is creating high school teacher pathways, grow-your-own programs, and residencies where districts can partner with teacher preparation programs to recruit and prepare students from local communities to become teachers (Kaka,

Mitchell, & Clayton, 2018). Teacher loan forgiveness for those that teach in rural areas has also been implemented in Colorado (Colorado SB 18-147, 2018). States such as Arizona and Utah have loosened teacher licensure policies, making it easier for those that did not go through a teacher preparation program to get a teaching license. Indiana passed legislation to implement the Next Generation Hoosier Educators Scholarship, which will provide scholarships to high achieving high school students in an attempt to recruit them in to the teaching profession (Indiana Commission for Higher Education, 2019).

Methods

Research Design

Using an embedded, single-study case study methodology (Miles, Huberman, & Saldaña, 2014), this study explored the hiring challenges one state's school districts were already having, and their superintendents' perceptions of the potential implications a full implementation of edTPA as a licensure requirement may have on their hiring practices. This methodology was fitting because case studies are appropriate when answering descriptive questions such as the ones in this study (Yin, 2012). Surveys were employed to gather these perceptions. Follow-up interviews were then completed with a sample of participants indicating they would be available for additional interviews. The assumptions made throughout the study were driven by a postpositivist paradigm. Concurrently, three years of candidates' edTPA scores were analyzed for pass and failure rates to triangulate the case study findings.

Participants

The sample for this study was drawn from superintendents in the state's 178 school districts. A purposeful sample was chosen that contained all superintendents. They were sent an email that invited them to be part of the study. If the superintendent was not the best person to

answer questions about hiring, then it was requested they pass the email and survey along to the correct human resources personnel. All participants were contacted to participate in the 15-minute survey via email through Taskstream. Participants voluntarily responded by completing the survey. All survey responses were deidentified upon compiling the report.

Twenty-two people responded to the survey. Twelve of them were superintendents and ten of them were human resources administrators that the survey was passed to. Forty six percent of respondents have been in educational leadership roles for six to ten years, 27% for more than 20 years, 18% for 11 to 15 years, 4.5% for less than five years, and 4.5% for 16 to 20 years. With regards to urbanicity, 59% were from rural districts, 23% were from suburban districts, and 18% were from urban districts.

The interview participants were chosen from the pool of original survey respondents. Twelve survey respondents indicated they would participate in follow-up conversations as needed. All twelve were emailed, and eight responded and agreed to be interviewed. Phone interviews were conducted with seven respondents to address the research questions further. Of these seven participants, four were school district superintendents, and three were human resources administrators.

The edTPA participant sample was drawn from one university. The university has administered edTPA for three years; the scores of 173 candidates were reported to the educator preparation program from May 2015 to May 2017. Twenty two percent of the candidates were male and 78% were female. Candidates represented six different content licensure areas: 9.8% were secondary English candidates, 5.8% were secondary mathematics candidates, 16.2% were secondary science candidates, 15.6% were secondary history/social sciences candidates, 3.5% were world language candidates, and 49.1% were elementary candidates. The candidates were

prepared in one of the three licensure programs: 69.4% were prepared in a traditional program that prepares teachers in elementary education, secondary social studies, English, or world languages; 19.1% were prepared in a UTeach-modeled program that prepares teachers in secondary mathematics or secondary science; and 11% were prepared in an alternative preparation program that prepares teachers in secondary English, social studies, mathematics, science, or world language.

Data Collection

The survey was sent to all of the state's school district superintendents after IRB approval. The survey contained both open and closed-ended response questions. Participants had the option to skip any question they did not want to answer. The rationale for doing an initial survey instead of interviews or a focus group was purely due to time constraints, logistics, and cost concerns. It was not possible to travel all over the state to interview people in person. Online surveys have many benefits, including the fact that the participants could complete the survey on their own time without being boxed into a specific time, and they could take as much or as little time as they need to submit it (Fink, 2006). This method also provided assured anonymity and confidentiality if they chose not to provide follow-up contact information. Online surveys do have some weaknesses, however. A potential for a low response rate and an inability to dig deeper into a response were potentially problematic (Fink, 2006). It was important to complete interviews to make up for some of those weaknesses.

In addition, the online survey offered the surveyor a chance to elaborate about what edTPA is in case the participants were not familiar enough with this assessment. This method allowed them the flexibility to read the description provided in the survey, but also take a break from the survey to go and read more about edTPA if they needed to. The answers to some of the

questions that were asked might not have been readily available in an interview setting, such as numbers of unfilled positions or types of teacher candidates. The online survey gave them the opportunity to look up that information and then continue with the survey.

The 2014 edTPA Administrative Report also provides evidence that edTPA has been found to be an authentic, subject-specific, performance-based support and assessment system of a preservice teacher's initial readiness to teach through a number of different validity analyses (Nayfeld et al., 2015). Content validity, construct validity, consequential validity, concurrent validity, and predictive validity analysis were all conducted, and all were found to. In addition, confirmatory factor analysis was done using 18,436 edTPA submissions, and both 1-factor and 3-factor models were run. For the 3-factor model, all factor loadings were positive and statistically significant, and loaded as expected on each of the three tasks. "The large magnitude of the correlations further supports the interpretation that edTPA rubrics measure three highly interrelated sub-dimensions – planning, instruction, and assessment – of a single readiness to teach construct" (Nayfeld et al., 2015, p. 25).

Data Analysis

Survey and interview data were analyzed as described by Miles, Huberman, & Saldaña (2014) by working through two cycles of coding. Codes are labels that assign meaning to the descriptive information collected in survey responses and interview transcripts (Miles et al., 2014). First cycle coding was conducted to assign the data to chunks, while second cycle coding was conducted to find themes and patterns within the first cycle codes. A within case analysis was utilized, using the state as the case for this study. Within case analysis focuses on explaining what perceptions are in a single, bounded context (Miles et al., 2014). Initial deductive coding was completed before any analysis occurred; some codes were created before the results were

analyzed based on the research questions. Inductive coding was also completed as other codes emerged through the collection and analysis of the data (Miles et al., 2014). The descriptive statistics of closed-ended questions were also analyzed and informed the codes as well. A phenomenological, grounded theory process was used to describe the written responses (Glaser & Strauss, 1967; Lincoln & Guba, 1985).

Open-ended responses were reviewed, and repeated words and patterns that initially stood out were noted. This process was done to ensure that follow up interviews were purposeful. Basic interview questions were then developed to guide follow-up interviews. Once that was completed, semi-structured follow-up interviews were conducted with seven of the original participants to triangulate and validate the survey findings. Phone interviews were conducted and then transcribed. All data were reviewed—both open and closed-ended survey results, as well as interview transcripts—and then the data analysis process began.

In order to validate the study and build trustworthiness and credibility, a triangulation technique (Creswell, 2013) was done by surveying 22 participants and then interviewing an additional seven. Member checking (Creswell, 2013) was also employed by soliciting participants' views of research findings and interpretations, as well as a state policymaker and policy advocates throughout the data analysis process to ensure the accuracy of the findings.

Candidates' edTPA results from 2014-2017 were examined to determine their total score and the institution's three-year pass rate. Since this policy is not in place yet, the state does not have passing requirements, such as a passing score. The passing score requirements of the 12 states that have fully implemented edTPA for candidates to obtain their license were compiled; a passing score of 37 was the average of these 18 states (Scale, 2017), so a score of 37 out of 75 was determined to be an appropriate passing score for this study. A failure rate was calculated

based on this score to determine how many candidates would not obtain a teaching license, and in which area, as a result of failing edTPA. Program failure rates were also examined to determine which of the three licensure programs was least successful in preparing candidates to pass edTPA.

Limitations

As with all studies, limitations existed in this one. First and foremost was the low response rate. The survey was sent to 178 superintendents in the state, and only 22 of them completed the survey. However, the sample did span the state's different regions and had a large variety of administrative experience. There are also limitations associated with the use of edTPA. edTPA is not 'high stakes' in the western state where the study was conducted; candidates do not have to pass it in order to obtain their teaching license. There is a concern that the candidates might not necessarily try as hard or put as much effort in to completing edTPA as candidates in a state where the assessment is required for licensure. However, the teacher preparation programs did use the assessment as a program requirement for licensure.

An additional limitation is highlighted in an article by Greenblatt & O'Hara (2015). Their belief is that the edTPA privileges certain student teaching placements. They argue that low-income schools tend to utilize scripted curricla more often than higher socioeconomic schools, and also have more students with special needs. Due to the fact that the teacher preparation programs intentionally placed candidates in diverse, low-income settings, this may adversely affect their performance on edTPA.

Findings

edTPA Score Findings

Candidates could score up to 75 points on edTPA using the 15 rubrics. edTPA score analysis revealed that, of the 173 candidates that took the edTPA, the mean score was 41.3, the median was 43, and the mode was 45. The minimum score was a zero, and the maximum score was 61. Figure 1 shows the range and distribution of all 173 scores.

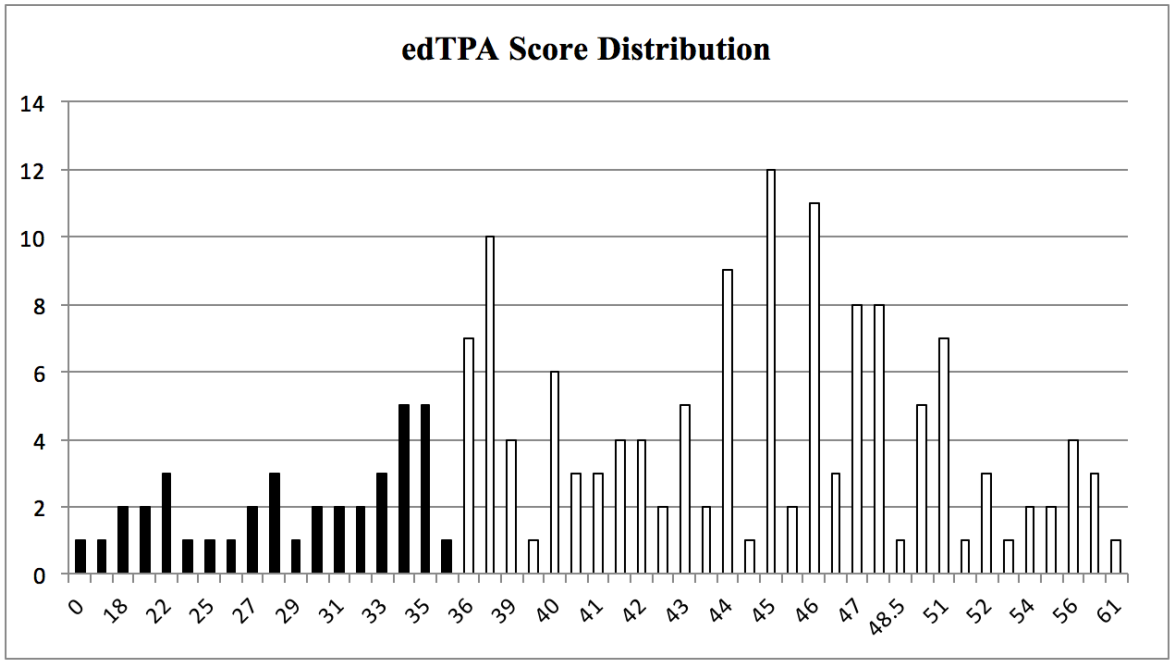

Figure 1. edTPA scores for each of the 173 candidates.

When using a score of 37 as a passing score, 74% of candidates would have passed the edTPA and received a teaching license in this state. As seen in Table 1, 45 out of 173, or 26% of, candidates would have failed the assessment. With respect to the content area, 9% of failures were secondary English candidates, 7% were secondary mathematics candidates, 24% were secondary science candidates, 13% were secondary history/social studies candidates, 9% were world language candidates, and 38% were elementary candidates. When examining failure rates by program, 62% of the failures were in the traditional licensure program, 27% were in the

UTeach modeled program, and 11% were in the alternative licensure program. However, when examining the number of failures per program on the aggregate, 23% of failures were in the traditional licensure program, 36% were in the UTeach modeled program, and 25% were in the alternative licensure program.

Table 1. edTPA Failure Rates

	N=45	Percentage of failures	
Content area			
Secondary English	4	9%	
Secondary mathematics	3	7%	
Secondary science	11	24%	
Secondary history/social studies	6	13%	
World languages	4	9%	
Elementary	17	38%	
Licensure program			Percentage of failures per program in whole sample *N*=173
Traditional	28	62%	23%
UTeach	12	27%	36%
Alternative	5	11%	25%

Survey Findings

Survey findings from the 22 participants uncovered a variety of perspectives on hiring challenges and the implementation of edTPA. As seen in Table 2, the majority of districts (46%) needed 0-10 licensed teachers for the 2016-2017 school year. However, 36% of districts had a need for more than 41 teachers. Of the positions that were posted, 45.5% were filled by highly qualified teachers. In this state, *highly qualified* teachers are those with at least a Bachelor's degree, a teaching license, and have demonstrated subject matter competency in the area they are teaching. However, 54.5% of districts were not able to fill all of their teaching positions with highly qualified teachers. In fact, 36% of districts had positions that went unfilled. 59% of districts hired candidates from an alternative licensing program. In one district, 16-20 of their positions were filled by alternative candidates. Eighty-six percent of the respondents staed that finding highly qualified teachers over the past five years has changed.

Table 2. Closed-ended survey question results

	Answer	***N***	**Percentage**
How many licensed teaching positions did your district post and advertise about for the 2016-2017 school year?	0-10	10	46%
	11-20	2	9%
	21-30	1	4.5%
	31-40	1	4.5%
	41+	8	36%
Of those that you posted, how many did you fill with teachers that were highly qualified?	100%	10	45.5%
	75-99%	10	45.5%
	50-74%	1	4.5%

	25-49%	0	
	Less than 25%	1	4.5%
Did you have any licensed teaching positions in 2016-2017 that went unfilled?	Yes	8	36%
	No	14	64%
Did you hire candidates from an alternative licensure program for the 2016-2017 year?	Yes	13	59%
	No	9	41%
If yes, how many?	0-5	13	87%
	6-10	1	6.5%
	11-15	0	
	16-20	1	6.5%
	More than 21	0	
Has the ability to find highly qualified teachers changed over the last 5 years?	Yes	19	86%
	No	3	14%
Do you see value in having a performance assessment related to pedagogical knowledge becoming part of a requirement to obtain a teaching license?	Yes	11	50%
	No	11	50%
Do you believe requiring a performance assessment for licensure such as edTPA may affect hiring in your district?	Yes	14	64%
	No	8	36%

When contemplating the implementation of a pedagogical performance assessment as a requirement for licensure, districts were split on this. Fifty percent believed that there could be value in doing this, while 50% did not. However, 64% of the respondents believe that an implementation of an assessment such as edTPA could potentially affect hiring in their districts.

Interview Findings

The survey findings were a great place to begin, but a need for follow-up interviews arose due to a desire to understand the challenges that these survey results then led to. It was important to take both the open and closed-ended survey results and analyze them alongside the interview transcripts. What emerged from that process were three main themes.

Theme 1: there is a teacher shortage in the state.

The most prevalent response that appeared over and over in both the survey results and the interviews was overwhelmingly that districts are truly experiencing teacher shortages. It does not necessarily look the same from district to district, or from urban to rural, but the majority of study participants reported their hiring practices were impacted by a lack of teachers. A human resources director in a suburban district said, "I know talking about the teacher shortage nationwide is kind of a trendy topic in different publications, and such, but it's real. It's real. And its [sic] been growing, and it's not going away." This sentiment was echoed throughout all seven interviews and much of the survey results.

One urban superintendent commented, "It appears the older children get, the greater the shortage." Other districts have found this to be the case as well. They have enough elementary candidates to fill the vacancies, but as you move up the grade ladder, there are fewer teachers available at the secondary level. High school is where districts are seeing the most shortages, especially in math, science, and special education.

Districts handled vacant positions in different ways. More than one participant revealed that they did not hire a highly qualified teacher in some classrooms. Instead, they filled the position with a long-term sub. A superintendent in a rural district came up with something a bit more creative to fill a vacant math position:

The high school adjusted the master schedule to offer advanced level math courses through telepresence courses and/or online math courses. One teacher, who is a language arts teacher, teaches a pre-algebra class using an online program. This is to support students who struggle with the algebra math content. That particular teacher was not highly qualified in math, but was willing to fill in and support the district's needs.

Over half of the districts represented in the study cited using alternative teacher licensure candidates to fill vacancies as well. In fact, more than one district said that they found someone in their community with an interest in teaching but no teaching license, so the district took on the responsibility of ensuring the alternative licensure process was met. The concern expressed with using alternative candidates was that alternative candidates tend to be lower quality than a candidate that went through a traditional licensure program and have less pedagogical knowledge.

In addition to supporting alternative candidates, districts are filling vacancies by recruiting out of state. Institutions in the state are just not producing the required number of teachers, so districts are being forced to look in high volume states such as Michigan for math and science teachers. One superintendent said that his district would be doing just that: "We know Michigan state is the place that they tend to have the most math teachers available, so we'll definitely be trying to hit Michigan state job fairs." One superintendent said that five years ago they would attend only eight job fairs, most in-state, and would end up with more than enough

candidates to fill their vacancies. Now, he said, “We’re doing over 20 fairs now, and at least half to two-thirds of those are out of state.” That still does not guarantee that they will find enough candidates to fill their positions. In fact, he did have to hire one alternative candidate for the 2016-2017 school year.

Theme 2: location matters.

There was a difference in hiring challenges in urban, suburban, and rural districts. For urban districts, the main problem that they have seen is retention. Teacher turnover has been an ongoing problem for those from urban districts. A superintendent in an urban district is concerned about the “revolving door” of the teaching profession. Essentially, teachers work for a year and then leave for a variety of reasons: low pay, disrespect from students, long hours, not adequately prepared to teach, etc. Another teacher gets hired in his/her place, and then leaves after only a year for the same reasons, and the cycle continues. Another urban superintendent believes that loan forgiveness for the top tier candidates or programs like Teach for America (TFA) are exacerbating the situation. He said:

In watching the ones that really do come from the top tier, we have a difficult time hanging on to them, because they will come in and stay a few years in the profession, give everything they’ve got, burn out, then leave. You know, I think it's one of the problems with TFA. They will spend a couple of years, and they're willing to give it, but then they say ‘I've kind of given my part for society, you know, my loans are forgiven, and if I'd wanted to live a life of poverty I probably would have thought about a convent.’

Urban superintendents have found that the teacher turnover rates in their districts are just as frustrating as the teacher shortage rates in other districts. The low teacher pay rates have created hardships when trying to recruit people to join the profession.

In the state's suburban districts, the biggest hiring challenge is finding teachers that can afford to live in the communities on their teaching salary. The cost of living has increased in suburban communities, and many teachers cannot afford to buy a house on their salary. A Human Resources Director in a suburban district commented that "living in a community with a high cost of living and average teachers' pay (yet below what a new teacher can afford) new teacher candidates have a difficult time 'making it here.'" As a result of the lack of affordability, suburban districts are seeing less new teachers move into their districts, and the ones that do might not be of the quality they would like.

For rural districts, the issue has been recruiting teachers to teach in those districts. One rural superintendent commented that "even when we had a surplus of qualified teachers, the bulk of those candidates bunch up [in the cities] and rarely venture into the rural regions of our state where the need is the greatest." Another said that his biggest challenge is "finding people that want to come to our area." More often than not, though, once they get there, superintendents have found that they tend to stay. When asked why people stay in her district, a rural superintendent said that it was due to their support system: "Well, we welcome them into our family, and we have a positive school culture. We try to get them each a mentor. You know, work with them that first year." She also said the key to recruiting rural teachers is to recruit their own: "The majority of our new teachers grew up in rural districts. And that's a good thing, because they know about rural life." Teachers that are from rural areas originally that have established roots in the community, understand life in a rural community, or tend to be the ones that are attracted to life in rural areas; they are the ones that ultimately stay.

Finding highly qualified teachers is an additional layer of this challenge. Another rural superintendent that also happens to be the district's human resources director is concerned about

quality: “My work has been in small, rural districts of [the state] where finding qualified teachers is becoming increasingly difficult. I know of at least 15 school districts that had to hire alternative licensed science teachers this past year alone.” Allowing recruits to see the charm of small-town rural life can be a challenge, though: “A lot of [rural] towns, either don't have a stoplight in them or they'll have one stoplight. And so, on a Friday night, there's not much to do if you're not going to the high school basketball games or football games.” More than one superintendent commented that educator preparation programs needed to offer rural field experiences to their teacher candidates to expose them to these possible employment opportunities.

Theme 3: importance of assessed teacher knowledge.

The last major theme that emerged centered on the types of knowledge that teachers need to be effective in the classroom. All of them saw value in having a content knowledge assessment, such as Educational Testing Service’s (ETS) Praxis II content exams. However, there were conflicting views on the value of assessing pedagogical knowledge as a requirement for a teaching license. As the survey results showed in Table 2, 50% of superintendents believed there would be value in having a performance assessment as part of licensure requirement. Those that see value in incorporating a performance assessment believed that it would ultimately elevate the quality of teachers in the state. One superintendent said that assessing pedagogical knowledge would “allow the state to weed out those who are not best qualified to be a teacher based on performance.” Another superintendent commented she thought a performance assessment would benefit her district when sussing out more qualified teachers because it would show that potential hires would “be better prepared to meet the diverse learning needs of students and to deal with classroom management issues.” A human resources director agreed, and said

that "it would be nice to see that teachers are ready to teach," and that their district "would consider these candidates [that passed a pedagogical performance assessment] more than others." A different participant's perspective on why one district would value this assessment is that "it would allow schools to show accountability for hiring quality teachers." Another perspective is that having a performance assessment would allow districts to be sure that candidates have a basic set of skills required to teach. She said that their district has:

> Implemented more and more 'basic' teaching instruction, specifically classroom management and instructional delivery, as part of [their] new teacher orientation to compensate for what candidates are not receiving in their respective college teacher preparation programs. This takes away from other areas in which we could spend that crucial time instead at the outset of their careers.

She believed that a performance assessment would buy them back some of the time they lose in training their new teachers how to teach.

In the opposite camp, districts are concerned about what a required pedagogical performance assessment would do to their already diminishing pool of qualified candidates, and as a result, they do not see a tremendous value in implementing this. "We already make it difficult for candidates to become licensed. Any additional steps would increase the challenges," said one superintendent. Another commented that he is "sure it will decrease the applicant pool even more." A district human resources director agreed. He said, "I think there would be even fewer candidates available." One superintendent's response had nothing to do with a shrinking pool of candidates. Rather, he was concerned that some might see it as a deterrent to entering the profession. He believed that "it might be another barrier in a series of barriers to discourage potential teacher candidates." There is already a great deal of accountability for teachers, and the

profession continues to get beaten down; the concern that yet another roadblock would deter potential candidates is valid.

Discussion

Three themes emerged from analysis of the survey and interview data. The first theme identified is that there is a teacher shortage in the state, as the majority of study participants reported their hiring practices were impacted by a lack of teachers. The second theme identified is that school and district location matters when identifying shortages. There was a difference in hiring challenges in urban, suburban, and rural districts. For urban districts, the main problem that they have seen is retention. Teacher turnover has been an ongoing problem for those from urban districts. Rural districts' main hiring issue is finding teachers that want to be hired in those areas. The third theme identified was about the importance of assessed teacher knowledge. This theme centered on the types of knowledge that superintendents believed teachers need to be effective in the classroom.

The results from this investigation answered the initial research question: What are the hiring challenges of the state's school district superintendents in urban, suburban, and rural districts? The data suggest that there are significant hiring challenges in urban, suburban, and rural school districts, and while there are some differences in the challenges they have faced, the most significant challenge across the board is the ability to hire enough qualified teachers. This challenge is particularly true at the secondary level in math, science, and special education classrooms. At the elementary level, districts have found that they have enough candidates to fill the positions, but they are not as high quality as they would prefer. One potential reason for this is that since teacher preparation programs have seen a decline in enrollment over the past decade,

they may have been more lenient with initial admission standards and allow in those that might not be the strongest candidate in order to grow enrollment.

Research studies validate the conclusions drawn from the participants regarding the teacher shortage in the state. In the 2016-2017 school year, the state reported a shortage of qualified teachers in the following areas: Early Childhood Special Education, Foreign Languages (Kindergarten – Grade 12), Mathematics (Grades 7 -12), Natural Sciences (Kindergarten – Grade 12), and Special Education (United States Department of Education Office of Post Secondary Education, 2017). This need is mirrored by the number of teacher license completers from approved licensure programs in the state. In 2011, institutions of higher education (IHE) in the state prepared 3,274 teachers. In 2015, only 2,529 candidates completed licensure training in the state (Student Success and Academic Affairs Division, 2016). Enrollment in teacher preparation programs dropped by 6.1% from the 2013-2014 to 2014-2015 school years (Student Success and Academic Affairs Division, 2016).

Top education policymakers in the state analyzed these numbers and made bold statements regarding the state of hiring teachers. An academic policy officer for educator preparation at the state's Department of Higher Education was quoted in a state Senate Education Committee panel that "we've kind of gone over the cliff. … We are definitely in a crisis, make no mistake" (Engdahl, 2016b). It is especially problematic in rural areas. The southeastern region of the state has found that they have the largest challenge in both recruitment and retention. Low salaries and remote locations make it hard to find qualified teachers that want to teach in those districts (Engdahl, 2016a).

Based on the edTPA score analysis, 45 of 173 teacher candidates would not have received an initial teaching license if the implementation policy were in place. Of those, three

were mathematics candidates and eleven were science candidates—the highest need content areas in the state. Losing those additional teachers in a climate of shortage could have been the difference between a district hiring a fully-licensed, qualified teacher versus a long-term substitute with potentially less content and pedagogical knowledge.

The results for the second research question— What are the superintendents' perceptions of the impact on hiring highly qualified teachers due to full implementation of edTPA?—were a bit more muddled, as participants equally supported and opposed implementation of edTPA as a requirement for licensure. Those that were in favor of it cited that it would allow them to find high-quality candidates and know that they were hiring teachers with a strong pedagogical foundation. Those that opposed it cited an already diminishing pool of applicants, which tied in to research question one, and feared that adding an additional barrier to get people into the profession would potentially make it harder for candidates to obtain a teaching license. In addition, it might deter some from even entering the profession, thus leading to an additional decrease of TEP completers. State teacher standards do involve at least one measure of pedagogical knowledge, though, so there are some that believe edTPA is one way to assess those types of standards. Ultimately, edTPA is a standardized performance assessment that will hold teacher candidates accountable to pedagogical standards (Denton, 2013).

Implications and Future Research

One major implication of this study is that the state's school district superintendents would not necessarily support a new licensing requirement that would expect teacher candidates to pass a performance assessment. While superintendents may value the measure of pedagogical knowledge, their need for qualified teachers far outweighs their desired value.

It is also evident that the state is entering a crisis when it comes to the production of qualified teachers (Engdahl, 2016b). The real question then becomes, what can be done to reverse the crisis? One measure that state education policymakers have begun working towards is finding a way to get more teachers into rural districts. A new House Bill in the state's legislature will pay 40 teacher candidates to complete their student teaching in a rural district. The hope is that if teacher preparation programs can place student teachers in these high need districts and expose them to life in a rural area, they may find both a job and a home and not want to leave. This is being attempted in a few states right now, but it is too early to determine whether or not this has a positive impact on recruitment and retention of teachers in these areas.

Future research should be directed at why this crisis has occurred in the first place. Why has the teaching profession become so deprofessionalized that people no longer want to enter it? It is necessary to understand how we got to where we are right now to move forward and resolve the crisis. It is vital to determine what factors in the profession have led educators off the cliff, whether it is salary, accountability measures, societal attitudes and perceptions, or something different.

Future studies should also focus on those states with full edTPA implementation in place that measures the impact of edTPA implementation on the number of completers in those states to determine if edTPA is creating a barrier into the profession. Research also needs to be conducted on edTPA as a measure of educator effectiveness. In states where edTPA is tied to licensure, there needs to be correlation research done on a candidates' edTPA score and their student learning outcome data to determine whether or not edTPA is a valid and reliable measure of educator effectiveness.

Conclusion

Without solutions to the shortage issues, this state may be heading in the same direction as Nevada where alternative teacher licenses are being advertised in airports and taxis. It needs to be an all-hands-on-deck solution, though, as this crisis could have far-reaching implications throughout all areas of the state. Potential solutions include grow your own programs, teacher residency programs, increased mentoring for new teachers, additional funds for loan forgiveness, and funding for higher teacher salaries. While some form of many of these solutions are being implemented in some states, it is too early to determine their success.

Regardless of the solution, state legislators, school districts, and teacher preparation programs need to work together and continue to recruit candidates in to the profession, and them work together to retain them once they are in. Schools in shortage areas are already feeling the pinch. The lack of qualified teachers is sure to impact students, as there will no longer be any way to insulate them from this issue. Lack of specific educational opportunities, such as AP classes, negative impact on student academic achievement, and high student-teacher ratios are already common in areas where there are teacher shortages. If edTPA implementation is one more gatekeeper to the recruitment of people into the profession, state policymakers need to determine whether or not measuring the pedagogical knowledge of incoming teachers is as important as the negative impact the teacher shortage is having on students.

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White Racial Identity Development: Pre-Service Educators Build Envisionments of Their Racial Identities

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Abstract:

This phenomenological study, set in a predominantly white teacher preparation program, investigated whether preservice teachers (PSTs) developed their racial identity using multicultural picture books and an anti-racist framework during one semester's field experience. After teaching, participants reflected in journals and debriefed with co-investigators, who were also PSTs. Investigators employed Langer's envisionment building model to understand racial identity development. Data analysis indicated that the PSTs were able to move through envisionments as a result of the study procedures. Providing PSTs multiple opportunities to investigate their own racial identities facilitated developing increasingly complex racial identities.

Introduction

Faculty in teacher preparation programs often feel constrained by state and national policies to implement more content and pedagogy classes into the curriculum. These mandates can lead to feelings that faculty have little control over what they are to teach. However, faculty who are determined to prioritize moral imperatives will find a way. This study is situated within a program where faculty and staff have sought to understand themselves as racial beings, understand race impacts in schools, and embed these understandings into the curriculum so that their preservice teachers (PSTs) can also attain these understandings.

he co-investigators (CIs) in this research study attended a small liberal arts university in the Midwest. Three were enrolled in the teacher preparation program, and one in the sociology program at the same university. All are of the dominant culture. The principal investigator (PI), also of the dominant culture, taught in the teacher preparation program at the same university.

The PI and CIs experienced P-12 schools in predominantly white communities that provided limited contact with diverse populations. Although all shared a commitment to teach and work in anti-racist ways, this accomplishment is difficult for at least three reasons. First, as Sleeter (2008) proposes, most white people generally resist examining long-held racial beliefs. Equally important, the preservice teachers (PSTs) believed that their limited contact with people of color (DiAngelo, 2016) provided few opportunities to examine their own racial beliefs. Third, many whites are not comfortable talking about race (Tatum, 2003), especially in meaningful ways.

Rationale for the Study

Because the PI and CIs believe that teaching is identity work (Milner, 2013), the primary purpose of the study was to determine if the participants would come to understand themselves as racial beings as a result of the study's design, and to determine the ways in which they had grown in their racial identity development, if at all. As teacher educators strive to help their PSTs prepare to face the well-documented "demographic imperative" (Banks, et al, 2005; Cochran-Smith, 2005; Ladson-Billings, 1995; Nieto, 2005; Sleeter, 2001; Villegas & Davis, 2008), they use a variety of methods and materials to help themselves and their students develop cultural competence, and racial awareness. Understanding ourselves as racial beings, and understanding race impacts is complex and multifaceted. Accordingly, the theoretical orientation that began to take shape throughout data collection and analysis was the literacy comprehension theory, envisionment building model (Langer, 2011), in which readers construct increasingly complex understandings of texts.

Theoretical Framework: Langer's Envisionment Building Model

Traditionally, stage models of white racial identity development (WRID) such as Helms' model (1990) have been widely used to understand racial identity development. Looking at

WRID along a continuum of development in a linear, yet recursive manner, is helpful. However, while making sense of the data, we noted that some PSTs' understandings of themselves as racial beings grew richer and more complex. For this reason, envisionment building (Langer, 2011) proved a useful means to explain the phenomenon of white racial identity development.

Envisionments, according to Langer are "the world of understanding that we have at a particular time" about a particular thing, and are not exclusive to understanding plot development. What follows are five stances in Langer's envisionment building model with a description of how this model might be applied to white racial identity development (WRID). The initial stance in the envisionment building model (2011) is *being outside and stepping in.* As related to comprehension, readers make initial contacts with the genre, content, structure, and language of the text making use of prior knowledge and surface features to get sufficient information to begin to build an envisionment. Many white people initially do not understand ourselves as racial beings, nor do we understand the impact of race in our lives and in the greater society. Just as readers use their own experiences to step into a text world, white people use what is available to them in order to become aware of race.

In the *being inside and moving through* stance (Langer, 2011), readers become immersed in the text world. They use even superficial text knowledge combined with their personal knowledge, knowledge of the genre, and social context to furnish ideas that spark their thinking. Many white people are socialized not to regard race as an important societal force, and do not think about race impacts until opportunities present themselves. These opportunities include getting to know someone of another race, participating university coursework where race is part of the curriculum, or studying abroad.

The *stepping out and rethinking what you know* stance (Langer, 2011) is different from the other stances in which readers use past experiences to make sense of text-worlds. Readers do the reverse and develop understandings of text-worlds to add to their personal knowledge and experiences. When whites enter this stance of our racial identity development, we begin to process key events from the past in light of who we are as racial beings. For example, we understand that hard work would not provide the same rewards for all people, so the myth of meritocracy may be cast aside. There is a growing sense of emotional connection to others who are impacted differently by shared experiences (such as the implementation of a new tax law), and an increasing discontent with living unaware of racial "others."

In the *stepping out and objectifying the experience* stance (Langer, 2011), readers distance themselves from the text world, objectify their understandings, their reading experience, and the text itself. They judge the text, reflect on it, analyze it, and relate it to other texts and experiences. In racial identity development, white people operate from a new-found understanding of how race impacts people of different races unequally. We are now more aware that we have been socialized to be racist even if we do not hold overtly racist views.

The *leaving an envisionment and going beyond* (Langer, 2011) stance can only occur when readers have built sufficiently rich envisionments that provide knowledge or insight that can be used in new, and sometimes unrelated situations. This stance occurs in racial identity envisionments when we actively engage in societal reform. We have gained an awareness that not working for change in a racially oppressive society is equivalent to participation in racism. When people's racial identities are sufficiently well developed to enable them to understand themselves as racial beings, they are in a good position to better understand the societal impacts of race for people of the dominant culture, and people not of the dominant culture.

Framework that Guided the Lessons

PSTs were directed to read aloud multicultural literature to their students for their lessons. Literature that won awards from representative racial/cultural group were used in order to provide PSTs with literature that was authentic to each group, i.e., American Indian Youth Literature, Asian Pacific, Coretta Scott King, Middle East, National Jewish Book, and Pura Belpré awards. They asked questions developed through the application of Howard's (2016) work that promotes racial healing and anti-racism. The four types of questions (below) were developed by Garlough and Carrothers (2017), and were accessed by PSTs on a website that provided them with questions specific to each piece of literature they selected.

1. Honesty- Learning to acknowledge what is going on in the story (or event) must be viewed through multiple view points, and not only in ways that white people have been preconditioned to understand.
2. Empathy- Requires us to focus our attention on the perspective and worldview of others in reflexive role-taking where we imagine what it would be like to be someone in a given position. Empathy requires the end of non-engagement; it is through empathy that we engage with others.
3. Advocacy- Takes a variety of forms such as using multicultural literature in lessons giving underrepresented people the opportunity "to be heard," speaking on behalf of underrepresented people rather than denying that decisions impact people often not present during decision-making, and inviting underrepresented people into circles of power.
4. Action- Works to eradicate the dominance that exists and causes racial inequality.

Research Methods and Study Design

Drawing upon the shared belief of the PI and CIs that teaching is identity work, this study sought to bring to the forefront the perceptions of the PSTs as their racial identities were or were not developing as the phenomenon under investigation. Data collected in this study included

PSTs' lesson plans, notes from debriefing sessions, and PSTs' written reflections. These data sources were meant to provide PSTs' opportunities to talk about and teach about race in order to help PSTs examine racial beliefs of which they were unaware.

The CIs enrolled in a research methods class with the PI in order to learn methods of phenomenological research. The PI taught data collection and analysis techniques, as well as ways to reduce researcher bias, and to understand study limitations and implications. The CIs practiced coding data for themes prior to actual data analysis. Three of the CIs had worked with the PI in a less formal basis on research for two years prior to enrolling in this class.

Investigators sought to reduce the faculty-student dynamic for the participants in several ways. The CIs, rather than the PI, recruited participants through emails sent to all PSTs of sophomore or higher rank. All data collected from participants were part of course requirements in several classes. As such, PSTs who participated were not given enticements such as extra credit for study participation, nor could grades be negatively impacted due to nonparticipation in the study. PSTs could leave the study at any time without repercussions. CIs provided the participants with training in the framework that guided the lessons. None of the data were analyzed until the semester after the data were collected.

CIs showed PSTs how to access multicultural literature to facilitate discussions about race. The lesson framework and the literature used for these lessons provided support as well as compelling reasons to talk about and to teach about race. PSTs taught three lessons in a classroom in which they were placed for field experience. After each lesson, PSTs wrote a reflection in a journal (Figure 1), and debriefed with CIs about the aspects of race within the lessons (Figure 2). Debriefings were voice recorded for transcription, and were subsequently deleted.

Figure 1 Participant Reflection

Please address the items below and anything else that you think is pertinent to the study. The questions are meant to serve as a guide your writing.

The primary purposes of this research study are listed below. Address ways your lesson preparation, or the actual lesson helped you think through the following:

1. to help dominant culture teacher candidates better understand themselves as racial beings
2. to help develop racial identity
3. to become more comfortable talking about race
4. to become more comfortable teaching about race

Please also respond to the following:

5. What piece of literature did you use in your lesson? What is your response to the literature?
6. How comfortable were you debriefing with the co-investigators, specifically talking about race?

Your reflection should address anything in the study that has helped address items 1-4 above, as well as anything else related to the study.

Figure 2: Lesson Debriefing Protocol

Procedure: CIs will ask participants to respond to the items enumerated below. Word processing as the meeting progresses will facilitate accuracy and thoroughness. Ask follow-up questions that you feel would help you better understand how to address the research questions.

Debriefing Questions

Briefly describe the school in which you taught- grade level, school setting, other pertinent information.

1. How comfortable are you in teaching in this classroom? Why is that so?
2. How do you think the lesson went? What went well? What would you have liked to have changed?
3. Do you think there were any missed opportunities in discussing race-related issues? How comfortable were you teaching this lesson, especially the aspects that dealt with race? How did the students receive the lesson? How do you know?
4. Do you think the lesson helped students better understand how race affects our lives? Why do you think that?
5. Has teaching the lesson helped you think about yourself as a racial being? If so, in what ways?

   How could the guide be improved? Additional comments or questions?

The Research Questions

In an effort to better understand how talking about and teaching about race might facilitate the examination of racial beliefs by the participants, and to understand one means of developing racial identity, the investigators employed the following three questions: 1.) How does the study design impact white PSTs' racial identity development, if at all? 2.) Which part(s) of the study design was/were most beneficial to PSTs' (further) development of their racial identities? 3.) Are PSTs becoming more comfortable talking about/teaching about race? If so, in what ways?

The Participants

Engaging in theoretical sampling, the CIs selected preservice teachers in their program as participants if they were willing to commit time to racial identity work, and to the study requirements. Participants were recruited from among all PSTs who were of sophomore-senior status because they had experience working with P-12 students, writing lesson plans and reflections, and in debriefing lessons. Eleven PSTs, including three of the Cis, were selected as participants with 10 completing the study.

Data Analysis

Good qualitative research requires simultaneous data collection and analysis (Gay & Airasian, 2000). As such, the investigators engaged in a process of evolving data analysis looking for themes throughout the data collection period. Themes were modified as needed to fit new data and were further tested (Gay & Airasian). In order to ensure a high quality of data analysis, CIs worked in pairs to read and code data for themes, while the alternating pair reread and verified codes as an audit process. When discrepancies arose, the four met as a group until consensus was achieved. CIs systematically compared what was already coded with new ideas they had about the codes and themes (Hammersley & Atkinson, 2007).

Findings

As with all work in racial identity, we offer our findings with humility knowing that it is not possible to fully understand our own or others' racial identities. We found sufficient evidence to describe the participants' racial identity development envisionment as a collective whole. Accordingly, we offer excerpts from five of the participants' data sources (Hadley, Nancy, Henry, Wendy, and Sally) to support our claim.

One of the main codes used for sorting participant's comments into the different stances was critical self-reflection (CSR). According to Gay and Kirkland (2003), CSR is critical self-reflection on race/culture and how our world view shapes our perspectives. We used this code when participants acknowledged how their world view shaped their perspectives. We later further delineated this code into segments that demonstrated the various stances of envisionment building.

One aspect of the *being outside and stepping in* stance (Langer, 2011) is making connections in an initial understanding. Statements like, "We talked about how everyone has their own strengths and if we can appreciate that, we will be stronger people, a stronger band, a stronger school, etc. Everyone brings unique skills to the band and without an instrument, it would not sound the same. Therefore, everyone is important" (journal 1). Statements like these signal that Hadley employs the construct of universalism (DiAngelo, 2016) to make sense of the world. She believes that people are just people and race is irrelevant. Hadley used the concept of uniqueness to make sense of race as an introduction to an unfamiliar concept through the use of a familiar one. While we do not deny that all humans are unique, pursuing this line of reasoning does not permit white people to understand that racial inequality is a by-product of a specific type of difference, and that difference is rife with inequity. Another PST, Harry, seemed fearful of discussing race/ethnicity with the CIs for fear of offending her. He whispered the word "Muslim" to the CI during their debriefing. These data and others indicated cursory thoughts about race and racial identity.

In the *being inside and moving through* stance (Langer, 2011), PST's begin to understand that there is something they may have missed in regard to race, and begin to question past assumptions. Nancy's journal excerpt demonstrates this questioning. "This lesson definitely

opened my eyes to the way students perceive themselves and also how I perceive myself as a part of a bigger impact. Not only racially, but in terms of sexuality and religion, I do not often consider the bigger fabric that I am a part of, but I did today" (journal 2). One aspect of privilege is a sense of belonging due to being highly represented in areas such as the arts (movies, literature, etc.), and in leadership roles in nearly all aspects of society. Nancy began to understand that her identity impacts her "place" in society. Her understanding stands in contrast to individualism which suggests that race has no meaning and is not tied to the opportunities one might be provided. (DiAngelo, 2016). It suggests that success or failure is tied to individual character rather than a consequence of social structure. According to DiAngelo, "being viewed as an individual outside of race is a privilege only available to whites. People of color are almost always seen as 'having a race' and racial terms are used to describe them."

In this stage, participants are working to "unravel their internalized dominance" (DiAngelo, 2016) by looking at their assumptions and assumptions' origins. It is at this point in an envisionment, PSTs speculate about the meaning of race, testing ideas, and remaining open to change, to contribute to the development of the envisionment. Hadley began to realize that race impacts her life every day, often in ways that were previously unnoticed, as she explained in her third reflective journal. Nancy noted, "The only way we can become more comfortable is through talking about 'race' and making it okay to talk about" (journal 2). Participants became more comfortable, and questioned how they might address racism as the study progressed. Henry demonstrated the *stepping out and rethinking what you know stance* (Langer, 2011), when he made connections from the text to his life while reflecting on the Sandy Koufax story. He stated, "Although I will never fully understand what the main character is going through, in regards to racism, I still feel for his struggles, and can rejoice in his accomplishments," (journal

3). Harry made a significant shift in thinking, articulating empathy because he realized, unlike Koufax, most of his own struggles were not racial in nature. Wendy spoke about her ability to communicate with family members without a language barrier because they share English as their first language. "I realized just how privileged I am to be able to talk to my grandmother on a daily basis and that I speak the same language as her; it made me think about all the people in the world that may face this issue and I finally came to terms with my privilege" (debriefing 2). Some of the PSTs used an envisionment to reflect on things they never knew, did, or felt before they read the texts used in lessons. Nancy stated, "Since this study, I have become more aware of my identity as a white person. I have had more privileges in life than I have been aware of, and I think this study brought that to light both for me and the students at (school name) as well. We often do not think about how race is affecting us, especially in such a rural, predominantly white area, but I think this study helped to open a conversation on race that might not have happened otherwise," (journal 3). Some PSTs did enter into this stance but, as expected, most did not.

Understanding the *stepping out and objectifying the experience* stance (Langer, 2011) of racial identity development meant that some PSTs were becoming aware of the daily impact of race on their lives. Nancy stated in a journal reflection, "...I am not treated differently in my day to day interactions because of my skin color. One of the biggest instances of white privilege that I have come to realize during this study is that I have the privilege of not having to be conscious of my race" (journal 3). Brenda stated, "it feels (like) people get information from sketchy sources and then buy into it. With more education, people are more understanding. Where you grow up makes a difference, if there is one bad experience, people have a hard time letting go of the general negative connotation" (journal 3). Brenda is clearly able to step outside of her growing understanding and perspective of herself as a racial being and objectify it. In addition,

she noted that if people lack experiences that lead to real relationships with people of color, it could potentially create an overly negative association of a group of people that they haven't interacted with.

Sally articulated a strong sense of racial identity at the end of the study. She stated "I think teaching about race and talking about race more frequently has really put a lot of this into perspective for me. I guess I have known for a long time that I have privileges that many people don't have, but I didn't think about it often at all. I previously did not notice race related issues and didn't really seek to find any, but I think this whole process has made me more aware and now I am noticing things everywhere that deal with this topic and it makes me reflect much more than before" (journal 3). Although most of the PSTs did not develop sufficiently rich racial identities to allow them to move through all of the envisionment building stances, we believe it was, nonetheless, a useful theory to understand racial identity development.

Study Limitations

Even though the CIs understood that some degree of bias always exists with self-reporting, they designed this study to allow participants to speak for themselves as they examined their own beliefs. It would also have been difficult to have determined if self-perceptions differed greatly from perceptions of the researchers without more extensive field work which was outside of the parameters of the study's design. An additional limitation is that any study carried out within a university carries with it the power dynamics inherent in professor/student relationships, though the investigators mitigated these impacts to the degree possible.

Implications and Conclusion

The investigators recognize that the study's findings, and even its conception, were built upon the ongoing work of their teacher preparation faculty and staff. The faculty's and staffs' concerted efforts to understand themselves as racial beings, to understand race impacts within the larger society and schools, and to help their PSTs do the same resulted in a curriculum steeped in these concepts. While we believe that our findings are a result of the study's design, the impact of the overall program must be understood in order to provide the context of the study.

Using envisionment building (Langer, 2011) as a means to understand PSTs WRID proved to be useful in addressing the research questions. The key finding from data analysis was that the PSTs' willingness to challenge their preconceived notions and prejudice, to learn to empathize with racial others, and to actively put themselves in situations that were uncomfortable (i.e., classrooms, debriefings with the CIs, privately journaling) in order to grow, allowed them to move through a racial identity envisionment. Findings revealed that the use of multicultural literature that was authentic to racial others was a helpful tool, as were writing in reflective journals and debriefing with the CIs. Participants spent time with the literature in order to prepare for teaching. They shared the literature with their students and led class discussions during their field experiences. The literature provided participants with a metaphorical window through which to encounter others they often would not during their daily lives. Both journaling and debriefings provided venues for challenges to mindsets. During the study's duration, the CIs believed that they also moved through increasingly complex racial identity envisionments due to spending time thinking about and talking about race and its impacts. As noted earlier, several of the PSTs realized that they only thought about race during certain times, such as in class. They came to understand that they could go through life unaware that race was continually impacting

them because its impact was often beneficial. Thus, we conclude that spending time discussing race, in general, and our racial identities, specifically, contributed to our own and the participants' racial envisionments. The implication for teacher preparation programs is that faculty, staff, and students need many opportunities to work through the complex understandings of race impacts, including investigating their own race-related questions.

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Please do not use auto-formatting when preparing the manuscript!

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