CITE

Critical Issues in Teacher Education

The Journal of the Illinois Association of Teacher Educators

CRITICAL ISSUES IN TEACHER EDUCATION
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Multi-Thematic

Synopsis and Reviews

CITE

Critical Issues in Teacher Education

Critical Issues in Teacher Education (CITE) is a double blind reviewed refereed scholarly journal of the Illinois Association of Teacher Educators. CITE will publish empirically based or original research articles, synthesis papers, book reviews, and special reports on topics of interest to teacher educators.

The purposes of the publication of CITE are to:
1. Stimulate research and scholarly activity on teacher education;
2. Inform teacher educators about current research, promising practices, and significant issues concerning teacher education; and
3. Provide a forum for discussion of significant issues and problems in teacher education.

Manuscript Submission

Submissions must be completed papers (not previously published) and should not exceed 25 pages (including references and appendices, double spaced, 12 pt. Times Roman font, 1" margins). The editors request that pages be numbered. Tables, charts, figures, and illustrations should be kept to a minimum and placed in the text at the appropriate location. Authors should follow APA sixth edition guidelines (2010). Notification of the status of manuscripts will take place after the submission deadline. The journal editors reserve the right to make editorial changes.

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Assisting Preservice Teacher Candidates in Accepting the Need for Using Literacy Strategies in Content-Area Instruction
by
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Abstract

This qualitative investigation used a case study approach to collect data to answer the following question: Did preservice teacher candidates seeking initial certification to become content-area teachers accept the inclusion of literacy strategies into their instruction? The study reports data collected from two preservice teacher candidates seeking initial certification to become middle-level social studies teachers. The preservice teacher candidates learned to use annotation-of-texts with sticky notes and a note-taking guide as literacy strategies to use in two social studies classes of eighth-grade students. Data collection included interviews, member checking, observations, and analysis of instructional materials. Over the twelve-week instructional period, data provided evidence that the preservice teacher candidates found the effectiveness of using literacy strategies with content-area instruction and this evidence confirmed that literacy strategies should be considered for embedding into content-area instruction.

> Student: Since we are preparing to become certified to teach middle-level and secondary-level content-area subjects and not reading, why are we taking a reading course?
>
> Instructor's response: As a teacher educator, my professional responsibility is to assist with preparing our preservice teacher candidates to become effective at learning to meet the instructional needs of their future students. This includes providing you with a process for becoming an effective teacher that includes introducing you to literacy strategies that can be applied to the content-areas you will teach.

As an educator teaching a content-area reading course for students entering their field-placement semester, I receive this question on the first day of the class year after year. Each year my response is similar to the one shown above, no matter what content-area subjects the preservice teacher candidates intend to teach. Each year I emphasize the importance of preservice teacher candidates acquiring literacy skills that will assist them in meeting the literacy needs of the students they will teach. Together, over each semester, we spend instructional time investigating, learning, and practicing how to incorporate a variety of literacy strategies into the delivery of instruction in their content-areas (Gandara, Maxwell-Jolly, & Driscoll, 2005).

In school settings today, we often find a myriad of skills and experiences that are acquired through the funds of knowledge students in school settings bring from their environments. The funds of knowledge students hold, irrespective of their cultural background or economic status, are essential to them and their participation in their classroom settings (Folk, 2018; Moll, Amanti, & Gonzalez, 1992). Therefore, as classrooms become more diverse, the traditional lecture method often used in classroom settings is no longer effective as a standalone instructional approach (Camera, 2016). Teacher educators should assist preservice teacher candidates in learning to leverage the pre-existing knowledge and skills their future students will bring into their classroom settings by assisting the teacher candidates in learning

strategies that will support acquiring, retaining, and applying information in various contexts. Research indicates that students who learn to apply selected instructional strategies appropriately and who use self-regulatory skills to use these strategies are often more successful in school than their peers who do not apply these instructional strategies (Biemiller & Meichenbaum, 1992; Dignath, Buettner, & Langfeldt, 2008).

This article provides a narrative description of an approach used by a higher education teacher educator to assist preservice teacher candidates in learning to incorporate literacy strategies when teaching a content-area subject. This description depicts the challenges of providing a lens for connecting content instruction with literacy strategies and the opportunities used to introduce literacy strategies for content-area instruction. This narrative also describes the initial thinking of two preservice teacher candidates regarding the inclusion of literacy strategies into the instruction of their content-area subject through their journey to understand the need to include such strategies in the teaching of their content-area subject. Although the instructional process was challenging and of the need of convincing on the part of the teacher educator for the preservice teacher candidates to consider, it provides an impactful result that enhances the learning of both the preservice teacher candidates and the classroom students they taught during their field placement assignment.

The ability for today's school-aged students, who will be tomorrow's adults, to become capable of acquiring, retaining, and applying information, has taken an important stance during this century. The research indicates that the use of literacy strategies with content-area subjects enhances academic development and growth. The ability to read content-area information and to interpret this information can serve as a process for effective learning. The content requirements in the textbooks used in middle-level grades and high schools cover a wide-range of discipline-related concepts (Schleppegrell, 2004). These requirements often need a variety of strategies that provide students with multiple exposures to the material, thereby assisting them in the retention and application of the content information. The positive result of including literacy strategies in content-area instruction is evident. These results include a gain in vocabulary acquisition (Nagy, Herman, & Anderson, 1985), the capacity to respond to critical questions and statements from various text-sources (Ivey & Fisher, 2006), increased standardized test scores (Anderson, Wilson, & Fielding, 1988), increased content knowledge (Marzano, 2004), and an ability to read as a motivated and self-aware student (Eurydice Network, 2011). Given this information, along with the understanding of teacher educators to include literacy strategies into the teaching and academic development of preservice teacher candidates, it is important to demonstrate to our preservice teacher candidates the purpose and significance of understanding the use of literacy strategy inclusion in content-area instruction.

It is imperative for teacher education programs to find an instructional intersection for connecting content knowledge with literacy strategies. The information reported shows a positive result for the inclusion of teaching literacy strategies in a university content-area reading class for middle and high school preservice teacher candidates who are preparing to become teachers of a variety of discipline-related subjects. As a teacher educator, I used the following question for this study: Did preservice teacher candidates seeking initial certification to become content-area teachers accept the inclusion of literacy strategies into their instruction?

Theoretical Framework

This study considered research related to instructional knowledge for preservice teacher candidates and their transfer of knowledge acquisition and

application to students in middle school settings. The construction of a knowledge-base for using literacy strategies presented by the teacher educator for the preservice teacher candidates and their transfer of the usage of the knowledge of how to use and apply literacy strategies to a student audience in classroom settings determined the selection of the pedagogical content knowledge framework (Shulman, 1987; Zimmerman, 1990). Teaching a content-area literacy course is not teaching the content of the subjects of history, science, mathematics, or English. Instead, instruction is aimed at teaching the pedagogical transfer of these content-area subjects to introduce and scaffold the presentation of content information, how to consider and use instructional standards, and how to teach the use and application of literacy strategies (Shulman, 1987).

As teacher educators prepare preservice teacher candidates to teach content-area subjects in classroom settings, using literacy strategies has promise due to these candidates learning how to acquire, retain, and apply content-area information through intentional instruction and practice before attempting to teach students in classroom settings (Cochran-Smith & Lytle, 2009) and guided by the assessment of their learning and self-reflection that documents, over time, change and growth (Schön, 1983). Throughout this instruction and practice with students in school settings, preservice teacher candidates may observe student achievement and growth, and the classroom students may notice improved learning and overall academic success as well (Zimmerman, 1990). Collaboration on the part of the preservice teacher educator and the classroom students using these literacy strategies to learn and retain content information may provide an understanding that these strategies can result in academic gains (Sowa, 2009). Although classroom students may benefit from literacy strategy instruction, more investigations are needed to determine literacy strategy effectiveness among middle-level students and high school students in content-area classes. This article addresses information related to this research need.

Study Overview and Methodology

This study was conducted in a class that is required in the teacher certification sequence of courses for middle-level and secondary-level preservice teacher candidates in a Tier I university. The course used for this study is described as a three-hour lecture course that includes a field-based component that covers the requirements for several courses in the academic sequence. The course, entitled Reading in the Content-Areas, is taken before the student teaching semester. As a requirement for 4-8 and 8-12 initial teacher certification, this course is designed to acquaint students with research-based literacy strategies that can be applied across content subjects. The requirements for this course center around advocacy for effective instruction for all learners and extends into supervised small group instruction (Athanases & de Oliveira, 2008). During the semester-of-study for Reading in the Content-Areas, students engage in a series of instructor-directed lectures and demonstrations of literacy strategies, in-class individual and group practice of strategy use and application directed to their content-area subject, field-based instruction for groups of four to five students in classroom settings, self-reflection journaling, and assessment of academic content knowledge.

This qualitative investigation used a case study approach to collect data over twelve weeks of instruction. As Creswell (2013) indicates, a case study investigates one or more bounded systems over time by collecting multiple forms of data to provide an analysis of description and themes. This case study reports information from two students completing the academic requirements to become a certified middle-level history/social studies teacher. The two history/social studies

major participants were identified through a convenience sampling (Creswell, 2013) based on their location proximity to the university and plans to teach a subject that contains varied print characteristics. Maria and Ruben (pseudonyms), served as student assistants in a U.S. History eighth-grade class as a requirement of their certification program.

Data collection consisted of interviews, member checking, observations, and analysis of instructional materials. A total of four comprehensive interviews were conducted with the two preservice teacher candidate participants during their twelve-week experience. The interviews focused on the one-hour instructional sessions with the students in their classroom setting by allowing the participants to identify their perceptions of the academic needs of the eighth-grade students, how they introduced and used the literacy strategies, and the evidence used to monitor the academic development and growth of the eighth-grade students. The following list provides samples of the interview items asked:

1) Describe how you introduced each lesson.
2) Explain how you selected the content to cover during your small group instruction.
3) Explain the process you used to introduce each lesson.
4) How did you introduce the two literacy strategies to your small group of students?
5) What did you notice about the students' use of the strategies?
6) What additional supports did you use to provide students with the capacity to capture information?
7) How did you monitor the students' academic development and growth?
8) Do you now feel literacy strategies can support student learning?

The three observations by the researcher occurred during the second week, the seventh week, and the final week of the field-based instruction. The observation protocol consisted of taking field notes that described the setting, the organization of the lesson, the preservice teacher candidate and student interaction, and quotes from the preservice teacher candidates following the use of the literacy strategies (Hatch, 2002). All teaching artifacts that included lesson plans, examples of how the two literacy strategies were taught and applied with the content textbook, and lesson reflective comments were submitted to the researcher. Data sources were collected and organized into meaningful categories. Once the categories were determined, themes were identified. The purpose was to identify patterns and themes that provided documentation of the effectiveness of the literacy strategies that were taught by the preservice teacher candidates and used by the eighth-grade students to enhance academic development and growth (Clandinin & Connelly, 2000).

Preparing Preservice Teacher Candidates for Field-Based Experiences

Before preservice teacher candidates Maria and Ruben provided group instruction in their assigned eighth-grade classrooms, they received the traditional campus-based classroom instruction from their professor and continued this campus-based instruction throughout the semester. This instruction included lectures, technology-based demonstrations, assessment practices, peer-to-peer engagement using grade-level text-sources to discuss and practice the use of literacy strategies along with discussions of findings from their field-based experiences. The course also used a textbook, course objectives that covered the components of literacy skills for middle-level learners, program, state, and national standards, and field-based experiences.

Maria and Ruben provided one-hour small group instruction one day per week for twelve weeks. Both used text-sources that were being used by the eighth-

grade students to assist basic instruction and with the teaching, demonstrating, and applying of two literacy strategies. Although the two preservice teacher candidates learned to use twenty literacy strategies that included those such as K-W-L, think-alouds, graphic organizers, and content/word walls, they selected annotation-of-text with sticky notes and note-taking as the strategies to use for their small group instruction.
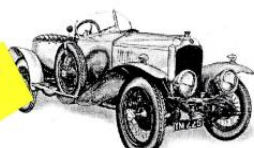
The course content centered around reading concepts related to content-area text-books and the exploration of literacy instructional strategies that could be used with content textbooks and other printed and media forms of content information. From the strategies presented and practiced in their university class, the two preservice teacher candidate participants selected annotation-of-text with sticky notes and note-taking to use for instruction with their assigned small groups of eighth-grade students. Annotation-of-text with sticky notes was presented and practiced in the university class as a strategy used during textual reading that prompts the reader to stop and notice important details in print. Because students in the school they were assigned to conduct their field-based experiences do not write in their textbooks, the eighth-grade students were taught how to use sticky note strips to annotate their text pages by noting important information, posing questions for clarification, identifying difficult or unknown vocabulary terms, making comments about important concepts along with connecting new information to previously learned concepts. The instructional intent was to assist the eighth-grade students in learning a strategy that would reduce the unsuccessful trend of rushing through the reading of their textbook and other printed resources (see Figure 1).

Figure 1. Annotation-of-text with sticky notes (Adapted from Davidson, 2003).

A two-column note-taking guide that also included a summary of note responses was the other strategy selected to use by the preservice teacher candidates with the eighth-grade students. The note-taking guide used a variety of components that included the student's name, the date the notes were taken, identification of the textbook pages the notes covered, vocabulary with definitions, questions and statements posed at different level of comprehension, and a summary paragraph that captured the ideas listed in the response sections of the note-taking guide (see Figure 2).

Note Taking Guide

Name:	Date:
Subject: Topic:	Pages Covered:

Note #1: The following terms were defined and discussed before starting the reading and discussion of the textbook information.

Great Depression, Holocaust, prosperity, New Deal, dictators, D-Day, allies

Note #2: The following people were discussed and placed, with descriptions, on a content wall chart that was posted in the classroom for continued review and use.

President Calvin Coolidge, flappers, Joseph Stalin, Benito Mussolini, Adolf Hitler, Harry Truman

Note #3: The following places were discussed and located on a world map.

United States, Soviet Union, East Asia, Italy, Germany, Britain, France, Poland, Italy, Japan, Pearl Harbor, Japan

Questions/Statements (Provided by the Preservice Teacher Candidate)	Responses (Provided by the Students)
Describe the prosperous twenties. Why was there a rise of dictator during this era? Describe the events that lead to the start of World War II. What caused one side to surrender?	

Summary: (Using the information recorded in the responses column, students provide a written set of statements that summarize this information.)

Figure 2. Two-column note-taking guide (Adapted from Davidson, 2003).

Findings

At the beginning of the semester, the preservice teacher candidates questioned the purpose of taking a reading course when they were preparing to become content-area teachers. The researcher, who was also the instructor-of-record, felt this was a legitimate question and that the course presentations needed to provide instruction that connected literacy to the various content-areas. The findings from this study show that the two preservice teacher candidates experienced an academic shift in their thinking about literacy being a part of content instruction and learning. This shift included the understanding of how literacy strategies can be used to support a student's thinking and application of knowledge in a content-area, the understanding and use of multiple literacy strategies that can be used in the instruction of content-areas, and how they specifically used two strategies to scaffold the instruction of social studies content. The discussion of the findings from the two preservice teacher candidates is presented with additional information.

Maria and Ruben's first visit with their students provided an opportunity to introduce themselves by telling the group about why they are preparing to become a teacher, about their own experiences as a middle-school learner, and about how they prepare to study for various requirements related to their courses at their university. Following their field-based assignments by their university, they used their lesson plan template to design lessons that included a background discussion of the content, a warm-up activity, a set of guiding questions and statements at different levels of comprehension to use during the reading of the text, a discussion of the information following the text-reading, and a check of how students recorded the information discussed. Maria shared that immediately, she noticed that "the students did not understand the content of their textbook, did not record information, and did not respond to any of the questions and statements that she asked about the text-reading." Ruben also observed that his students "were not interested in the content of the lesson and did not engage in the discussion about the content." This caused a concern on the part of Maria and Ruben and a need for them to provide the eighth-grade students with a process for learning and for retaining the text-information. They both observed that the students did not take notes and did not read critically even with the use of guiding questions and statements to use during the reading of their textbook.

Later, Maria shared,

> I immediately realized that I needed to identify a way to assist my group of four students in learning a strategy to use to assist them in understanding their text-reading and a process for capturing information for later use of this information. I also realized that I needed to demonstrate and to provide an example of each strategy I would introduce with my instruction of the social studies content.

When Maria asked her students to tell her about how they studied their textbook, the students explained that they were not allowed to write in their textbooks and that they did not take notes. The classroom teacher provided Maria with academic information about the students in her assigned group and invited Maria to use strategies that would assist the students in accomplishing higher achievement levels. The teacher explained to Maria that the students in this group were not passing the course and that they seemed not to be engaged with the concepts of the social studies content. Maria noticed that the classroom's environment was inviting with maps of the United States, pictures of presidents, course objectives and standards, and a series of commercial posters. She also noted that the classroom was arranged with both tables and desks along with a bank of laptop computers. However, Maria stated that,

> I realized that I needed to design my lesson development to be infused with literacy strategy use so that my group of students would learn and develop the capacity of becoming independent at acquiring and connecting their social studies content in a way that would promote effective and engaged learning and retention of information.

Ruben found that his students did not show an interest in learning the content of social studies and this prompted him to design his lessons around establishing a background for understanding the concepts of the lesson and a way to capture their learning in writing for future use as they prepared for tests and other assignments.

Maria and Ruben, who were assigned to the same school and found that they would be teaching their small groups the same content, decided to plan their lessons together. The lessons included an introduction that provided a background context for their students. This introduction used video clips, short stories, pictures, and other printed and digital resources to establish the context for learning new information. They also considered the funds of knowledge (Moll et al., 1992) their students had as they started discussing a new social studies content topic One of the topics they used in the social studies textbook was "The Great Depression and World War II."   They explained how they asked their students if they had family members who had military experience to start the discussion. They also explained how they used sticky notes to teach their students the strategy of text annotation by explaining and demonstrating how to use the sticky notes to underline unknown vocabulary words so that they could later gain the meaning from a reference source or by learning to use context clues, by writing questions about difficult passages on the sticky notes they could later use to ask for additional support and clarification, and by showing the students how to write comments on the sticky notes about how they made connections to the text information. They also designed a two-column note-taking guide for students to use as they interacted with their textbook. The note-taking guide included an information header, vocabulary terms to define and to use in responding to text information, guiding questions and statements to consider in the response column as they read their textbook, and space to write a summary that captured the significant information recorded in the discussion column. Knowing that their group made low grades on tests, they also wanted to keep student test data.

Throughout the twelve-weeks of field experiences, Maria and Ruben noticed that their students were more engaged in their learning of social studies concepts. They noticed that the pages in their textbooks were filled with sticky notes, that their note-taking guides included detailed responses to questions and statements in the response column, and that their summaries were capturing significant details. Maria also found that her students had gained higher test scores over the twelve-week instructional period. The chapter assessment average at the beginning of her field-based assignment with the eighth-grade students was 55, and at the end of the instructional assignment period, the average was 87. Maria noticed an increase in the students' interest in social studies topics and an ability to independently capture information from their textbook. Ruben also found a significant increase in the average scores of his students' assessments. When he started his field-based experience, the classroom teacher provided assessment data that indicated his group had an average of 62. The average of his students at the end of his field-based experience was 89 on textbook assessments. Additionally, Ruben noticed the development of a positive attitude among his group regarding the acquiring of information from their textbook, increased use of the sticky notes, and use of the note-taking guide that resulted in detailed responses on the form showing vocabulary explanations, responses to the comprehension questions and statements

along with a summary that described the main issues captured from the notes, and an overall desire to learn more about social studies concepts.

Although the researcher did not highlight the academic journey of the other class members who were enrolled in this class, the researcher did ask these students to provide comments about their field experience. Below is a summary of the comments collected from the survey.

- "The connection to literacy and content-area text-sources is clear."
- "My students did not seem to understand why they needed to read their science textbook. Their teacher always provided them with a list of facts to remember for their tests. After providing them with a content/word wall that included important facts, formula postings with definitions, and a note-taking form, my students became more interested in their learning. I also noticed that they were reading and discussing the information read with their peers. I am convinced now that literacy is an important addition to content-area instruction."
- "When I enrolled in the content-area class, I thought it would be an easy course. I immediately found that it was both challenging and useful. I found ways to engage my students in reading more critically literary works. I will also use literacy strategies going forward as a teacher."
- "Wow." I learned along with my students how to use literacy strategies. This experience was incredible for my students and for my personal learning. I wish I had known about these literacy strategies when I was in middle school."
- "I used several literacy strategies with my students during the twelve-week instructional period. My students enjoyed learning how to acquire more information from their textbooks. They also found that their test scores increased because they were able to use a strategy to study and to retain information. They also found ways to use the strategies in their other courses."

The question used in this study (Did preservice teacher candidates seeking initial certification to become content-area teachers accept the inclusion of literacy strategies in their instruction?) can be answered as "Yes." The comments from the participants in the study and the documentation of student achievement for the eighth-grade students provide evidence that literacy strategies are useful in content-area instruction.

Discussion

I observed Maria and Ruben in their field-based classroom environment three times during the semester. During these observations, I noticed an increase in the professional growth of both Maria and Ruben, and I noticed their growth regarding their instructional style and delivery. As I evaluated their lesson plans and student work samples, there was an indication that both the preservice teacher candidates and their students were achieving significant learning capacity. Maria and Ruben, along with their classmates in the course at the university, found that through class lectures, textbook readings, practice, and application of literacy strategies, peer-to-peer exchanges in class and during a variety of settings, and field experiences in middle school settings, they now have an understanding of the literacy and content connection. The preservice teacher candidates often said, "I had not ever thought that I needed a class in reading to assist me in becoming an effective teacher." As Shanahan and Shanahan (2008) indicated, disciplinary literacy skills should be embedded in content-areas instruction with subjects such as

social studies, mathematics, and science that generally do not consider using literacy-related strategies with instruction.

As educators of preservice teacher candidates who are preparing to become certified as middle-level and high school teachers, there is a need for teacher educators to provide a lens into ways to incorporate literacy instructional components into classroom instruction. This lens should include a robust introduction to literacy-related strategies that are discipline-specific in assisting middle-level and high school learners to acquire, retain, and apply content concepts. Wineburg, Martin, & Monte-Sano (2011) have indicated that teacher educators need to assist their preservice teacher candidates in learning ways to assist and encourage their future students to become capable of thinking and of acquiring information like a content specialist. Specifically, Wineburg and Reisman (2015) suggest that classroom students should learn strategies that will assist them in reading and understanding social studies content.

The two participants in this study, along with their classmates, provided evidence of their understanding and acceptance of the connection between literacy and content-subject learning. These findings and comments from the participants also provided evidence for the inclusion of literacy in teacher education programs that certify middle-level and high school teachers. As an indication of Maria and Ruben's experiences along with those of their classmates, teacher education programs should continue to provide field-based experiences that allow their preservice teacher candidates to make this connection.

Conclusion

A content reading course that provides explicit instruction using literacy strategies is an important part of a teacher preparation program. The inclusion of field-based experiences that allows preservice teachers to assist with small group instruction is an essential process in becoming an effective certified teacher. Preservice teacher candidates who engage in field-based experiences using literacy strategies to assist students in classroom settings to learn to use and apply these strategies in their content-area subjects should have the confidence and background to become effective teachers. Furthermore, the students in classroom settings that they teach will additionally benefit from instruction that includes the use and application of literacy strategies.

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Deliberate Practice and Microteaching: A Strategy for Elementary Science Teacher Education in the Era of the Next Generation Science Standards
by
Duane J. Lickteig, Harvey Henson, Peter J. Fadde, and Angela Box

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Abstract
The Next Generation Science Standards (NGSS) redefine science instruction and consequently present several challenges to elementary teachers and teacher candidates. Limited time dedicated to science at the elementary levels, low science teaching self-efficacy, and ensuring proper theoretical and practical understandings of the NGSS three-dimensional framework are a few of these challenges. This necessitates that teacher educators reflect upon how well their programs are preparing teachers in this era of science education reform. We propose that deliberate practice may be used as a strategy to structure microteaching experiences in pre-service elementary teacher preparation. Deliberate practice should not be viewed as the universal remedy to the challenges of the NGSS due to the unique culture of teacher education. However, the systematic process of deliberate practice applied to structure microteaching provides opportunity for novice teachers to practice standards-based instruction thereby accelerating their future success with implementation of the NGSS in the elementary classroom.

Research has repeatedly shown that teachers, especially elementary teachers, struggle in their confidence and ability to teach science (Akerson, Morrison, & McDuffie, 2006; Akerson & Donnelly, 2008; Bencze & Hodson, 1999; Capps & Crawford, 2013; Gunning & Mensah 2010 ; Howitt, 2006; Palmer, 2002; Schwartz & Lederman, 2002) – a problem that is likely to be amplified with new standards that require even deeper understanding of science concepts and processes. In essence, elementary teachers must become more expert at science and teaching of science. While a degree of expertise can be attained from methods classes and clinical teaching experience, expertise research suggests that the most critical contributor to developing expertise is deliberate practice. This paper discusses deliberate practice as a strategy to structure and enhance the often underrated method of microteaching in science teacher education.

Deliberate practice is a framework that includes a set of characteristics shown to be highly effective at progressing individuals' domain-specific skills beyond what instruction and experience alone may attain (Bronkhorst, Meijer, Koster & Vermunt, 2014; Ericsson, Krampe, & Tesch-Romer, 1993; Ericsson, 2008; Fadde & Jalaeian 2019). Deliberate practice aligns well with microteaching as an organized and structured instructional activity that provides a safe environment for teacher candidates to experience cycles of instruction. The Next Generation Science Standards (NGSS) require teacher educators to consider what changes must be made to preparation programs to best reflect reform-based pedagogies to teacher candidates (Bybee, 2014). We believe that opportunities exist to apply the framework of deliberate practice in the context of microteaching to address challenges presented by the NGSS. We will begin by addressing the unique issues facing science teacher education, provide an overview of expertise as a precursor, discuss deliberate practice, and finish by describing how deliberate practice may be used to structure microteaching.

Challenges Associated with NGSS

The NGSS framework presents a paradigm shift in what defines successful science teaching and learning (NRC, 2012). These standards reflect a view of science literacy that incorporates both the acquisition and utilization of knowledge (NRC, 1996; NRC, 2007). A characteristic that defined modern science education before the NGSS was that of simplifying, or eliminating, the requirement for students to engage in the sense-making process of science (Duschl & Bybee, 2014; Forbes, Zangori, & Bigger, 2013; Isablle, 2016; Windschitl, Thompson, & Braaten, 2008). This translated to classroom practice in the form of verification, or cookbook labs. Students were taught a concept in a lesson, and then would see the knowledge confirmed through a laboratory procedure. Essentially, students were taught knowledge, without being required to learn how that knowledge is developed, or how to apply that knowledge to make sense of the natural world.

The NGSS framework may be the most recent reform in science education, but it is not unique in its attempt to shift classroom practice. The leading paradigm over the past two decades has been that of scientific inquiry (Bell, Smetana, & Binns, 2005; Forbes et al., 2013). Inquiry emphasizes students "doing science" by participation in scientific investigations ranging in different levels of teacher or student control over the process (Rezba & Auldridge, 1999). Additionally, inquiry prioritizes what was previously lacking, that students understand how to construct and apply scientific knowledge. The essential features of inquiry include: 1) engagement in scientifically oriented questions; 2) prioritization of evidence; 3) formulation of evidence-based explanations; 4) evaluation of explanations based on scientific knowledge and 5) communication and justification of explanations (NRC, 2000).

Two concerns arose related to inquiry-based instruction: its definition and emphasis in state standards. Among teachers, inquiry was an instructional activity that was ambiguous, especially in how the essential features were established in classroom practice (Capps & Crawford, 2013; Forbes et al., 2013). In practice, inquiry became a lofty goal that did not have a clearly defined path to attain. Additionally, inquiry promoted a view of science literacy accepted by science educators since the mid-1990's that science learning should emphasize both the scientific knowledge students learn and the sense-making from which this knowledge develops, or science's epistemology (NRC, 1996). In other words, science literacy encompasses what students should know and should be able to do with that science knowledge. However, prior to the NGSS, many states' science standards separated the knowing and the doing of science. Additionally, standardized assessment of science almost exclusively emphasized what students should know (Pruitt, 2014). Inquiry, being ill-defined and not assessed, became a struggle for even the best teachers to enact in their classrooms (Capps & Crawford, 2013).

The NGSS framework seeks to overcome both of these obstacles through integrating the knowing and doing of science, while reorienting and clearly defining what doing science looks like in the classroom by providing observable performance expectations (PEs). NGSS revolves around a three-dimensional framework that integrates disciplinary core ideas (DCIs), cross-cutting concepts (CCCs), and scientific and engineering practices (SEPs). Whereas the essential features of inquiry emphasized the overall scientific process, the SEPs focus on what students should be doing in an investigation. These practices include:

1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models
3. Planning and carrying out investigations

4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations (for science) and designing solutions (for engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information (National Research Council, 2012, p. 42)

Another function these practices serve is placing evidence and explanation at the center of the iterative investigative process. This view of learning requires more than just knowledge acquisition and expects students will develop the ability to build, refine, and justify knowledge claims (Duschl & Bybee, 2014). However, just as expectations for science learning have increased for all students, major difficulties facing teachers and teacher candidates attempting to implement this paradigm of science teaching have similarly increased, especially at the elementary level.

The success of the NGSS to promote authentic student learning in science largely depends upon the ability of teachers to implement instructional practices aligned with the three-dimensional framework. This challenge often occurs at the elementary grades where demand to improve math and reading scores has led to the reduction or elimination of time allotted for science (Isabelle, 2016). A second challenge is that elementary teachers and teacher candidates consistently report low self-confidence, or self-efficacy, towards their science teaching (Gunning & Mensah 2010 ; Howitt, 2006; Palmer, 2002). Negative prior experiences in science and false representations of science have been cited as sources of this low self-efficacy in teacher candidates (Lederman & Abd-El-Khalick, 1998; Tosun, 2000). Bandura's social learning theory regarding self-efficacy, both personal self-efficacy and outcome expectancy, draws a link between teachers' belief systems and their eventual teaching practices (Bandura 1997). The theory and implications of self-efficacy postulate that an individual's self-assessment of their ability, and the likelihood that their efforts will yield a positive result, will impact the action that individual takes (Bandura, 1997; Pajares, 1996).

Clearly, a major challenge to be addressed during this paradigm shift is supporting elementary teachers and teacher candidates in developing clear understandings of the different SEPs (Bybee, 2011), and preparing them to implement and assess the SEPs in the classroom (McNeill, Katsh-Singer & Pelletier, 2015). Seeking to understand the ideas that 19 pre-service elementary teachers held about NGSS' SEPs, Ricketts (2014) discovered that participants held hopeful views related to NGSS' emphasis on argumentation and communication, critical thinking, and answering and asking questions as the goal of science. However, participants struggled in several areas including: the purpose of modeling, the process of analysis, and not being able to distinguish between argumentation and explanation building (Ricketts, 2014).

The current direction of research in this area is looking at ways to prepare teacher candidates to incorporate these SEPs within their pedagogy while developing proper understanding and confidence to teach science aligned to the NGSS (Hanuscin & Zangori, 2016; Nollmeyer & Bangert, 2017). This reform effort in science education calls for not only increased knowledge but also an increase in expertise that includes performance-based practices (Windschitl & Stroupe, 2017). Within studies on expertise, deliberate practice is a framework used to structure instruction that can accelerate expertise (Ericsson, 2008). Science teacher educators can apply this framework to provide insight on how to address the challenges of NGSS in teacher preparation and professional development.

Studies on Expertise

Expertise has been studied in various disciplines and activities ranging from chess, music, athletics, health professional programs, and teacher preparation. Over time, and depending on the discipline, the definition of expertise has varied. Initially, expertise was, "based on accumulated knowledge, extensive professional experience, and peer nominations" (Ericsson, 2008, p. 989). This definition came under scrutiny as studies on expertise in professional fields indicated that advanced training and more experience were not indicators in themselves of the high performance exhibited by experts. However, experts across disciplines share certain characteristics, such as the ability to perceive large and meaningful patterns (Berliner, 2004). The effort to determine what marked expertise required a systematic and scientific study of the topic. Further, a focus on the reproducibility of superior performance, the need for objective measurement of performance, the development of standardized tests, and a defined progression of mastery in disciplines were required (Ericsson, 2008). Within the field of teacher education, Berliner (1994a,b) was one of the first to undertake the effort to define propositions about the traits, skills, and habits of mind that characterize expert teachers.

Investigators observed that expertise generally took years, up to a decade, to develop in most disciplines (Ericsson, 2008). Further, after a certain point in development, experience by itself did not lead to the improvement of performance (Ericsson, 2008). Even in teaching, expertise is not an automatic consequence of experience. Rather, as Dunn and Shriner (1998) characterized, expertise in teaching develops through sustained effort in domain specific activities structured to refine skills, and expertise grows by progressing through developmental stages. Drawing upon Dreyfus' (2004) five-stage model of adult skill acquisition, Berliner (2004) sought to describe the developmental stages of teacher expertise and noted characteristics that distinguish novice and expert teachers include:

> Expert teachers often develop automaticity and routinization for the repetitive operations that are needed to accomplish their goals; expert teachers are more sensitive to the task demands and social situation when solving pedagogical problems; expert teachers are more opportunistic and flexible in their teaching than are novices; expert teachers represent problems in qualitatively different ways than do novices; expert teachers have fast and accurate pattern-recognition capabilities, whereas novices cannot always make sense of what they experience; expert teachers perceive meaningful patterns in the domain in which they are experienced; and although expert teachers may begin to solve problems slower, they bring richer and more personal sources of information to bear on the problem that they are trying to solve. (Berliner, 2004, pp. 200-201)

Berliner (2004) posits that Dreyfus' (2004) five-stage development model may be used as a heuristic for teacher development. He favors this developmental model over others (theories from psychomotor learning, cognitive psychology, and model of domain learning) because its progression of increasing complexity fits the distinctions between the novice and expert teacher listed above.

Developing Expertise

The stages of development within this model include: novice, advanced beginner, competent, proficient, and expert (Dreyfus, 2004). Novice teachers (stage 1) are still learning the objective facts and features of curriculum and the classroom, with their behavior being characterized as rational, inflexible and confined to a set of prescribed rules (Berliner, 2004). Advanced beginners (stage 2) are developing their

practical (conditional and strategic) knowledge of what to do and not to do in certain circumstances. A defining characteristic of this stage is that the teacher's experience is influencing behavior, yet the teacher is unable to determine the highest priorities in different contexts. This is the significant difference between advanced beginners and those who are competent.

Competent (stage 3) is determined by an individual's ability to make conscious, goal-oriented choices based upon prioritization (Berliner, 2004). Due to this, teachers at this stage feel an increased sense of responsibility for their actions since they see a strong connection between their actions and students' performance. However, their decision making is not fast, fluid or flexible. Proficient teachers (stage 4) are able to recognize patterns and predict student's behavior. The decision-making process is not analytic and deliberate, but rather includes a heavy reliance on intuition. Finally, expert teachers (stage 5) display consistently high performances without seemingly making conscious choices of what to attend to or what to do (Berliner, 2004).

Across disciplines, the question arises of how long does it take an individual to progress through developmental stages to attain the level of expertise? Within fields that require the performance of complex skills (chess, music, sports, surgery) it has been supported that 10 years or up to 10,000 hours of practice is required to progress from a novice to the level of an expert (Berliner, 2004; Ericsson, 2008). Within the field of teaching, Berliner (2004) predicts that a motivated teacher might be able to achieve expertise within 5 to 7 years.

 Generally, initial improvement beyond the stage of a novice comes from problem-solving and identifying better methods of achieving a performance task, often under the direction of a coach (Ericsson, 2008). At this point, automation, or the loss of conscious control of behavior, may set in during performance. The danger of automation is that it may lead to arrested development if aspiring experts do not intentionally seek to achieve higher performance expectations. Deliberate practice is a means by which an individual may be trained in a preparatory stage (e.g., teacher education program) so that field experience is amplified for further and faster progress towards expertise.

Deliberate Practice

Deliberate practice is further defined as sustained engagement in an activity intentionally designed, by an instructor, coach, or mentor, to increase performance or address deficiencies (Bronkhorst et al., 2014; Fadde & Klein, 2010). Deliberate practice entails activities that have been found most effective in improving a specific aspect of performance. It should be noted that not all activities undertaken by an individual are considered deliberate practice. Ericsson et al. (1993) make a distinction between deliberate practice and the activities of work and play. Notably, work includes performing activities for some external reward, and play may be defined as activities with no goal and pursued for inherent joy. These differ from deliberate practice for which the engaged activities are distinctly intentional and "specifically designed to improve current levels of performance" (Ericsson, Krampe, & Tesch-Romer, 1993, p. 368). Table 1 illustrates the developing characteristics of activities that may be considered deliberate practice related to expertise.

Table 1. Development of Deliberate Practice Characteristics

Ericsson et al, (1993)	Ericsson (2008)	Fadde & Jalaeian (2019)
1. Shown to be most effective in improving performance	1. Task with well-defined goal	1. Capture important aspects of complex performance
	2. Providing motivation to improve	2. Be observable and measurable
		3. Offer timely and objective feedback
2. Specifically designed to improve current levels of performance	3. Given feedback.	4. Enable repeated engagement for refinement of skills
	4. Provided ample opportunities to improve and gradual refinement of behavior	5. Be designed, assigned, and monitored by a coach, instructor, or mentor
		6. Address specific deficiencies in performance
		7. Require concentrated effort that is not inherently enjoyable but rather is engaged in with the goal of improving performance

Teacher education has a distinct culture, compared to some of the other disciplines described above, that favors holistic experience over deliberate practice (Fadde & Jalaeian, 2019). As noted by Dunn & Shriner (1998):

> We do not normally think of teachers as engaging in 'practice' to improve their teaching skills. For most of us, the word 'practice" elicits images of repeated performances aimed at refining and perfecting some skill, usually a motor skill. Teachers do not practice, they 'teach.' (p. 647)

Due to these cultural differences, it may be difficult to fully translate deliberate practice to teacher education. For example, one of the defining characteristics of deliberate practice is that the process must be overseen, designed, and implemented by a coach or a mentor. It is speculated that after years of training in deliberate practice an individual may take over the monitoring and evaluation of practice role of a coach (Ericsson, 2008). A challenge posed by the field of teaching is that in-service teachers usually do not receive the level of coaching and mentoring deemed necessary to be considered practice in this context after the end of student teaching (Berliner, 2004). This presents a serious barrier to attaining expertise in teaching, as within other disciplines, the reliance on a mentor or coach for feedback and guidance is a crucial part of the culture of achieving expertise. While often lacking during professional teaching, and perhaps during clinical student teaching, such direct coaching is a defining feature of microteaching during teacher education.

Further, the learning activities that teachers and teacher candidates participate in while learning their craft do not automatically qualify as deliberate. Bronkhorst et al. (2014) sought to describe how deliberate practice occurred in clinical placements. They also sought to distinguish deliberate practice from other instructional practices while using Ericsson's 2008 model to define deliberate practice. Here deliberate practice includes the following four characteristics: 1) task with well-defined goal; 2) motivation to improve provided; 3) feedback given; and 4)

ample opportunities to improve and gradual refinement of behavior provided. Sixty-three teachers completed a digital log after teaching learning activities during their clinical placements. Of the 574 learning activities reported, only 63 activities met all four characteristics of deliberate practice (Bronkhorst et al., 2014). Notably, activities that contained all four characteristics were determined to yield the greatest learning outcomes for those participants. Additionally, teachers' motivations deviated from the standard motivation for deliberate practice. Traditionally, motivation consists of a drive for self-improvement. Within the sample, dissatisfaction with current abilities, finding meaning in the activities, and increasing pupil learning were the most frequent sources of motivation to pursue the learning activity.

Due to the nuances and distinct nature of teacher preparation, deliberate practice should not be viewed as the universal remedy to the challenges of the NGSS. However, examples have shown that there are instructional activities and models within teacher education where characteristics of deliberate practice may be applied (Bronkhorst et al., 2014; Dunn & Shriner, 1998; Fadde & Klein, 2010). Teacher educators may view deliberate practice as a way of approaching and structuring the normal activities used in teacher preparation. Teacher educators must negotiate new obligations in the climate of the NGSS to prepare future teachers for their roles as effective educators. They should afford pre-service teachers ample chances to experience science as a sense-making and knowledge-building endeavor, just as in-service teachers should do for students in their classrooms (Windschitl & Stroupe, 2017). This approach will allow them to practice and appreciate how to support student understanding of science through engagement with the NGSS and SEPs. Given the need to develop and refine the use of SEPs within science instruction deliberate practice may be used to help guide instructional activities such as microteaching during pre-service preparation.

Microteaching

To be prepared, effective teacher training requires the development of skills that aid them, as professional teachers, in constant reflection and the development of their teaching practice. Microteaching is an instructional activity that has been used to improve teaching and learning since the mid 1960's (Allen, 1966). This method offers prospective teachers an organized and supervised setting to gain the pedagogical skills that engage students in curriculum aligned to reform-based principles. This involves teaching through short, 10-15 minute, lessons or lesson segments using a specific pedagogical skill, in this case a SEP. This activity follows an iterative process of plan, teach, critique, reflect, revise and repeat that is consistent with the deliberate practice approach. However, this is not to overlook reported drawbacks of microteaching. Namely, that the experience does not authentically represent classroom teaching, and that participants express discomfort when beginning the experience (Bile, 2015; Ralph, 2014). Yet, there are several prospective advantages that microteaching may have towards overcoming challenges presented by the NGSS.

One of the noted benefits of microteaching is the opportunity to connect theory and practice (Bakir, 2014; Mergler & Tangen, 2010; Zhou, Xu & Martinovic, 2017). This provides a way to increase a teacher's practical as well as theoretical understanding of SEPs, which is especially important for teacher candidates. The implementation of three dimensional learning as outlined by the NGSS in school curricula is still unfolding. There is no guarantee that teacher candidates will have modeled for them, or teach, the reformed-based practices that they are taught in their methods coursework. Microteaching experiences before and during school-based clinical experiences provides a safe context for pre-service teachers to

explore implementing SEPs, receive feedback from a teacher educator and peers, and also learn from their peers' lessons.

A well-documented outcome of microteaching is its effect on teacher candidates' self-efficacy development across multiple disciplines (Aziz & Mamat, 2017; Bakir, 2014; Bile, 2015; Christian, 2017; Mergler & Tangen, 2010; Wyatt, 2015). Microteaching participants often express discomfort and awkwardness towards teaching their peers, and feel more nervous to teach to peers than pupils. However, after the experience, participants express an increased confidence in their teaching ability. One study looked at the development of teacher candidates' self-efficacy in a teaching methods course. They looked at fourteen different instructional strategies to teach methods, and through focus group interviews determined which strategies participants felt had the greatest impact on their instructional self-efficacy (Christian, 2017). Although they did not enjoy the strategy, participants expressed that through this modeling experience they recognized the benefit of making mistakes in a safe environment, believed the practice improved their instructional confidence, and felt their teaching improved by watching peers' lessons.

Further, some studies have investigated the implications of microteaching experiences on the ability to implement specific theories, skills, or methods within participants' instruction (Bakir, 2014; Fernandez, 2010; Zhou, Xu & Martinovic, 2017). Microteaching results in participants increasing their ability to grasp basic pedagogical skills (such as introducing a lesson, communicating expectations, and closing) and to teach more complicated domain-specific concepts and skills. Fernandez's (2010) study combined elements of Japanese lesson study and microteaching to determine what students can learn instructionally through this model. Lesson study has similar characteristics as microteaching but emphasizes continuous revision on a specific student learning outcome. The model borrows the simplified learning environment from microteaching. An interpretive case study with several phases of coding analysis on 18 candidates occurred in their initial education course. The experience occurred over four weeks, in which 6 groups of 3 teachers went through the cyclical process three times to teach mathematical reasoning through concepts such as fractals, traceable paths, Euler's formula, permutations, prisms and pyramids, and ellipses. Results indicated that candidates progressed from initially emphasizing teaching content in week one to incorporating process learning into their lessons by the end.

Microteaching provides an opportunity to address the use of deliberate practice by its ability to connect teacher candidates' experiences and practices of teaching SEPs. From its beginning, microteaching has been used to simulate the iterative process of classroom instruction (planning, implementation, evaluation and reflection) in a safe, controlled environment (Allen, 1966). Aspects of microteaching meet the seven characteristics of deliberate practice mentioned in table 1 (referring to Fadde & Jalaeian, 2019). It is characterized by the teaching of brief lessons incorporating different subcomponents related to inquiry (#1), to a small group of peers. This is done under supervision of a teacher educator (#5) and to peers with the use of objective data (video-taped lessons, rubrics, etc.) to provide immediate feedback for reflection (# 2 & #3). Fernandez (2010) provides an example of structuring microteaching as a repeated engagement for the reinforcement of skills and to address deficiencies through feedback and revision (#4 & #6). Studies on self-efficacy and critiques of the initial discomfort of microteaching seem to fit the final criteria (#7) (Bile, 2015; Ralph, 2014).

There is an opportunity within microteaching to apply characteristics of deliberate practice as defined by expertise studies to help develop teacher candidates' instruction of science aligned to the NGSS. Berliner (2004) draws

connection between experts' confidence and their performance level, and noted that experts' ability diminished if they were teaching a subject or in a context outside of their expertise. Applied to the novice level, this might indicate that teacher candidates' level of self-efficacy influences their mastery of certain instructional skills. Feldon (2007) sought to understand the inaccuracies expressed by experts when they are asked to describe a problem-solving process. He discovered that when prompting questions through structured knowledge elicitation researchers were able to discover a deeper understanding of how experts' pattern recognition and knowledge organization aided in problem solving. Again, applied to microteaching, eliciting knowledge from teacher candidates about their decision making process of teaching science may help to address specific deficiencies in their performance which need to be addressed in future practice activities. Another study revealed that microteaching was used to help participants gain technology pedagogical knowledge and begin progressing through a developmental model for technology adoption (Zhou, Xu, & Martinovic, 2017).

Conclusions and Implications

The NGSS redefines what constitutes successful science teaching and learning, specifically through engaging students in the sense-making process by developing evidence-based explanations. By modeling this, teachers ensure students are reflecting the regular activities undertaken by scientists and actually learning science. Although the NGSS demand higher-level science expertise by elementary teachers, several barriers exist to the implementation of the NGSS including: less time dedicated to science at the elementary levels resulting in less time to practice teaching and learning with SEPs, low science teaching self-efficacy of elementary teachers and teacher candidates, and inadequate theoretical and practical understandings of the three-dimensional framework. Opportunities exist within research on expertise and deliberate practice to aid in overcoming these barriers.

However expertise is defined, it is accepted that the process of attaining mastery takes years. We are not suggesting that teacher educators can make their teacher candidates experts within their initial preparation. Also, microteaching structured with characteristics of deliberate practice should not be viewed as a universal remedy for the challenges of the NGSS. However, the systematic process of deliberate practice aligned to structure microteaching has the potential to enrich the experience of novices to the NGSS. This may aid novices in their transition to advanced beginners, thereby accelerating their future success with implementation of the NGSS framework in the elementary classroom. We propose that connections between self-efficacy research, confidence studies related to expertise, and structured skill practice as well as knowledge elicitation may provide a context to study deliberate practice as a strategy to structure microteaching in teacher education. This research may contribute to the current dialogue in science education regarding supportive strategies for teachers and teacher candidates as they navigate the demands of the NGSS in their classrooms with their students.

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Teachers' Self-Efficacy and Technology Integration in K-12 Education: A Meta-Analysis
by
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Abstract
This meta-analysis examined studies on the relationship between teachers' self-efficacy and technology integration in K-12 education. A total of 14 studies in this meta-analysis with 3272 participants including 532 pre-service teachers and 2740 in-service teachers from Finland, Taiwan, U.S., Turkey, and Korea. Findings indicated that teachers' self-efficacy had a positive relationship with their technology integration in K-12 education (r = .32); however, the relationship between teachers' self-efficacy and their technology integration did not differ significantly in terms of population (i.e., pre-service teachers vs. in-service teachers), region (i.e., U.S. versus Finland, Taiwan, Turkey, and Korea), and sample size (n = 300). Implications for both pre-service and in-service teachers' professional development with self-efficacy and technology integration were provided.

One of the important skills for students in 21st century is the digital competence (Claro et al., 2018; Mossberger, Tolbert, & McNeal, 2007; Selwyn, 2017; Siddiq, Scherer, & Tondeur, 2016; Van Laar, van Deursen, van Dijk, & de Haan, 2017). Therefore, technology integration has become an important concern in education (Agyei & Voogt, 2011; Xie & Luthy, 2017). However, teachers with low-level and inappropriate uses of technology have been not adequate to meet 21st-century learners' needs (Ertmer & Ottenbreit-Leftwich, 2010). Thus, recent research focuses on the determinants of teachers' integration of technologies in classroom (Evans, 2017; Instefjord & Munthe, 2017; Kale, 2018; McCulloch, Hollebrands, Lee, Harrison, & Mutlu, 2018; Tondeur, Aesaert, Prestridge, & Consuegra, 2018; Vongkulluksn, Xie, & Bowman, 2018).

Teacher self-efficacy is an important factor for achieving success in the practice of technology integration in K-12 education (Kutluca & Ekici, 2010; Shashaani, 1993). Smarkola (2008) found that efficacy is regarded as the predictor of teachers' intentions and usage of technology in education. Teachers with low self-efficacy are afraid of technology innovations and may resist integrating technology in their teaching (Chou, Hsiao, Shen, & Chen, 2010; Holden & Rada, 2011). However, the role of teacher self-efficacy in technology integration has been remained uncertain, and there exists little meta-analysis related to the relationship between teachers' self-efficacy and technology integration in K-12 education.

Literature Review

One source of teacher self-efficacy is Bandura's social cognitive theory. Bandura (1997) defined self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p.3). Individuals with high self-efficacy believe that they have the ability, competence, and knowledge of strategies necessary to complete the tasks (Maehr, 1984). Self-efficacy is also a key concept in social learning theory which advocates having confidence in relevant areas (Pajares, 2002). Self-efficacy involves the regulation of

cognitive, emotional, behavioral, and social skills that are required to complete a task and apply the acquired knowledge and skills effectively to the situation (Yesilyurt, Ulas, & Akan, 2016). In addition to the regulation of multiple skills the individuals have, self-efficacy is also the belief in what the individuals can do with these skills in a particular situation (Bandura, 1997).

Teacher self-efficacy refers to teachers' capability to impart knowledge and affect students' behavior, even those who are unmotivated or challenged (Guskey & Passaro, 1994; Tschannen-Moran & McMaster, 2009). It is in the orientation of what teachers can do rather than what teachers will do (Bong & Skaalvik, 2003; Klassen & Chiu, 2010). In this sense, teacher self-efficacy predicts teachers' beliefs about what they can do rather than what they will do to integrate technology in the classroom. Besides, teacher self-efficacy, in particular for preservice teachers, is dynamic and cyclical in nature, and it changes according to teachers' actual teaching behavior (Fox, 2001; Tschannen-Moran & McMaster, 2009). Studies found that pre-service teachers' self-efficacy tend to change during the preservice period of learning to teach (Tschannen-Moran & McMaster, 2009; Woolfolk Hoy & Burke-Spero, 2005).

Teacher self-efficacy is related to teaching effectiveness, such as the use of computer and instructional tools (Goddard, Woolfolk Hoy, & Hoy, 2004). Studies found that teachers' self-efficacy influences their teaching strategies (Tschannen-Moran & McMaster, 2009) and their attitudes toward innovation and change (Joo, Park, & Lim, 2018). Thus, investigations into the relationship between teachers' self-efficacy and technology integration may shed light on innovative teaching strategies and effective teaching.

Technology integration is defined as "the sustainable and persistent change in the social system of K-12 schools caused by the adoption of technology to help students construct knowledge (e.g., research and analyze information to solve problems)" (Belland, 2009, p.345). Technology integration also refers to the integration of technology in the curriculum which includes the integration of technology as a tool to improve students' learning in content areas or multidisciplinary settings (ISTE, 2008).

During the 1980s, meta-analytic studies agreed that computer-based instruction was in a positive relationship with students' learning (Kulik, 2003). Since the early 1990s, the U.S. federal government, districts, and schools have heavily invested in instructional technology (Miranda & Russell, 2011), and technology has been increasingly used in the U.S. classrooms (Vongkulluksn, Xie, & Bowman, 2018). One-to-one laptop programs where every student has access to at least one digital device have been extended in multiple states (Zheng, Warschauer, Lin, & Chang, 2016). However, increasing access to digital devices is not equal to the higher quality of technology integration (Ertmer & Ottenbreit-Leftwich, 2010). The power of technology to enhance learning lies in what teachers do with it (Rogers, 2000). However, current studies found that high levels of effective technology use have not been achieved either in the U.S. or internationally (Mueller, Wood, Willoughby, Ross, & Specht, 2008; Tweed, 2013). Thus, researchers have been exploring the determinants of teachers' integration of technologies in the classroom (Drent & Meelissen, 2008; Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur, & Sendurur, 2012; Gil-Flores, Rodriguez-Santero, & Torres-Gordillo, 2017; Makki, O'Neal, Cotton, & Rickard, 2018).

Teacher self-efficacy functions as the predictor for technology integration in education (Smarkola, 2008). Compeau, Higgins, and Huff (1999) found a significant positive relationship between self-efficacy and the actual use of computers in the classroom, and they also claimed that computer use increased as self-efficacy enhanced. On the other hand, teachers with low self-efficacy are afraid of technology

integration and may resist integrating technology in classroom practices (Chou, Hsiao, Shen, & Chen, 2010; Holden & Rada, 2011). However, there is a paucity of meta-analysis to explore the association between teachers' self-efficacy and technology integration in K-12 education.

Purpose of the Study

The purpose of this study was to validate the relationship between teachers' self-efficacy and technology integration in K-12 education. The following are the research questions:

(1) What is the strength of the relationship between teachers' self-efficacy and technology integration in K-12 education?

(2) Does the increase of self-efficacy increase teachers' integration of technology in K-12 education?

(3) Does the relationship between self-efficacy and technology integration in K-12 education differ for pre-service and in-service teachers?

(4) Does the relationship between self-efficacy and technology integration in K-12 education differ among diverse regions in the world?

(5) Does the relationship between self-efficacy and technology integration in K-12 education differ in terms of sample size?

Methods

This meta-analysis used the procedures outlined by Lipsey and Wilson (2001): (1) creating a reason for the meta-analysis; (2) searching all possible studies; (3) excluding the studies to keep only those that met the inclusion criteria and with usable data; (4) abstracting data based on a code sheet; (5) conducting statistical analyses (e.g., Q test, I^2, total effect size r, etc.). RStudio was used for the effect size calculations and statistical analyses.

To be included in this meta-analysis, studies had to meet the following inclusion criteria: (1) studies included the measure of teacher self-efficacy and the outcome of technology integration; (2) studies were conducted in K-12 school context; (3) studies were written in English; (4) studies were conducted with quantitative methods; (5) studies were published between 1985 and 2019; (7) studies reported usable data that can be used for meta-analysis; (8) both published and unpublished studies were included, such as peer-reviewed journal articles, dissertations, and conference proceedings, presentations, and posters.

Literature Search and Study Selection

To conduct this meta-analysis, scholarly databases were searched including ERIC, ProQuest, Google Scholar, and ScienceDirect with a combination of keywords "teacher self-efficacy" and "technology integration". The synonyms of the keywords were also used to align with database terms (i.e., self-efficacy, teacher self-efficacy, academic self-efficacy, or computer self-efficacy, and technology integration, integration of technology, acceptance of technology, use of technology, attitude toward technology integration, or technology integration practice). Besides, a manual search was also conducted by examining related reference lists. Two reviewers independently searched the articles based on the inclusion criteria.

Kappa score k was used to quantify the level of disagreement between the two reviewers. Kappa score k is a chance-corrected proportional index and its value is between +1 (perfect agreement) and -1 (complete disagreement) (Tang, Eslick, Nowson, Smith, & Bensoussan, 2007). After removing the duplicates and reading titles and abstracts, 143 studies were selected in the initial 301 searched studies. The two reviewers kept 34 studies by excluding 109 studies based on the discussions and rechecking and the Kappa score was .33. After reading the full-text,

14 studies were selected by excluding 20 studies, because nine studies did not measure teachers' self-efficacy as the predictor, six studies did not measure technology integration as the outcome, three studies were not conducted in the K-12 school context, and two studies were duplicate. Finally, 14 studies with usable data were included in this meta-analysis with the Kappa score of .90.

Data Abstraction

Data were abstracted by two reviewers independently from the studies that met the inclusion criteria. Information abstracted included author, publication year, sample size (N), effect size (r), population, and region. Kappa score k was also used to quantify the level of disagreements between the two reviewers for data abstraction and k = .90. Disagreements were solved by consensus of the two reviewers. Table 1 presents the data abstracted from the studies included in this meta-analysis.

Table 1. Data Abstracted in the Meta-Analysis

Author (year)	N	Effect size r	Population	Region
Igbaria and Iivari (1995)	450	.15	In-service	Finland
Lee and Tsai (2010)	558	.48	In-service	Taiwan
Pan (2010)	243	.30	In-service	US
Haight (2011)	252	.50	In-service	US
Holden and Rada (2011)	99	.36	In-service	US
Perkmen and Pamuk (2011)	123	.19	Pre-service	US
Hale (2013)	215	.24	In-service	US
Tweed (2013)	124	.19	In-service	US
Ellis (2014)	168	-.24	In-service	US
Oshiro (2014)	113	.45	In-service	US
Kavanoz, Yüksel, and Özcan (2015)	113	.54	Pre-service	Turkey
Manglicmot (2015)	454	.57	In-service	US
Hickson (2016)	64	.03	In-service	US
Joo, Park, and Lim (2018)	296	.45	Pre-service	Korea

RStudio was used to conduct this meta-analysis. Instead of a fixed-effects model that assumes homogeneity of population effects, a random-effects model was preferred because it assumes heterogeneity of population effects (Lipsey & Wilson, 2001). The effect size was calculated using the Pearson correlation coefficient r. According to Cohen (1977,1988), the magnitude of effect size r is classified as the following: small (r = .1), moderate (r = .3), and large (r = .5). Cochran's Q test was conducted to assess the heterogeneity, and a higher p-value (i.e., .10 rather than .05) was used as a threshold (The Cochrane Collaboration, 2011). Complementary to Q test, I^2 statistic was also calculated in order to examine the overall variability of the included studies in the meta-analysis, 50% was used as the cut-off for heterogeneity, and 75% would mean high heterogeneity (Higgins & Thompson, 2002; Higgins, Thompson, Deeks, & Altman, 2003; Huedo-Medina, Sánchez-Meca, Marín-Martínez, & Botella, 2006). Tests for subgroup analysis differences were also conducted with the significance level of .05.

Results

A total of 14 studies included in this meta-analysis and covered 3272 participants including 532 pre-service teachers and 2740 in-service teachers from Finland, Taiwan, U.S., Turkey, and Korea. In Figure 1, Cochran's Q test was significant, Q(13) = 169.78, p < .01, which indicates that results of the included studies differed not only by sampling error. The value of I^2 was 92% indicating the existence of a substantial proportion of variability across the included studies. Thus, the random-effects model was adopted in the statistical analysis.

Research Question 1 and 2

In Figure 1, the overall effect size was $r = .32$ (CI: .20, .43). It indicates that the overall effect size was moderate, there existed a positive relationship between teachers' self-efficacy and technology integration in K-12 education, and with the increase of teachers' self-efficacy, technology integration tended to increase moderately.

Study	Total	Correlation	COR	95%-CI	Weight
Igbaria and Iivari (1995)	450		0.15	[0.06; 0.24]	7.6%
Lee and Tsai (2010)	558		0.48	[0.42; 0.55]	7.7%
Pan (2010)	243		0.30	[0.18; 0.41]	7.4%
Haight (2011)	252		0.50	[0.40; 0.59]	7.4%
Holden and Rada (2011)	99		0.36	[0.18; 0.52]	6.7%
Perkmen and Pamuk (2011)	123		0.19	[0.01; 0.36]	6.9%
Hale (2013)	215		0.24	[0.11; 0.36]	7.3%
Tweed (2013)	124		0.19	[0.02; 0.36]	6.9%
Ellis (2014)	168		-0.24	[-0.38; -0.09]	7.2%
Oshiro (2014)	113		0.45	[0.28; 0.58]	6.8%
Kavanoz, Yuksel, and Özcan (2015)	113		0.54	[0.40; 0.66]	6.8%
Manglicmot (2015)	454		0.57	[0.50; 0.63]	7.6%
Hickson (2016)	64		0.03	[-0.22; 0.27]	6.1%
Joo, Park, and Lim (2018)	296		0.45	[0.35; 0.53]	7.5%
Random effects model	**3272**		**0.32**	**[0.20; 0.43]**	**100.0%**

Heterogeneity: $I^2 = 92\%$, $\chi^2_{13} = 169.78$ ($p < 0.01$)

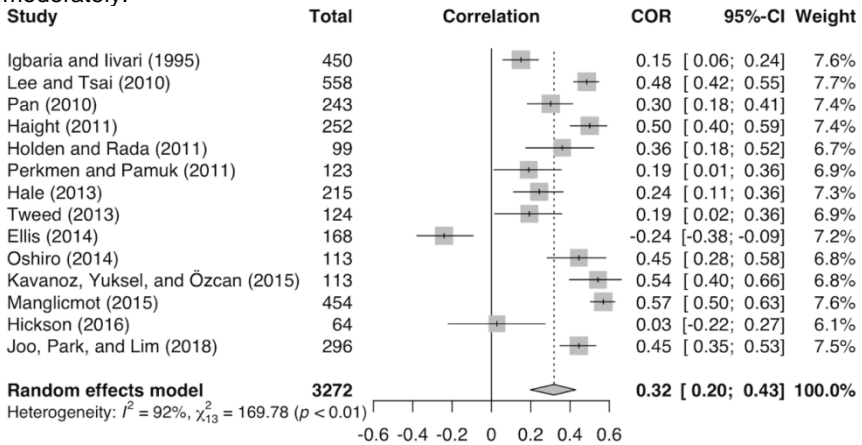-0.6 -0.4 -0.2 0 0.2 0.4 0.6

Figure 1. Forest Plot of Included Studies

The population included pre-service and in-service teachers in K-12 education. In the groups of in-service and pre-service teachers, the value of I^2 was 94% and 82% respectively, which indicates the existence of a substantial proportion of variability across the studies in each group. Thus, the random-effects model was applied to analyze the statistics for both groups.

In the group of in-service teachers, the total effect size was $r = .29$ (CI: .15, .43). The total effect size of the group of in-service teachers was low, indicating that there existed a positive relationship between in-service teachers' self-efficacy and their technology integration in K-12 education, and with the increase of in-service teachers' self-efficacy, their technology integration tended to increase slightly. In the group of pre-service teachers, the total effect size was $r = .40$ (CI: .21, .57). The total effect size of the group of pre-service teachers was moderate, indicating that there existed a positive relationship between pre-service teachers' self-efficacy and their technology integration in K-12 education, and pre-service teachers tended to integrate technology into teaching moderately with the increase of their self-efficacy. However, there was no statistically significant difference between in-service and preservice teachers in terms of the relationship between teachers' self-efficacy and technology integration (χ^2 (1) = .86, $p = .35$).

In the subgroup analysis of region (i.e., Finland, Taiwan, U.S., Turkey, and Korea). U.S. was selected to serve as the standard for grouping because 71% ($n = 10$) of the included studies were conducted in the U.S.

The value of I^2 was 93% in both the groups of non-U.S. and U.S., which indicates the existence of a substantial proportion of variability across the studies in each group. Thus, the random-effects model was adopted to analyze the statistics for both groups.

In the group of non-U.S. regions (i.e., Finland, Taiwan, Turkey, and Korea), the total effect size was $r = .41$ (CI: .22, .57), which shows that the total effect size was moderate, there was a positive relationship between teachers' self-efficacy and their technology integration, and with the increase of self-efficacy, teachers tended to

increase their technology integration moderately in K-12 education in Finland, Taiwan, Turkey, and Korea. In the group of U.S., the total effect size was $r = .28$ (CI: .11, .43), which indicates that the total effect size was low, there existed a positive relationship between teachers' self-efficacy and their technology integration, and with the increase of their self-efficacy, teachers tended to integrate technology in K-12 education slightly in the U.S. However, the relationship between teachers' self-efficacy and technology integration did not differ significantly between non-U.S. regions and U.S. (χ^2 (1) = 1.20, $p = .27$).

Research Question 5

In the subgroup analysis of sample size, a sample size of 300 was chosen to serve as the standard for grouping because the sample size of 300 is about the medium across all the included studies.

For the group with a sample size of more than 300 (including 300), the value of I^2 was 97%, and I^2 was 90% in the group the sample size of more than 300, which indicates the existence of a substantial proportion of variability across the studies in each group. Thus, the random-effects model was used to analyze the statistics for both groups.

In the group with a sample size of more than 300 (including 300), the total effect size was $r = .42$ (CI: .16, .62), which indicates that the total effect size was moderate, there existed a positive relationship between teachers' self-efficacy and their technology integration with the sample size of more than 300, and with the increase of their self-efficacy, teachers' technology integration had the tendency to increase moderately in K-12 education. In the group with a sample size of less than 300, the total effect size was $r = .29$ (CI: .15, .42). The results show that the total effect size was low, there was a positive relationship between teachers' self-efficacy and their technology integration in K-12 education with the sample size of less than 300, and teachers tended to integrate technology into teaching slightly with the increase of their self-efficacy. However, the relationship between teachers' self-efficacy and technology integration did not differ significantly between the group with the sample size of more than 300 and the group with the sample size of less than 300 (χ^2 (1) = .81, $p = .37$).

Publication Bias

Publication bias was assessed in two ways. First, the funnel plot (Figure 2) was produced which provided a visual indicator of publication bias. The symmetrical funnel formed in the scatterplot indicates there is no publication bias; the asymmetrical plot indicates there is potential bias, though other factors, such as true heterogeneity and chance, can explain some apparent bias (Egger, Smith, Schneider, & Minder, 1997). Egger's regression test (Egger et al., 1997) was also conducted to further examine publication bias. Egger's test resulted in a coefficient of .63, $p > .05$, thus, it indicates that publication bias was not a concern for this meta-analysis.
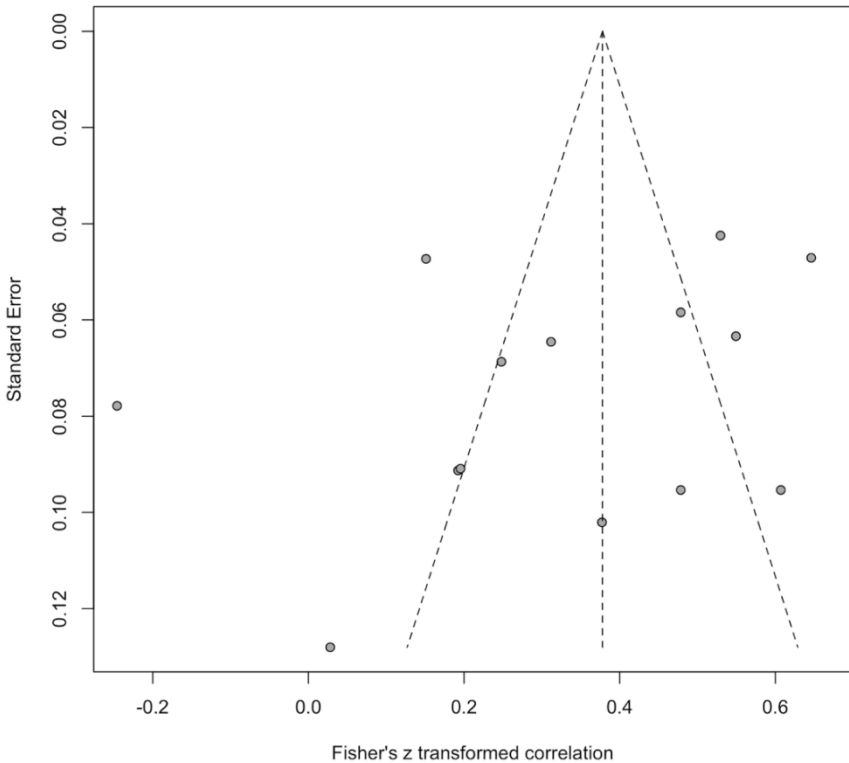
Figure 2. Funnel Plot

Discussion

The overall effect size of all the included studies indicates a positive relationship between teachers' self-efficacy and technology integration in K-12 education. This finding echoes the findings of previous research that teacher self-efficacy is the predictor of technology integration in education, and that teachers with low self-efficacy are afraid of using technology in classrooms (Chou, Hsiao, Shen, & Chen, 2010; Compeau, Higgins, & Huff, 1999; Holden & Rada, 2011; Smarkola, 2008). Teachers with high self-efficacy may have beliefs that they have the ability to employ technology in their own teaching practices. Since teacher self-efficacy focuses on what teacher perceive they can do rather than what teacher will do (Bong & Skaalvik, 2003; Klassen & Chiu, 2010), the results imply that teachers with high self-efficacy believe that they can integrate technology in their future teaching; however, it is not necessarily true that they will integrate technology in their future teaching.

Pre-Service and In-Service Teachers' Self-Efficacy and Technology Integration

The results indicate that both pre-service and in-service teachers' self-efficacy positively related to technology integration in K-12 education. Although the relationship between teachers' self-efficacy and technology integration was not statistically significant between pre-service and in-service teachers, professional development based on characteristics of pre-service and in-service teachers are needed. Teacher self-efficacy is dynamic and cyclical in nature (Fox, 2001; Tschannen-Moran & McMaster, 2009), especially for pre-service teachers in their pre-service period of learning (Tschannen-Moran & McMaster, 2009; Woolfolk Hoy &

Burke-Spero, 2005). In this sense, if teacher education programs provide opportunities for pre-service teachers to learn how to integrate technology into teaching effectively, there are probabilities that the pre-service teachers will believe that they have the capabilities to integrate technology into teaching practices, and will continue to integrate technology into their future teaching.

Additionally, novice teachers still need opportunities to develop their teacher self-efficacy in their initial stage of the teaching profession, and in this way, they probably tend to integrate technology in teaching practices. Besides, administrative support from schools or school districts should deal with factors such as limited technology resources and e-safety issues (Pan, 2010), and provide in-service teachers with professional development, professional learning communities, curriculum design, and mentoring related to technology integration (Evans, 2017).

Teachers' Self-Efficacy and Technology Integration in Diverse Regions

Although the results indicate that there was no statistically significant difference between U.S. and non-U.S. regions (i.e., Finland, Taiwan, Turkey, and Korea) in terms of the relationship between teachers' self-efficacy and technology integration in K-12 teaching, researchers are still recommended to compare it internationally and explore the reasons behind it by using international data. Because digital competence is one of the most important skills in 21st century for students all over the world (Claro, et al., 2018; Mossberger, Tolbert, & McNeal, 2007; Selwyn, 2017; Siddiq, Scherer, & Tondeur, 2016), and it is necessary to explore the effectiveness of technology integration globally to provide implications for effective technology integration and the development of students' digital competence in the digital age.

Limitations

First, since this meta-analysis needed to calculate the effect size, only quantitative studies were included, although qualitative studies have a great deal of knowledge for any research field. Especially, studies of teachers' self-efficacy and technology integration were conducted with qualitative methods. Thus, future reviews or syntheses should consider those qualitative studies. In this way, the voices of qualitative studies can be heard, and their findings can enrich the study in the field.

Second, this meta-analysis did not distinguish the specificity of teacher self-efficacy (e.g., computer self-efficacy, self-efficacy perceptions, etc.), technology integration (e.g., computer usage, acceptance of technology integration, technology integration performance, etc.), and levels of K-12 education (e.g., pre-school, kindergarten, elementary, secondary, etc.). Future studies may explore the relationship between teachers' self-efficacy and technology integration with specificity of the variables or different educational contexts.

Third, since only 14 studies were analyzed in this meta-analysis, the results may limit its power for a convincing explanation. Thus, future studies may include more studies from diverse regions and test to what extent the effect size will be stable if possible.

Fourth, although this meta-analysis contributed to the research in the relationship of teachers' self-efficacy and technology integration in K-12 education, it did not address how teachers' self-efficacy impacts the quality of technology integration. Therefore, future studies can further explore the relationship between teachers' self-efficacy and the quality of their technology integration in education.

Conclusions

This meta-analysis of 14 studies yielded several important findings. Teacher self-efficacy had a positive relationship with their technology integration, teachers with high self-efficacy tended to integrate technology in K-12 education, but the relationship between teachers' self-efficacy and their technology integration did not differ significantly in terms of population (i.e., pre-service teachers vs. in-service teachers), region (i.e., U.S. versus Finland, Taiwan, Turkey, and Korea), and sample size (n = 300). The findings trigger further research on the relationship between teachers' self-efficacy and their technology integration in K-12 education to enlighten the components of success and effective teaching.

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PARTICIPATE! An Urban Civic Education Curriculum
Promotes Active Citizenship
by
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Abstract
The Illinois General Assembly passed Public Act 099-0434 in August 2015, requiring that all high school students complete a semester long civics course in order to graduate from an Illinois High School. With the passage of civic education legislation, Illinois becomes the 39th state to require its students to study civics in order to graduate. What makes Public Act 099-0434 unique is that it is the first education policy in the state to require a particular classroom pedagogy. The following study revisits the history and philosophy of citizenship and civics, and secondly and most practically, examines the resurgence of civic education in the third largest school district in the country, Chicago Public Schools, through the experiences of teachers using Participate! This study concludes with a discussion about current urban civic education practices and future research aspirations.

The Illinois General Assembly passed Public Act 099-0434 in August 2015, requiring that all high school students complete a semester long civics course in order to graduate from an Illinois High School. With the passage of civic education legislation, Illinois became the 39th state to require its students to study civics in order to graduate. What makes Public Act 099-0434 unique is that it is the first education policy in the state to require a particular classroom pedagogy. The General Assembly hoped to steer clear of traditional civic education course material that students found pedantic and uninspiring. The required pedagogies are: Service-learning; Discussion of contemporary and controversial issues; Simulations; and Instruction in government and government processes.

Two years prior to the new law, Chicago Public Schools (CPS) rolled out a collaboratively-designed civic education curriculum to a limited number of schools. This curriculum ultimately meshed well with the new law, offering opportunities for teachers to facilitate simulation, implement service-learning, and support controversial discussions in addition to providing content in government and government processes. With the statewide mandate, CPS revised its curriculum and *Participate!* was launched. *Participate!* is designed to provide teachers with high quality, flexible curriculum with an emphasis on active student engagement. *Participate!* aims to develop the knowledge, skills, habits, and dispositions for students to become better citizens.

Re-booting civic education as participation, though unique, is not entirely new; to be certain, civic education has a long history in the United States. Thomas Jefferson at the turn of the 18th century argued that the central purpose of the nation's schools was civic in nature; to prepare young people for active participation in democracy. Similarly, American philosopher and educator John Dewey in *Democracy and Education* (1916) suggested that democracy must be reborn in each new generation and that schools should prepare young people for the challenges of democracy.

But civic education has not always played such a central role in curriculum as the nation's schools have historically had to negotiate between competing

interests, including demands from industry leaders to align education to work or political leaders' various demands and claims on education that have more recently driven standardized curriculum and assessments. Implicit as well are the no less strident demands placed upon school leaders in the context of dwindling public resources, shifting societal demographics, and the ceaseless and frequent criticism of public education. These phenomena number but a few of the challenges arriving at the schoolhouse door. As schools have negotiated these complex phenomena, the presence and nature of civic education has ebbed and flowed in relation to local contexts, regional trends, and national crises.

The current moment is no different. Once again, civic education is being touted as necessary to address social ills. Given this backdrop, the following study revisits the history and philosophy of citizenship and civics, and secondly and most practically, examines the resurgence of civic education in the third largest school district in the country through the experiences of teachers using *Participate!* This study concludes with a discussion about current urban civic education practices and future research aspirations.

Citizenship education has a remarkable history in the American context. It is instructive to consider the aims, means and ends that Dewey (1916) articulated, along with the idea that education should serve to create model citizens. It is also helpful to consider how the meaning of citizenship has changed, thereby influencing policy frames, education reforms, and curriculum. Why and how has the notion of citizenship changed? How have those evolving ideas been reflected in classroom instruction? Much may be gained as well in our contemporary context by better understanding the manner in which civics as a curriculum is experienced by the teachers and the students.

But first let's consider the different eras in which civics has been offered using a theoretical curricular lens that we will term critical civics. To do critical civics, the authors of this paper acknowledge the foundational work of Dewey (1916) in *Democracy and education: An introduction to the philosophy of education,* and bind that monumental contribution with the more contemporary work of James Banks (2017) over one hundred years later in *Citizenship education and global migration: Implications for theory, research, and teaching*. These works bracket a century of educational philosophy and provide excellent demarcation points for imagining and reimagining civic education as a formative experience for citizenship and nation building. Next, we draw upon an assortment of germinal texts. Our aim herein is to underscore the shifting definition(s) and meaning(s) attributable to citizenship and civic education: Herbert M. Kliebard, (2004). *The Struggle for the American Curriculum*; Roger Smith, (1997). *Civic Ideals: Conflicting visions of citizenship in US History;* Ronald W. Evans, (2004). *The social studies wars: What should we teach the children?*; Joel Westheimer, (2015). *What kind of citizen? Educating our children for the common good*.

Each text provides essential background of civic education history and illuminates the tensions created by education reform efforts. Especially pertinent when we consider the curriculum struggles past are the efforts to implement civics during various periods of contested curriculum reform, including, for example, the "heyday" of the progressive education era and its efforts toward Social Meliorism, as outlined by Kliebard.

Noteworthy is the progression in our own thinking as authors, how "the struggle for the American curriculum" and "conflicting visions of citizenship in US History" relate perfectly to Westheimer's contemporary critical inquiry: "What kind of citizen" ought we develop? This naturally joins with Evan's essential question "what should we teach the children?" Definitions, classroom practices, and themes

revolving around social identity formation are not trivial matters! *Participate!* attempts to answer these questions and aims, as a formative curricula, to support problem-based methods, project-based learning, and community engagement opportunities, that address the urgent problems of our time.

If we as educators and curricularists are to address the problems and challenges of our own "era" intentionally, we need to be better informed in how the construction of divergent curricular strands (critical to Evans' contention) emerge and continue to emerge. Given the different struggles over curriculum (Kliebard, 2004), and the general arguments over the meaning(s) behind civic education, we welcome the scholarly engagement that take these matters up in a serious and generative way. We begin then with *Civic Ideals* to better understand the meaning(s) of citizenship and civic education across different eras of American education, evolving alongside the growth and maturation of the country itself.

During the Jeffersonian Era, citizenship was imagined to be a societal good acquired through education. Jefferson was incensed with the idea of inherited privilege and, like other philosophers and rabble rousers of the American Revolutionary Period who sought to cast off the vestiges of monarchism, gave strong sentiment to a general education for all, including women. He essentially fought for much of his life after the revolution and the founding of a new country to ensure a sweeping role for the new government: to provide education for free to those who, through their demonstrated achievement, would merit such a reward. Given the generally assumed privilege of station afforded to white males, Jefferson hopefully struggled with the contradiction. Yet he was not immune to this, his otherwise self-serving latitude, nor was he unaware that not all were free or beneficiary (at this time) to his otherwise radical proposal. He rather relentlessly advocated for a people's government that would provide three years of general education with the end of citizen-leadership. His was essentially an aim for a democratic meritocracy where the best and brightest, naturally like him, would receive continued subsidy and hence go on to fulfill their station in governing the young country.

Citizenship education in the post-Revolutionary period (1776-1830), much to the chagrin of Jefferson, the other presidents, and one Mary Wollstonecraft (an early feminist who advocated like Jefferson for co-education), was not embraced as a national agenda, although it served one in each state and local community. The general form of education, where it was available and desired by the constituency, took hold as a result of local initiatives and did, according to Smith, help to build a common culture and national identity. Unlike the United Kingdom where the upper class feared education of "the masses" and hence confirmed private education as the norm, Smith argues that education in the United States would serve the teeming multitudes, those not born of aristocratic stock, toward enfranchisement and liberty.

In the Jeffersonian Era assumed was an "ascriptive" citizenship where "the basic purpose of education should be to form the sort of moral character . . . needed for a republican citizenry to be truly virtuous" (Smith, 1997, p. 189). The Jacksonian Era, as Horace Mann and other Unitarian Ministers (who were likewise German university-educated) would subscribe, proposed to create a space where rich and poor alike would commingle and learn together, subsequently recognizing no class distinction(s). As Jefferson and fellow patriot Benjamin Rush had long championed, education was the vehicle for citizenship, a citizenship that would allow for effective participation in and an upholding of a republican form of government. During the Jacksonian Era, the Common Man emerged by way of the process of Common School schooling and citizenship subsequently meant independence.

Smith in his text draws from the proclamation of an Illinois superintendent in 1862 that "the chief end is to make good citizens. Not to make precocious scholars .

. . not to impart the secret of imparting wealth . . . not to qualify directly for professional success . . . but simply to make good citizens" (Smith, 1997, p. 219). Smith also warned, however, that revisionist critics had different impressions of this vision, arguing that in practice citizenship education had a primary goal to prepare workers for the new factory system in growing urban areas (Smith, 1997, p. 220).

As previously noted, citizenship education could mean teaching toward a classless society or alternately for the children of immigrants to become obedient workers. Many years after Jefferson and Jackson there continued to be different meanings behind just what citizenship would turn out to be in the ever expanding America. At that time pedagogues from the more prestigious higher education institutions were busily philosophizing about just what education should be in a republican democracy with deeply contesting undercurrents being formed between their ideas of curriculum and the different tones of that curriculum in public schools across America. Not least of which of these tones were those played by adherents to Liberal Humanism whose affectation for a traditional curriculum based on knowledge of the ages and perennial great books conflicted with calls for a more vocational approach. Indeed, demographics for the nation were changing, especially with the emigre taking up places in the labor force. Liberal humanism seemed out of step with industrial demands.

Educational philosophers and budding curricularists responded. Reflecting a felt need for the democratization of the country, three different, progressive curricular strands emerged, standing in contrast to the preceding traditional one. They began to gain momentum during what came to be known as the Progressive Era. Developmentalism, Social Efficiency, and Social Meliorism characterize the complex efforts by progressive curriculum theorists to reform education with different aims, means and ends in mind. Developmentalism placed the child in the center of the educational enterprise, moving away from subject-centered curriculum into learning by doing and inspiring the attention of pedagogical progressives to the imagined developmental stages that a student goes through in acquiring knowledge and, more importantly, *being ready* to acquire knowledge. Social Efficiency was attributed to the efforts of administrative progressives, who became increasingly concerned with eliminating waste through efficiencies, or in other words, breaking up tasks into ever smaller parts for teachers to impart to their students. Social Efficiency in most ways sought to prepare students to fit into predetermined places in society including certain civic obligations to their communities. In stark contrast, radical educators in the Social Meliorist movement, led by left progressives, aspired to and leaned toward deliberative democracy. They would argue that education should build knowledge with the intent to change society. A curriculum focused on alleviating (or ameliorating, hence the name meliorism) social problems was their aim.

While different in spirit, each of the strands were utopian in nature; the end was a better society. One envisioned a society wherein individuals would develop and grow through the nurturing of their talents and proclivities, a second sought a more efficient society, and the third a more just society with the ability to shape it in new, novel ways. Ironically, Liberal Humanism as a curricular theory, though on the wane during the Progressive Era, proved rather resilient and continued to play a role in curriculum decision-making during the post-war period.

Citizenship education might well have played a role in the Liberal Humanism tradition, if only by the notion that gaining traditional, essential knowledge of the ages would lead one to impart or develop a philosophically benevolent and expansive view of the good society. We will argue, however, that the new approach to citizenship education, civic education, as embodied in the *Participate!* curriculum, reflects and draws upon the aforementioned curricular theories (Developmentalism,

Social Efficiency, Social Meliorism) that gained credulity primarily during the Progressive Era.

The 20th century in American public education, when viewed from the Jeffersonian Era perspective of preparation for democracy, can be seen as an ebb and flow between unum and pluribus (Butts, 1989) and liberal and republican ideologies. The unum/pluribus dichotomy infers a cultural tension, a struggle over the narrative of American history. Competing liberal and republican democratic ideologies, however, suggest a political tension. Liberals preference individual rights, self-sufficiency and limited government. Small 'r' republicans are more inclined to value communitarianism, enlightened participation, self-sacrifice, and pursuit of the common good. Indeed, the debate within the field of civic education has reflected this conflict as well. Both cultural and political tensions have been ever present in American history and have heavily influenced how we understand citizenship and how we have educated our children toward those understandings of citizenship.

As the nation faced specific challenges and/or changing circumstances, civic education curriculum theory and practice tended to adjust to meet the perceived needs of the nation. At the turn of the 20th century, the nation was rapidly urbanizing, industrializing, and receiving vast new waves of immigrants. An inordinate amount of pressure was placed on schools to both assimilate new arrivals culturally and prepare them economically for the emergent capitalist-industrialist economy in need of urban workers. Civic education at that time reflected a strong impulse toward unum, aggressively Americanizing and assimilating new immigrants, developing traditional patriotic values, and attempting to inculcate students with a single, nationalist narrative of the American experience. However, as the Great Depression and subsequent New Deal approached, strains of civic education began to emerge in the Progressive tradition that leaned more toward pluribus. Students were asked to consider the problems of democracy and participate in their solutions, engage in critical thinking, and develop a sense of public spiritedness. At this time, social studies was emerging as a discipline with civics as a discreet curriculum. Important impulses encouraged students to consider multiple perspectives and develop critical thought (Crabtree, Dunn & Nash, 1997).

As the nation moved toward World War II and the subsequent Cold War, however, the nation along with civic education practices pivot back to a more traditionally patriotic form of civic education in order to build unity around a national narrative that perceived the United States as a leader among nations. By the 1960s this emphasis became too restrictive and social studies and civic education began once again to expand toward diverse perspectives of the country and its standing in the world. The discipline of civic education experienced a return to critical thinking, multicultural perspectives, and active engagement in the problems of the time. As 1970s drew to a close, however, progressive voices in social studies education were met with an onslaught of criticism from conservatives who argued that the "new" and "newer" social studies waves represented dangerous turns toward liberal humanism, functionally a replacement for the dangers of communism of the 1950s (Evans, 2011). The last 20 years of the 20th century then witnessed the emergence of neoliberal and neoconservative ideologies that generated a marketplace orientation for public education with a focus on standards and standardization, school choice initiatives, academic excellence, and a focus on literacy and numeracy. Sleeter (2008) argues that this period ushered in the *No Child Left Behind Act* (2002) legislation and its concomitant narrowing of curriculum. Social studies in general and civic education in particular were, in many school districts, relegated to minor, fairly unimportant roles in the curriculum. At best, teachers committed to civic education now had to navigate emerging standards that did not prioritize democratic, multi-

valent classroom practices, in order to introduce civics concepts and content. In fact, civic and non-profit educational organizations began, in the 1990s, to fill a vacuum left by the inattention to civic education. Quigley (1999) notes that civic education in schools reflected oases of high quality and engaging practice in a desert bereft of support for quality and relevant civic engagement opportunities.

Civic education practice experiences a quiet resurgence in the early 21st century as states were encouraged to develop strategies to revisit the civic mission and purpose of public education. The renaissance was bolstered by national and state civic groups (Carnegie Corporation of New York and the Illinois Civic Mission Coalition, for example) along with non-profit civic education organizations like Constitutional Rights Foundation Chicago and Mikva Challenge in Illinois. By 2015, most states had policies and practices on the books requiring courses in government and civics at middle and high schools and/or assessments for graduation. Arizona, for example, requires that students pass the US citizenship exam while Tennessee requires that students complete a project-based civic assessment (T.C.A. § 49-6-1028) through which students demonstrate an understanding of civics. Illinois came late to the civic education table, first requiring a civics course of its public schools in 2015. Until that time, an Illinois student could graduate high school without having taken or completed a course in government or civics. Illinois then required only a course in World Studies, American History, and a single elective.

Dreams of Citizenship

Banks (2017) draws a useful distinction between citizenship as status and citizenship as identity in his analysis of legal citizenship attainment through American history. Banks argues that notions of citizenship were historically closely bound to a set of cultural and political assumptions that conformed to the white majority: a commitment to the rule of law, a belief in individualism, self-sufficiency, Christian beliefs, and English language skills. Individuals who stood outside that narrow value system were often regarded as "posing a threat to America's democratic experiment" (p. 69). Often these values were used to restrict citizenship status to certain groups either explicitly or implicitly based on race, gender, or class. But Banks argues, and we share his conviction, that citizenship is more than just legal status; it is also about identity. One can understand identity in terms of membership in a specific race or cultural group or as "a means by which people experience a sense of solidarity . . . with others in the wider world" (p. 68). The United States, however, has used racial group membership as a strategy to exclude individuals from attaining citizenship. While some of these identity barriers began to fall, particularly after the *Immigration and Nationality Act of 1952* abolished racial restrictions dating to the *Naturalization Act of 1790*, the law continued to codify the national origins quota system, which preferred Northern and Western European immigrants.[i] Banks and others would argue, however, that identity though foundational to citizenship connotes something much larger than legal status, even if identity has been used to restrict instead of expand our notions of citizenship. Identity as a marker of citizenship suggests the extent to which individuals belong in society (Karst, 1989) and how individuals participate in society (Barber, 1998) whether or not they have attained legal status. Banks (2001) argues for a multicultural, cosmopolitan understanding of citizenship.

Beyond a legalistic understanding of citizenship, then, we can understand citizenship as identity, belonging, and participation in ways that acknowledge and support diverse, multicultural, cosmopolitan, and dynamic understandings of what it means to be a citizen in the United States in the 21st century. What then does *Participate!* reflect about what it means to be a citizen in the 21st century America? We now turn to our study.

Methods

Our mixed methods study sought to provide insights into our research question: How do CPS high school civics teachers experience a District-developed curriculum designed to encourage civic participation among students? We hoped to generate an understanding of how civics teachers in Chicago Public Schools perceived the *Participate!* civics curriculum and accompanying resources provided by the CPS Office of Social Science and Civic Engagement. Chicago Public Schools currently enrolls 390,000 students in 640 schools. The district is comprised of 46 percent Latinx, 37 percent African-American, 9 percent White, and 4 percent Asian students. 85 percent of district students experience poverty, 17 percent are English Language Learners, and 13 percent are diverse learners. The District developed the curriculum for use in civics classrooms eschewing both the distribution of an outsourced civics textbook or a laissez faire approach to curriculum. Other districts have recommended a civics textbook (Dade County Public Schools) or encouraged teachers to develop their own curriculum (Oakland Public Schools). Chicago chose a middle ground in seeking to develop a local curriculum that was flexible, had multiple points of entry and engagement, valued teacher choice and student voice, yet provided a set of curricular resources and supports and enabled teachers to collaborate through professional development and networking as they sought to implement the curriculum in authentic ways.

We gathered data for this study through classroom observations, teacher surveys, and teacher interviews. We sought to identify and study a convenience sample of teachers in four high schools representing the geographic diversity of an extraordinarily diverse school district. At the time, approximately 60 teachers in 40 schools were teaching the civics course using *Participate!* Of the 100 plus high schools in the district, many of them are majority African-American, majority Latinx, or in far fewer instances, integrated and diverse. Chicago Public Schools is a severely stratified school district along race and class lines. The schools are divided into the following categories at the high school level: selective enrollment, charter, magnet, military, neighborhood, and alternative. Charter schools are not required to meet many of the district mandates and therefore rarely adopt District curricular offerings. Selective enrollment schools are granted broad autonomy and are less likely to participate in District opportunities. Alternative schools serve very small student populations that tends to be transitory and therefore seldom are situated to participate in district initiatives. Neighborhood and military schools are those schools most likely to participate in district initiatives either though mandate or choice.

Neighborhood schools represent those schools across the district most likely to be resource poor and comprised of high numbers of students experiencing poverty. For many students, they are the schools not of choice but of last resort. They may have applied for selective enrollment schools but have not been granted access. In the past decade, neighborhood schools have suffered greatly from parents actively pursuing selective enrollment for their children and a population drain facilitated by gentrification (Lipmann, 2004) in addition to the subsequent mushrooming of charter high schools across the city. Tens of schools that might have housed more than 1000 students in the 2000s are now at risk of being closed with attendance hovering in the low hundreds. It is primarily in neighborhood schools that this study was conducted. One diverse school on the far north side, one school on the near north side comprised mainly of African-American and Latinx students, one school on the far southwest side also comprised of African-American and Latinx students, and one selective enrollment school on the mid-south side comprised of majority African-American students.

In our classroom observations, we sought to observe practices that represented high quality civic education pedagogy (See: Appendix 1). These practices included student engagement, relevance, controversy, authentic discussion, service-learning, group learning activities, community building, simulation, critical thinking, reflection, and project development. Literature supports that these strategies can lead to robust student participation and increased academic achievement, along with the development of civic knowledge, skills, habits, and dispositions. Public Act 099-0434 mandated that classrooms use controversial discussion, service-learning, simulation, and instruction in government institutions and processes. We observed the teachers (all white, two men, two women with varying years of experience as teachers and in civics classrooms) as they provided instruction to their students (n=76). The vast majority of students we observed in these classrooms were African-American or Latinx.

The teacher survey and follow-up semi-structured interview sought to ascertain their experience, perspectives of the curriculum, and insights into student impact. Specifically, we hoped to gain insights into how teachers experienced the *Participate!* curriculum, professional supports generated and provided by the district, collaboration with community partners, the extent to which the civics course had impact within the school, and student outcomes. The semi-structured teacher interviews enabled us to probe more deeply into these areas and gain a deeper, more nuanced understanding of how and why teachers came to the civics classrooms, how they valued the curriculum and accompanying supports, and how they experienced and understood student civic development. We purposely avoided examining artifacts of traditional student achievement (tests, grades), instead choosing to focus on student civic skills, habits, and dispositional development. Upon completing the classrooms observations, surveys and teacher interviews, the authors read and re-read the data and offered independent analysis. We conducted open and axial coding.

Findings

In classroom observations, we witnessed regular use of group work strategies and discussion. We also found that students were regularly engaged in relevant themes, topics and issues. We found less robust but still regular use of facilitative teaching strategies, encouragement of critical thinking, project-based learning, and collaboration with community partners. Interestingly, however, we found little use of the state-mandated pedagogies including service-learning, controversial discussion, and simulation in addition to few reflection strategies. While we did not personally observe these missing strategies, we cannot claim that these strategies were never present in these classrooms. In our semi-structured interviews, teachers made regular reference to the service-learning or civic action projects in development or in planning stages.

The three major themes that emerged through the teacher surveys and interviews were curriculum and pedagogy, teacher supports, and student outcomes. Regarding curriculum and pedagogy, we were able to identify three themes that consistently emerged among the teacher respondents: intent, flexibility, and focus on neighborhood projects. As the teachers discussed the perceived intent of the curriculum, they expressed appreciation for its ability to explore the meaning of community, enable critical analysis, facilitate civil conversations and civic action, generate awareness of power and how politics are enacted, and, finally, how *Participate!* focuses on building a strong sense of civic identity. The summative assessment for the course, in fact, asks students to construct a civic resume. Teachers also articulated their satisfaction with the ability of the curriculum to provide

flexible options for teachers even as it provided thorough grounding in civic power through four constructed units: foundations of democracy, elections, policy, and social movements. One teacher was pleasantly surprised that the District had generated such a high-quality curriculum that consistently engaged students. Teachers pointed to the value of professional development, teacher networks, one-on-one classrooms supports, as well as opportunities for professional and personal reflection.

Teachers discussed student outcomes and reported seeing growth and development in civic skills, habits, and disposition. Almost universally, teachers suggested that students began the civics class with a strong sense of resignation and apathy. Rubin (2012) represents this phenomenon in a typology of civic identity suggesting that students tend to fall into one of four civic identity quadrants: Aware, Empowered, Complacent, and Discouraged. Those students who are aware experience congruence with their ideals and social and political norms but are not yet fully active in society, though they see the need to be. Students who are empowered experience congruence and have made the choice to be actively engaged. Students who are complacent do not see the necessity of working for change as they, too, like the aware students, experience congruence, which supports their own perception of the status quo. Students who are discouraged experience incongruity between their ideals and extant norms and do not believe real change is possible. Teachers seemed to be arguing that students arrived in their classrooms feeling awareness and discouragement. They consistently articulated a deep incongruity between what they thought was just and what they saw happening in their world but were unable to see how their voice and actions mattered or would amount to any substantial change.

What teachers experienced during the course, however, was students beginning to demonstrate civic skills, habits, and dispositions. Students were, according to the teachers, much more likely to come to class on a regular basis and engage in conversations of civic purpose in the classroom, around the school, and in their homes. Students were more likely to reach an understanding that their actions and the actions of others had important consequences in a variety of contexts. They began to demonstrate a healthy skepticism about how politics is played or performed. This, according to the teachers, was an important step forward in their dispositional understanding of the meaning of politics in the world. They no longer entirely discounted politics as the domain of others. But they also did not come to accept their social and political contexts as simple to navigate or easy to get things done. They moved, perhaps, not yet to fully empowered, but toward greater awareness. Teachers observed students seeking out more leadership opportunities in school and community and participating more actively in campaigns and projects.

It is important here to address teacher dispositions that were revealed through the interviews. We argue that what teachers bring to the instructional task is extraordinarily important in a civics classroom. Our teacher respondents identified three key dispositions that they brought to their classrooms. First, teachers brought a desire to create informed, engaged, empowered citizens capable of making important decisions in their communities. Without this foundational disposition, we think it would be difficult to provide powerful instruction in a civics classroom that focuses on participatory action. Secondly, teachers were reticent to be perceived as the source of all knowledge. Freire (2000) argues that education is too heavily oriented toward a banking model where teachers simply make knowledge deposits in their students. That dynamic sets the teacher up to be powerful and authoritarian, while the students are docile and compliant. These teachers, however, seemed to be arguing that the role of the civics teacher is not to simply provide information for

students but to facilitate learning. They are clearly diverting from knowledge-centered curriculum theory discussed above toward student-centered types of learning and Social Reconstructionism (essentially a derivative of Social Meliorism). Finally, teachers did not perceive themselves to be in classrooms devoid of political, social, historical and economic context. They saw and appeared to be responding to the fact that students in their classes came from low-income, historically marginalized communities of color. Additionally, these students had not, according to several of the teachers, been exposed to the rules of the game. How does one navigate the political world in order to achieve and exercise power? These were new lessons and understandings for the students and teachers felt compelled to be in these classrooms contributing to greater equity among students.

Participate! curriculum seems to cross each of the strands of progressive education. As a District-developed curriculum, it draws from Social Efficiency ideals and is steeped in Social Meliorism with its focus on analyzing power, critical thinking, and informed action. It offers many choices for teachers and students alike; it is choice-based and flexible, yet structured so as to support the teacher with proven practices.

The limitations of this study simply put is that it was small scale by design, with four schools with one classroom observation per school. No student level data/perspective was sought after or availed, although students freely offered comments upon completion of the observation and appeared to enjoy the co-researchers engagement with them as we observed and asked questions on occasion concerning the nature of a lesson, assignment, or activity. Future research would most assuredly include intentionally bringing the high school students into the conversation, and one research strategy imagined would be to survey the students using the format/method of a semi-structured focus group. As co-researchers, our interest in this regard would be to critically reflect with the students themselves, learning and discovering what are some of the takeaways they would describe from their experience with *Participate!* Furthermore, we believe that extending classroom observations over several sessions would be beneficial, especially when those observations are related to the enactment of a service-learning or community engagement project. We aspire to observe classrooms in school and community settings when and where the teacher managing the class is using a problem-based methodology, project-based learning, or other critical civics pedagogical strategies. We would then be able to make stronger claims regarding the efficacy of civic education drawing from student level data and by examining student outcomes from course participation. What we are most interested in is developing a longitudinal study of student civic participation and identity development while accounting for and exploring the alignment of teacher values/perspective with curricular intent.

Discussion

We are witnessing a resurgence in the value of civic education as emerging ideas of what it means to be a citizen are part of the national dialogue. The United States Congress and the American public continue the contentious debate over who belongs, who might gain identity, and who can participate fully. The authors we have cited here represent a far more robust, and we suggest interesting and engaging, contribution to the debate that tends to be characterized by misinformation, racist tropes, and half-hearted attempts to seek resolution to the question through compromise that leaves no one satisfied. But if we look inside a public school classroom in Chicago where civic education is being enacted, we see possibilities for students to engage their local contexts cognizant of city, state, and national political realities with meaningful civic action. Kahne and Westheimer (2006) provide a useful

framework for understanding the ways in which students in civic education classrooms might be engaged. The authors propose a typology of citizenship: personally responsible, participatory, and social justice-oriented. Again, these citizen types reflect characteristics of Progressive Education curricular theories evolving through the 20th and continuing into the 21st century. Preparing young people to be personally responsible citizens reflects curricular theory in the liberal democratic education tradition as well as drawing from Developmentalism (students being prepared to become adults). Kahne and Westheimer argue that the vast majority of civic education in the United States fits this idea of citizenship.

The participatory citizen fits the Social Meliorism ideal – a citizen who is public-spirited, hopes to solve social problems, and seeks to participate in and through existing forms and structures. This citizenship ideal represents a smaller though still fairly robust segment of the American public. This citizen seeks not so much to change or alter the systems and structures of society as to generate social improvements through existing forms of participation.

The third type of citizen, the social justice-oriented citizen, seeks not to follow social and political norms as much as to disrupt them. The social justice-oriented citizen, embraces Social Reconstructionist ideals, offers a compelling critique of society and offers ways to re-orient society around more just, equitable principles. Historical referents abound including W.E.B. DuBois (1910), who helped found the National Association for the Advancement of Colored People (NAACP), and then president of the Progressive Education Association (PEA) George Counts (1934), who "dared the schools to change the social order". Kahne and Westheimer argue, however, that most civic education practices steer clear of preparing the social justice-oriented citizen. Indeed, most Americans lack a clear social justice framework from which they engage public life.

Chicago Public Schools (CPS), by far the state's largest school district, was well-situated to support schools and classrooms as they sought to meet the new mandate. Though CPS did not require its schools to use the *Participate!* curriculum, each school was required to offer a civics course that met the pedagogical requirements of the new law. This study examined the experiences of four CPS teachers who offered the new *Participate!* curriculum in their classrooms. We have argued earlier that *Participate!* is reflective of Progressive Era theoretical frames - Social Efficiency, Developmentalism, and Social Meliorism. As its name suggests, the curriculum requires that students participate in public life through service-learning, community engagement, or civic action. But the nature of participation is left up to the teachers and the students in classrooms and tends to reflect local, authentic concerns. In one classroom, students were engaging the politically contentious issue of gentrification and debating ways to preserve affordable housing in their communities and maintain local businesses that were being forced out by rising property rates. These forms of classroom engagement reflect what Rubin (2012) identifies as critical civic engagement based on the lived experiences of students. This process represents an integration of child-centered learning and socially reconstructionist pedagogy. It seeks to engage the authentic lived experiences of students in classroom experience and facilitate a critique of social and political systems toward civic action.

Conclusion

American democracy can be conceived as living in and, for some, embracing political and cultural tensions and discerning how best to craft a common existence and purpose from those tensions. We argue then that civic education in this country must seek ways to engage these tensions, not so much to overcome

them as to provide opportunities for all students to participate meaningfully, critically, and collaboratively in the democratic process. As long as there is an American democratic republic, these tensions will be part of our discourse. However, in order to realize the goal of meaningful, critical, and collaborative participation, all students need to feel they belong, not simply as Americans writ large, but as citizens with multiple, changing, boundary-crossing, emerging, local, national, and global civic identities that position themselves for full and equitable participation. In other words, they need to feel both a deep sense of belonging and a full sense of purpose with diverse avenues for political participation. Civic education that creates sufficient opportunities to explore and navigate ongoing tensions, engage in purposeful action that reflects lived experiences, and space to develop engaged and authentic civic identities, will be critical in order to develop the next generation of citizens who are not cowed by diverse expressions and perspectives or paralyzed by polarizing argumentation.

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Integrating Transformational Leadership to Foster Collaborative Classrooms
by
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Abstract
The authors provide historical context regarding authoritarian educational leadership styles and the need for educational leaders to explore and potentially implement transformational alternatives. Such alternatives demonstrate, as described through the lens of self-determination theory, the potential to support and promote students' needs while also enhancing student success in traditional classroom settings.

Many instructional methods utilized in classes throughout North America are steeped in, and based on, Eurocentric ideologies. Such ideologies, engrained in current institutionalized educational systems, have caused classrooms to mirror that of a colonial, or top-down, structure. The persistence of this Eurocentric approach is based on the parallel development of the European civilizational identity and modern western education, growing together since the sixteenth century (Baker, 2012, p. 12). This sustained and systemic paradigm has reduced students' role in classrooms to that of passive recipients of information. This authoritarian approach to learning, grounded in the transmission of information from teacher to student, is becoming increasingly ineffective and extraneous in our modern learning landscape. Within authoritarian approaches to teaching, learning is belittled to a mere exchange of information between teachers and their students, through "constructive and corrective behaviours" (Rosenbach, Taylor, & Youndt, 2018, p. 54). In a burgeoning age where access to information exists at the fingertips of students, such authoritarian approaches appear less appropriate relative to their pedagogical soundness (Rosenbach et al., 2018, p. 54).

Leadership styles in classrooms are important to consider because it affects the "general personality, demeanour and communication patterns" present and overall classroom climate (Oyugi & Gogo, 2019, p. 23). Thus, teaching pedagogies grounded in the transferal of knowledge (i.e. authoritarian approach) are often coupled with impeding hierarchical classroom dynamics that place the needs and wants as well as thoughts of the teacher above that of the student. This approach has proven to undermine the growth of students whereas utilizing transformative approaches shows greater potential to support students in concert with the development of a collaborative classroom. To reflect changes in society, teachers' leadership in education needs to explore instructional alternatives – ones that adhere to student voice and responsibility in learning. These alternatives should mirror the potential as evidenced through transformational approaches in collaborative settings. Through the implementation of a transformational leadership style, which encompasses collaborative attributes, consistent student success based on sound learning outcomes will be more achievable (Bartholomew et al., 2018, p. 52).

Leadership Styles and Effects on the Classroom
Theoretically, the term and action of leadership has developed significantly over the last two centuries. Beginning with the Great-Man Theory of the mid-19th century, Thomas Carlyle developed the ideology that leaders were *men* who are "endowed with heroic potentials" and are the only persons who "could ever become

leaders" (Khan, Nawaz, & Khan, 2016, p. 2). Parallel to the idea that leadership is inherent, Trait Theory suggested that certain physical traits and personality characteristics were the determination of whether an individual was a leader (Germain, 2012, p. 37). Trait Theory has persisted, with theorists finding consensus on a "basic structure of personality" that most suits leaders (Pervin, 1994, p. 103). When the theory was developed, there remained no differential between leadership styles – merely, that a leader was intellectual, of physical ability, and retained "distinguished" personality traits from that of a non-leader (Khan et al., 2016, p. 2). While that is not to say that characteristics do not play a key role in leadership style and the development of an effective leader, it is important to recognize the potential for a leader to change or grow within their practice. An understanding of the potential to manipulate one's practice to promote effective leadership reaffirms the ease of pedagogical change for anyone.

When considering leadership styles in education, importance should be given to the effects on students and student learning. Authoritarian approaches, which are currently evidenced in many classrooms, are overbearing – in part, through their use of control and close-minded methods relative to content delivery (Oyugi & Gogo, 2019, p. 23). Moreover, authoritarian leadership styles implemented by teachers exhibit the possibility of creating pugnacious and futile relationships in the classroom setting, reducing the potential of academic and personal growth (Bhatti, Maitlo, Shaikh, Hashmi & Shaikh, 2012, p. 193). Findings suggest that a controlling teaching approach adversely impacts student success through the creation of hostility between students and teachers in learning environments, decreasing engagement and limiting knowledge attainment (Bartholomew et al., 2018, p. 52). Additionally, teachers' overreliance on controlling, or authoritarian approaches, also stifles students' innate psychological needs such as autonomy, competence, and relatedness. Moreover, this reduction in support of students' needs will also suppress students' intrinsic and/or extrinsic motivation (Niemec & Ryan, 2009; Ryan & Deci, 2000). As well, the effects of the authoritarian approaches can generate student failure, through reduced "student satisfaction, confidence, and effort" (Bartholomew et al., 2018, p. 50). Essentially, the relationship between the teacher and students becomes more directed on discipline and behavior management instead of focusing on the nurturing of scholarship.

Educator Based Transformational Leadership

Transformational leadership is a relatively contemporary approach to leadership and teaching that has been integrated in various disciplines where interpersonal relationships are present. Transformational leadership theory developed in the 1980s and has been reworked by Bass (1985), Sashkin (1988), Tichy and Devanna (1990) and many others (Yukl, 1999). The vast involvement on the development of the theory has allowed a stronger sense of attributes and applicability in various disciplines and scenarios where hierarchal relationships exist. Distinguishing itself from other theories, transformational approaches support the needs of the majority, through the involvement of followers and mutual responsibility for growth (Khan et al., 2016, p. 3). Attributes of the methodology closely align with the purpose of academia, where research and education as well as scholarship are pursued to achieve efficiency and "to achieve with increasing facility the legitimate goals of [one's] life" (King Jr, 1947, p. 32). Through the implementation of transformational leadership, teachers and students grow together and facilitate the potential for a stronger classroom well-being and sustainability of learning through a students' educational career.

Beyond the correlation of foundational goals between transformational leadership and education, the main aspects of the theory connect with educational goals and modern classroom needs. Bass (1985) describes transformational leadership as being comprised of four major aspects: individual consideration, intellectual stimulation, inspiration, and idealized influence (See Table 1). Utilization of the transformational leadership approach in the classroom then results in attainment of the expected goals within the classroom to support student development and learning.

Table 1. Characteristics of Transformational Leadership

Aspect	Transformational Leadership	Education Based Needs
Individual Consideration	• Focus on group members needs • Followers brought into group and motivated to complete tasks	• Attention to individual student needs • Exchange of positive traits • Inclusion and motivation to engage in lessons/classwork
Intellectual Stimulation	• Ideas are sought from group • Encouraged contribution and collaboration • Followers are independent and develop autonomy	• Students generate comprehensive learning from diverse perspectives • Students are able to work independently to achieve learning goals
Inspirational Motivation	• Meaning, vision or reasons to complete a specific task • Inspire confidence and motivation/ strong communication	• Creation of learning goals to support a map of student learning • Continued support of students throughout learning process
Idealized Influence	• Leader acts as a role model/facilitator • Foundation of values/ ethical principles	• Students develop trust and confidence in teacher • Develop traits/attributes alongside learning

Current classroom climates require the implementation of leadership styles that work with the larger landscape of social interaction and intellectual development. A prominent change in the classroom is access to, and integration of, technology. Effectively, the role of a teacher has changed to a facilitator, requiring collaborative leadership and student involvement in learning (U.S. Department of Education, 2017, p. 43). Teachers must develop a shared vision with students for technology integration and adopt communication styles and practice that are parallel to

transformational leadership to ensure technology remains a valuable tool in the classroom (p. 44). These expectations correlate with teachers employing attributes of transformational leadership, as this approach demands teachers to change existing systems and practices (Smith, 2016, p. 67).

Along with the constant interaction with technology comes the real-time exposure to world issues. The social and political as well as economic status of nations around the world are becoming a more prevalent concern to our population. In turn, students at younger ages are becoming concerned and involved with these issues (Briz-Ponce, Pereira, Carvalho, Juanes-Méndez & García-Peñalvo, 2017, p. 613). Utilization of transformational leadership supports this new level of involvement, as teachers stimulate students for change and innovation (Smith, 2016, p. 67). Moreover, a teacher utilizing transformational leadership will inspire students and support their involvement in activism that is ever-present and necessary in today's society (p. 67).

Transformational Leadership and Collaboration

A fundamental facet of transformational leadership is the inclusion of the *follower* within the *leader's* methods. For learning, that is exhibited through collaboration and the establishment of student-responsibility in education. In previous leadership models, collaboration was limited, due to the focus on transmission of information from the teacher to the learner. Within an authoritarian approach to education, bureaucratic teaching methods focused on rationalizing lessons through summative assessment (Antonakis & Day, 2018, p. 336). Utilizing a teaching strategy so stringent caused educators to intertwine discipline with learning, lending their focus to concerns of planning, reliability and results (Antonakis & Day, 2018, p. 336). In doing so, there was limited awareness of the individual student needs and the insufficient necessary stimulation.

However, quite the opposite is demonstrated by transformational leadership in the classroom, lending its attributes to a student-centered approach. A transformational leadership style also connects with attributes of a democratic leadership style, which is "consultive and participatory" and supports guidance from the teacher and student responsibility in learning (Oyugi & Gogo, 2019, p. 23). Further, through the seemingly submissive approach of the teacher, stronger teacher-student relations develop, allowing positive effects on the school culture (Boberg & Bourgeois, 2016, p. 370). Students are given an opportunity to feel in control of their learning, as they become stakeholders rather than recipients of information and subordinates to the teacher (Bass, 1985). As well, transformational approaches to learning tasks supports student involvement, generating more ideas and creating a comprehensive examination of topics (Jung & Avolio, 1999, p. 209). Findings from such applications include students developing stronger understandings of complex concepts and theories (Jung & Avolio, 1999, p. 209). Collectively, it is evident that the use of a transformational leadership approach effectively incorporates students in learning and creates a stronger relationship that supports collaboration.

Through a quantitative case study at an aviation institute in Thailand, application of transformational leadership proved its effectiveness in the development of positive student learning outcomes. Findings determined that the use of transformational leadership allowed students to be challenged, through an interactive approach that fostered independent thought and positive outcomes including "diligence, honesty and discipline" (Ketkaew & Jangsiriwattana, 2018, p. 429). As well, the students in the study reported the leadership approach allowed them to understand that "hard work is worth it" and develop the ability to "think

deeply and critically about course concepts" (p. 429). Overall, the study concluded stronger student learning outcomes in relation to the course expectations, as well as growth in moral behaviours (p. 429). Thus, the implementation of the transformational approach in this classroom setting attests to the effectiveness, through self-reported and quantified results, which show the potential for other classrooms to be benefited as well.

Collaborative Classrooms as a Source for Student Support

Existing scholarship and professional experience have created a deeper conceptual and practical understanding of how developing more collaborative learning environments can support teachers and students alike. Of course, covering the breadth of such benefits is far too large a task to tackle in a singular body of work; thus, the focus moving forward will evaluate the benefits vis-à-vis the support of students' psychological needs – with a particular focus on support for students' autonomy, or ability to exercise control over one's environment.

Through the lens of self-determination theory (SDT), it is presumed that humans are inherently curious and have a passion for learning; additionally, there exists an understanding that social and environmental variables (i.e. teacher-student relationships, learning environments, etc.) have the potential to facilitate or undermine a person's intrinsic motivation (Ryan & Deci, 2000, pp. 68-69). Further, a person's intrinsic motivation, or the motivation to engage in an activity because it is deemed enjoyable, will decline when individuals cannot exercise self-determination – especially when few choices are available to them (Schunk, Pintrich & Meece, 2008, pp. 248-249). Thus, in a classroom setting, where students are afforded little, to no, opportunity to actively exercise control over their own learning experience, their need for autonomy is undermined. A consequence of utilizing such controlling instructional practices also leads to the stifling of students' intrinsic motivation.

With this being stated, it is imperative to explore alternative approaches to teaching and learning that afford students the opportunity to serve as active participants in their own educational process. Not only is it just good practice, but it serves to support and promote students' needs while enhancing their motivation. deCharms (1976) suggests that students have too little power over their respective environment and that schools need to create situations that will promote student commitment and responsibility. Such a dynamic approach has the potential to be accomplished by supporting students' perception that choice (i.e. decision-making) originates from them. deCharms' theory creates a binary where students perceive their role in a classroom as either being an 'Origin,' an autonomous individual viewed as the source of the intention, or a 'Pawn,' a powerless participant. Students who view their role in the learning environment as Pawn-like will demonstrate behaviors filled with apathy and passivity. Students in controlling, or authoritarian, learning environments are much more likely to view themselves as 'Pawns.' Thus, if students are not given opportunities to experience genuine examples of autonomy in their learning environments, it has an incredible potential to lead to a decrease in students' motivation while causing students to lose interest in learning. Thus, through the lens of SDT, it is evident that transformational approaches to teaching have a greater potential to support students' needs through the creation of learning environments where teachers and students co-construct myriad facets of the learning environment.

While adapting one's instructional design and delivery to be more transformational might appear daunting, the reality of doing so is not as challenging as might first appear. Table 2 below, adapted from Stefanou, Perencevich, DiCintio, and Turner (2004), provides an example of techniques and practices that will

enhance student autonomy – in part, through sound and collaborative techniques (p. 101).

Table 2. Transformational Strategies Associated with Autonomy Support

Organizational Autonomy Support	Procedural Autonomy Support	Cognitive Autonomy Support
Students are given opportunities to: • Choose evaluation procedures • Participate in creating and implementing classroom rules • Take responsibility for due dates for assignments.	Students are given opportunities to: • Choose the way competence will be demonstrated (i.e. form) • Discuss their wants • Display work in an individual manner	Students are given opportunities to: • Justify solutions for purpose of sharing expertise • Debate ideas freely • Be independent problem solvers with scaffolding.

Implementing a new pedagogy or changing an existing practice may seem challenging, especially to those who have implemented an authoritarian paradigm for the entirety of their career. However, it is not quite as onerous as it might seem, due to the reduced dominance and inclusion of students to achieve success. In fact, Kouni, Koutsoukos and Panta (2018) determined that the use of transformational leadership improved teacher's job satisfaction, despite the number of years of service. Teachers determined that through a built shared vision and shared goals, higher performance and cooperation were evidenced, easing the teaching process (p. 165).

Utilizing a foundation of transformational leadership assures that the teacher has strong decision-making pedagogy, to ensure everything is done intentionally and with a purpose (Bana, 2012, p. 2). A key aspect of the transformational framework is the consideration that activities or lessons have a vision or goal, allowing inspiration to encourage student participation (Bana, 2012, p. 4). Allowing students to see the value of teachings will then foster the resulting positive attributes evidenced in a transformational framework. Thus, through more complete and interconnected planning, instruction and lessons become applicable to formative and summative learning.

Another key motivating factor towards integrating transformational leadership into teaching pedagogy is the positive effects on prevention and alleviation of burnout. Through the use of conservation of resources theory, Hildenbrand, Sacramento and Binnewies (2018) determined that transformational leadership reduces burnout. In the classroom setting, stressors can lead to burnout through emotional demands and role conflict, which are alleviated through transformational leadership approaches (p. 3). Leithwood, Menzies, Jantzi and Leithwood (1996) parallel these findings for educators, suggesting that the use of transformational leadership can decrease burnout, as it affects personal and organizational variables (p. 200). Further, the use of transformational leadership projects the teacher in a role model position, increasing the positive perception of

oneself in their professional role (Bogler, 2001, p. 663). Irrefutably, such a discovery can then determine that the use of transformational leadership is beneficial to all parties involved in classroom relationships.

Conclusion

Classrooms are a constantly evolving environment that foster interactions among a plethora of diversities, with the common goal of growth and learning. As the climate within classrooms change and the diversity grows, teaching pedagogy must be revised to meet the needs of the students and to grow alongside larger social transformations. Through the use of a transformational leadership style by teachers, a collaborative classroom can be created, allowing a myriad of positive outcomes for students. The classroom dynamic changes from that of individualized progression through directed lessons into a collective advancement towards attainment of knowledge and understanding of complex concepts. Further, these resulting collaborative classrooms lend their attributes as a source for student support. Therefore, it is imperative that teachers evaluate their current pedagogical approaches and make the necessary changes to move away from authoritarian attributes and towards the more effective, more suitable, transformational approach.

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Building teacher resilience: Examining a self-care curriculum with preservice teachers
by
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Abstract

Teaching is considered one of the most stressful professions; yet, few teacher education programs offer curricular opportunities to develop skills to manage the stress associated with teaching. In this mixed-methods study, we examined the impact of a self-care curriculum on preserving teachers' (n=30) self-care behaviors by analyzing the difference between pre and post-assessment scores, as well as student reflections on becoming resilient teachers. Quantitative results suggest the curriculum contributed to gains in some areas of work-life balance, physical wellness, emotional wellness and spiritual wellness. There was no significant difference in participants' social and intellectual wellness activities. Qualitative findings suggest that even when preservice teachers felt accomplished in some areas of self-care, they desired to improve upon those practices to remain resilient educators. Additionally, participants recognized a disconnect between their self-care knowledge and self-care behaviors, and personal relationships simultaneously supported and hindered their wellbeing. Implications for teacher education are discussed.

Teacher stress is not a new phenomenon. Decades of research have identified teaching as emotionally draining and stressful (Kyriacou & Sutcliffe, 1978; Gu & Day, 2007). It is considered a 'high stress' career, as the excessive workload, ever-changing policies, range of student needs, and political nature of schools can overwhelm educators (Borman & Dowling, 2008; Myung et al., 2013). When this stress becomes chronic, it can lead to teacher burnout and manifest as exhaustion, cynicism or low self-efficacy (Hydon, Langley, Stein, & Kataoka, 2015; Olivier & Venter, 2003). And while stress is consistently present in schools, supports to mitigate stress, such as self-care, are not. Attuning to and caring for one's wellbeing through self-care is viewed as a luxury by teachers rather than a necessity (Brunetti, 2006), and teachers are often socialized to 'put students first' and forget about their own needs (Richards, Levesque-Bristol, Templin, & Graber, 2016). In turn, stress drives the experiences of teachers.

This study emerged from a two-year conversation between a teacher educator and social work professor who recognized the lack of self-care in preservice education. Amidst growing recognition that most educators will work with students affected by trauma and experience stress in relationship to serving these traumatized students (National Childhood Traumatic Stress Network [NCTSN], 2016), we worried preservice teachers were not sufficiently prepared to manage that stress. Our conversations and research led to the development of a self-care curriculum. The purpose of this study was to examine the impact of the self-care curriculum on preservice teachers' (PSTs) wellness behaviors and their reflections on self-care in hopes of strengthening their professional resilience.

Background Literature

Teaching is a unique profession in that it is one of the few careers where professionals have as much responsibility their first year of teaching as subsequent years (Tait, 2008). Novice teachers have full teaching loads and are expected to

carry out all additional duties, such as communication with families, student paper work, and assessments (McIntyre, 2003). Therefore, new teachers are at high-risk for burnout as many schools adopt a 'sink or swim' mentality for school professionals who are still learning to manage the stress associated with teaching and all of its demands (Alisic, 2012). Attitudes of new teachers can quickly turn from optimism to pessimism as the stress of their new position is realized (Brock & Grady, 2007).

This reality can help explain the high attrition rates of teachers within their first three to five years of teaching (McIntyre, 2003; Borman & Dowling, 2008). Not only is teacher attrition costly to districts but this turnover can negatively impact students' school experiences and achievement (Henry, Bastian, & Fortner, 2011). Teachers experiencing burnout while remaining in the profession is also a concern, as these teachers are less likely to utilize effective practices than teachers who are satisfied with their work conditions and environment (Olivier & Venter, 2003). These teachers tend to feel negativity towards others and less commitment to their school and district, which can compromise the school climate (Maslach, Schaufeli, & Leiter, 2001; Nagar, 2012; Richards et al., 2016).

As described above, stress and burnout can result from a number of environmental factors in schools, one of which is secondary trauma. Secondary trauma is the duress experienced by simply knowing about a traumatic event and wanting to help the traumatized person (Tehrani, 2007). In the school context, it is the trauma that can be transferred from student to teacher as teachers learn about students' lives (e.g., familial abuse, loss, fear, food insecurity). As schools become more aware of the impact of trauma and the likelihood that at least one child in every classroom has experienced trauma (NCTSN, 2016), we must recognize that in-service and preservice teachers are indirectly impacted by the knowledge of student trauma (Alisic, 2012; Dawson & Shand, 2019). In helping or simply wanting to help students who have experienced trauma, teachers' physical, emotional, social, intellectual, and spiritual wellbeing can decline.

Minimal attention is given to stress, burnout, and secondary trauma at the preservice level, but PSTs are a vulnerable group (Hydon et al. 2015). Research indicates that university students experience elevated rates of stress and report higher levels of psychological distress than the general population (Gardner, 2011). As Benton (2019) states, "College students are stressed" (p. 23). This stress can be amplified for PSTs who begin clinical experiences and discover the true demands of teaching (Goldstein, 2005), while also balancing coursework, part-time employment, and social obligations (Benton, 2019). Additional stress can stem from the disenchantment that many PSTs experience when their internalized images of teaching are disrupted by what teaching actually looks like on a daily basis. Ultimately, these experiences and realizations can dissuade education students from entering into the profession (Chaplain, 2008).

Self-care is a way to counter the stress associated with student life, teaching, and sustaining oneself as an effective educator (Siu, Cooper, & Phillips, 2014). Self-care refers to activities intended to restore one's health and wellbeing on a physical, emotional, social, intellectual, and spiritual level (Benson, 2017). It is not unwinding with a galloon of ice cream at the end of the week or simply avoiding situations. Rather, it requires thoughtful attempts to modify or change harmful behaviors or implement new strategies to improve one's wellbeing (Fowler, 2015). It might also involve seeking professional help or resources during this process. Without self-reflection and a plan related to how we are 'okay' or 'not okay,' we risk experiencing the many consequences associated with professional stress, secondary trauma, and gradual burnout (Hydon et al., 2015; Kaspereen, 2012).

Although limited, some examples of self-care and wellness interventions are documented in the literature. These interventions have targeted in-service teachers through professional development on mindfulness (Jennings, Frank, Snowberg, Coccia, & Greenberg, 2013), gratitude (Chan, 2011), stress management (Siu et al., 2014), and relaxation (Kaspereen, 2012). One Australian university responded to the scarcity of programs aimed at the preservice level by creating an online intervention to prepare future teachers for the demands of teaching (Beltman, Mansfield, Wosnitza, Weatherby-Fell, & Broadley, 2018). The training included modules on social-emotional competence, wellbeing, and taking initiative. Such interventions and trainings are rare, but they offer promise in helping preservice and in-service teachers build the skills they need to sustain themselves as educators.

Although most efforts are directed at in-service teachers, experiential learning and coursework related to self-care should begin during the preservice stage as PSTs develop habits that can be carried with them into the field (Chan et al., 2011). However, few examples exist on how universities and teacher education are addressing concerns around professional resilience (Beltman et al., 2018; Benton, 2019). The lack of programs and curricula was our motivation in designing a self-care curriculum for university students and then determining its contributions to students' wellbeing.

Theoretical Perspective

While teaching is a high-risk profession for burnout, there are also many factors that can protect educators from the stress they experience in the school context (Le Cornu, 2009). Essentially, certain factors can promote resiliency. Resiliency is a theoretical concept that suggests one's resources and personal assets can help them rebound from life's difficulties. This is a concept that was historically applied to children but can help explain which teachers flourish and which teachers leave the field of education (Luthar, Cicchetti, & Becker, 2000). Teacher resilience is an educator's ability to thrive rather than merely survive in the school context by learning to utilize resources and adapt to challenges (Beltman et al., 2011).

Resilient teachers are often portrayed as being able to navigate difficult situations, respond sensitively to student behavior, empathize with students, self-regulate their emotions, and experience pride and fulfillment in teaching (Howard & Johnson, 2004). Preservice teachers can develop resiliency by building their personal assets (e.g., self-efficacy, social-emotional competence, motivation), mobilizing environmental resources (e.g., relationships, support groups, housing) and expanding coping strategies (e.g., problem solving, goal setting). This study draws upon the concept of resiliency as a theoretical lens to justify the importance of a self-care curriculum with preservice teachers and investigate how preservice teachers are building personal assets and environmental resources to help them thrive as teachers.

Methods

We selected concurrent triangulation as our mixed-methods design to explore the following questions:
1. Was there a significant difference in preservice teachers' pre- and post-assessment wellness behaviors after completing a self-care curriculum?
   a. How did preservice teachers' descriptions of their self-care activities change from the beginning to end of semester?
2. How did preservice teachers reflect upon their self-care practices and desire to support their professional resiliency?

Concurrent triangulation is characterized by incorporating two methods to corroborate findings within a study (Castro, Kellison, Boyd, & Kopak, 2010). For this study, we utilized likert-type scale questions, short-answer responses, and written reflections, which were analyzed at the end of the semester. The triangulation of these methods helped us more accurately and comprehensively answer our research questions and overcome some of the weaknesses of a single method (Creswell & Clark, 2017).

The participant sample included twenty-nine PSTs enrolled in a required child development course for education majors. All students enrolled in the course were invited to participate by an instructor who was not associated with the course, and the non-instructor kept all consent forms until the end of the semester. Participants had a mean age of 20.07 (SD=1.330) which reflected the composition of 27 traditional and two non-traditional students. As this course is one of the first courses in the education sequence, 21 PSTs (72.4%) reported sophomore status, and eight (27.6%) reported junior status. Eleven (37.9%) were enrolled in the elementary education program, eight (27.6%) in the special education program, six (20.7%) in the music education program, three (10.3%) in the physical education program and one (3.4%) in the speech pathology program. Twenty-one participants identified as female (72.4%) and eight as male (27.6%). Ethnically, one PST identified as Latina (3.4%), two as Black (6.9%), and 26 as White (89.7%). The gender and ethnicity of PSTs in the study is consistent with national averages (Morrell, 2010).

Prior to the course, a trauma and self-care curriculum was developed by the two authors to address a gap in the teacher education and social work courses at the university. The curriculum consisted of eight modules that could be adapted by course instructors to fit the content of their course and needs of students. The curriculum covered trauma (Module 1), secondary trauma (Module 2), balance (Module 3), physical wellness (Module 4), emotional wellness (Module 5), social wellness (Module 6), spiritual wellness (Module 7), and intellectual wellness (Module 8). Each module was designed to take 5-15 minutes of time in hopes that other instructors could more easily fit the curriculum into their course design. Modules began with a purpose statement followed by basic definitions and background on the self-care domain. The modules then suggested an entrance slip prompt and several self-care activities for instructors to choose from during implementation.

For the child development course, topics were scheduled to mirror the course content. The alignment of child development topics with self-care topics showed PSTs that the needs of children are similar to the needs of adults for optimal wellbeing. The infusion of the self-care curriculum into the child development course is presented in Table 1.

Table 1. Self-care curriculum infusion

Course Topic	Self-Care Module	Entrance Prompt and Self-Care Activity
Risk and Resiliency (part 1)	Trauma	Prompt: How have you heard the word 'trauma' used in schools?
Risk and Resiliency (part 2)	Secondary Trauma	Prompt: Think about a time you decided to support a friend or student who experienced some sort of trauma, how did it affect you?

Review Day	Balance	Prompt: In the past week, what have you done for yourself? If your list is long, how did it impact the other demands in your life? If your list is short, how did it impact you physically, socially, emotionally, spiritually or intellectually? Activity: Creating a visual representation of balance involving friends, family, health, and school/work and reflecting on its impact
Physical Development	Physical Wellness	Prompt: Think back to yesterday, what did you eat? How did your food intake contribute to the tone and outcome of your day? Activity: Poll Everywhere class survey of how many servings of vegetables they consumed the day prior and whole-class analysis/reflection of results
Emotional Regulation	Emotional Wellness	Prompt: When you are stressed, what are your coping strategies? Would you describe those strategies as more or less constructive? Activity: Meditation and body scan followed by tips for constructive stress coping.
Social Development	Social Wellness	Prompt: How much social contact do you need with others to feel connected or energized? Why? Activity: Making a list of people who give you energy and people who zap your energy. Reflection on how to maximize time with people who bring you energy.
Self-system and Identity	Spiritual Wellness	Prompt: What gives meaning to your life? Activity: Turn and talk about things that bring you joy in life and creating a gratitude list.
Media and Development	Intellectual Wellness	Prompt: How does your media usage contribute to your wellbeing? Activity: Partnered trivia game

Data were collected from September through December of 2018. The semester began with a pre-assessment wellness survey, which was completed in class. PSTs also completed ongoing reflections at the beginning and end of class sessions that incorporated components of self-care. The semester concluded with the completion of a post-assessment wellness survey during class. All data were stored in hard copy form until the end of the semester. Quantitative data were then entered into SPSS Version 25 for analysis. Qualitative data were entered into NVivo 12 for analysis (QSR International, 2010).

Data Sources
A wellness survey was adapted from the university's health and wellness materials for students. The pre-assessment survey consisted of 24 items covering different subdomains of self-care. The survey measured the subdomains with five

subscales: work-life balance (i.e., satisfaction with balance between work and leisure), physical wellness (i.e., eating a balanced diet, sleep, exercise), emotional wellness (i.e., coping with stress, feeling in control), social wellness (i.e., network of friends/family, supporting others, developing close relationships), intellectual wellness (i.e., ability to see more than one side of an issue, selection of media, awareness of current events), spiritual wellness (i.e., spiritual beliefs provide guidance, finding life meaningful). Each item required participants to rate their wellness behaviors as 'usually', 'sometimes' or 'never.'

All items were related to behaviors, rather than knowledge, as we were interested in what they 'do' rather than what they 'know.' For example, *I recognize my feelings and express them in a healthful way* was an item under emotional wellness. In the pre-assessment survey, open-ended prompts asked participants to describe their current self-care behaviors in each subdomain followed by a final prompt to record general thoughts about their self-care. The post-assessment survey was identical to the pre-assessment with additional open-ended prompts asking participants to describe their self-care goals in each subdomain.

Participants completed written reflections at the beginning and end of each class session that incorporated the self-care curriculum. Entrance and exit slips were provided for students to record these reflections. Entrance slips included a scripted prompt related to the domain covered in class (e.g., physical wellness, social wellness, etc.). Students spent five minutes responding to the prompt before the session began. At the end of the session, students provided an unstructured written reflection on the class session. Responses could relate to the session's child development topic or self-care portion. Reflections related to self-care were included in the study.

A log was kept by the instructor-researcher to document class discussions and implementation of the self-care curriculum. After each session, the instructor recorded a summary of the class discussion, how the module components were delivered and/or modified during the session, and reflections on how to improve the content for students. Documentation of class interactions and curriculum fidelity helped to contextualize and interpret student reflections and survey data. The log also helped to guide critical discussions and peer debriefings between the two authors during the semester (Corbin & Strauss, 2015).

Data Analysis

In order to determine significant change between pre and post-assessment scores we utilized a paired-samples T-test with wellness survey data. Likert-scale responses were entered into an excel spread sheet for both time points, matching each participant's pre and post responses. The spreadsheet was then uploaded into SPSS Version 25 for analysis. We tested the null hypothesis (no significant change in score) and accepted the alternative hypothesis (significant change in score) if the p-value was less than 0.05. We chose to test each item on the survey to help us determine which aspects of the module seemed to make an impact on self-care behaviors. This analytic strategy was utilized to answer our first research question as to whether the self-care curriculum led to changes in wellness behaviors.

Short answer responses from pre and post-assessments, as well as written reflections were analyzed qualitatively through an inductive thematic process (Boyatzis,1998; Corbin & Strauss, 2015). The first step involved open coding of the short-answer responses on the pre and post wellness surveys. A graduate assistant and principal investigator independently coded responses and then met to determine the scope of categories listed by participants. Through axial coding, categories were grouped under common headings to identify a more inclusive title for responses. For

example, "believing in God," "Jesus," and "attending church" were grouped under "religion." These categories were then compared across participants' pre and post-surveys to identify consistent responses (from September to December) and changes in responses. This qualitative procedure was adopted to answer the subquestion to question one, which asked how PSTs' descriptions of self-are activities changed from the beginning to end of the semester.

A similar open-axial coding process was applied to participants' written reflections and open-ended goal statements on the post-assessment survey. First, general concepts were identified and then grouped under broader headings. Through a constant comparative approach we determined the most robust themes and then further interrogated the themes to consider latent storylines, rather than simply describing surface-level statements (Thanh & Thanh, 2017). she emphasizes trauma's effects on social work clients, and the importance of self-care for practitioners. This procedure helped us answer the second research question on how PSTs reflect on their self-care practices and desire to support their professional resilience.

Results

The first research question was constructed to determine if the self-care curriculum led to change in PSTs' self-reported wellness behaviors. Based on numeric responses, we found significant differences between pre- and post-assessment wellness behaviors in seven of the twenty-four items. Significant growth was identified within the areas of work-life balance, physical wellness, emotional wellness, and spiritual wellness. PSTs' level of *happiness with balance between school/work and leisure time* was significantly higher in December (M=1.508, SD=.6861) compared to September (M=1.096, SD=.7608); t (28) = 2.937, p=0.006. The same was true for *eating healthy* from September (M=0.850, SD=.6290) to December (M=1.087, SD=.4926); t(28) = 2.278, p=0.030. PSTs' scores improved significantly for *feeling they had control over their life* from September (M=1.406, SD=.7269) to December (M=1.658, SD=.5564); t (28) = 2.102, p=0.044. Scores also improved significantly for *coping with stress* from September (M=1.369, SD=.6740) to December (M=1.604, SD=.5159); t(28) = 2.057, p=0.049, and *using spiritual beliefs to counter frustration/depression* from September (M=1.029, SD=.8096) to December (M=1.317, SD=.6556); t(28) = 2.370, p=0.025. Finally, scores improved significantly for *finding life meaningful* from September (M=1.406, SD=.7269) to December (M=1.790, SD=.4409); t(28) = 2.736, p<0.010, and *feeling a sense of hope/optimism* from September (M=1.439, SD=.6835) to December (M=1.740, SD=.4743); t(28)=2.190, p=0.037.

T-test results did not show any significant gains in intellectual or social wellness for any items. Similarly, there were no significant changes from September to December in *looking forward to class* (balance), *consistency in work/school-life values* (balance), *positive contributions from work/classes* (balance), *adequate sleep and exercise* (physical), *expression of feelings* (emotional), *enjoyment of life* (emotional), and *meditation/reflection* (spiritual).

A subquestion related to the curriculum's impact explored open-ended responses to determine how descriptions of PSTs' self-care activities changed from September to December. Table 2 presents what reported behaviors remained consistent between the two time points, as well as what behaviors changed.

Table 2. Descriptions of self-care activities

Subdomain	Consistent pre/post responses	Changes in responses

Work-life balance	Staying organized, managing time and completing assignments on time.	Post-assessment: More participants felt they were successful at making time for friends and themselves.
Physical wellness	Eating healthy and exercising	Post-assessment: More participants were descriptive about the types of exercise they engaged in and more found themselves walking instead of driving.
Emotional wellness	Minimal consistency	Pre-assessment: One-third of the sample stated they were unsuccessful in this area, which changed by post-assessment. Post assessment: Participants indicated they were better at seeking out friends/family for support, expressing their feelings in productive ways, and reappraising situations.
Social Wellness	Successful at maintaining relationships, spending time with friends and family, and supporting others.	Post-assessment: More participants indicated feeling connected to others.
Spiritual wellness	Strong religious faith and optimism	Post-assessment: More participants indicated spending more time reflecting or taking time to find meaning in life and their activities.
Intellectual wellness	Openness to various perspectives and knowledge of current events	Post-assessment: More participants indicated they were thoughtful about the media they consumed.

Reflections of Self-Care and Resilience

The second research question was crafted to inductively explore how PSTs reflect on their self-care activities and efforts to become resilient teachers. By inductively analyzing open-ended responses in the post-survey and ongoing reflections, we identified three main themes: success is relative, relationships are complicated, and *knowing* is not the same as *doing*.

Success is Relative

On pre- and post-assessments, PSTs identified how they were successful in each subdomain of self-care and described goals for themselves. Responses indicated 'success' was a relative term in that activities listed under success were also listed under goals. PSTs consistently stated that they desired to improve upon aspects of self-care they were currently practicing at some level of success. Some hoped to expand these activities and others hoped to engage in their successful activities more consistently. One PST wrote she was currently successful at 'reading books for fun' under intellectual self-care, but also listed in her future plan, "Continue

to read more for fun and include different types of books." Similarly, in that category, a PST wrote he currently watches the news every morning but would like to stay current on the news as well as world news. Under spiritual wellbeing, over half of the sample listed prayer and active faith as something they were currently successful at, but also desired to increase attendance at church, pray more or improve upon their spiritual beliefs. The general sentiment was - *I am doing this now but could do it better.* For example, one PST wrote she was good at 'being there for others'; however, in the future, she desired to do a better job of listening when others seek her out. She wrote, "When friends come to me, I want to actually listen to listen and not just listen to respond."

Written reflections, survey responses and in-class discussions spotlighted the importance of friends and family to PSTs wellbeing and resiliency. PSTs recognized that friends and family give them energy, help them cope with stress, feel less lonely, and stay resilient. One PST wrote, "My friends are everything to me and keep me going. I pour a lot into others and am poured into by those around me." Another PST wrote, "Spending time with friends helps me reset my emotions and feel great." "I live in a sorority house, so I am surrounded by girls who are always supporting me and motivating me to do things."

However, participants also recognized times when friends and family could also drain participants of time and energy. One PST wrote, "Sometimes I do need a break from my friends, which is hard to get. I am terrible at saying no. I also suffer from FOMO (fear of missing out), which means I get very little time to recharge by myself." Another PST wrote, "I spend the majority of my time with people, which has been very overwhelming lately. All of my friends are stressed out and it's taking a toll on all of us." Although friends and family were often named in supporting PSTs wellbeing, they also struggled to balance the obligations and stress associated with relationships.

Participants were confident in expressing knowledge of self-care practices and what they should be doing to promote resiliency. The content of the curriculum was not surprising to students, as they were overwhelmingly receptive to the content and eager to share their personal knowledge through suggestions and personal stories. The challenge was transferring that knowledge into action. For example, one PST reflected, "I know I need to get off my phone at night and get more sleep. I've known this for a long time. It is just a matter of actually doing it." Another participant wrote in their post-assessment survey, "I know I need to expand my media usage to include more interesting things. I love podcasts and need to listen to them more. I will listen to them more! (But then I just end up watching another episode of Friends)."

The curriculum provided PSTs time and space to reflect on their current practices and make unconscious habits more conscious. One participant reflected, "As I think about the ways I cope with stress, I know that I should talk to a friend or go on a walk or just breathe. I try to do that. But there are still times when I get angry and will scream, cry, or bite into a pillow. I'm embarrassed to admit that I still do that as an adult." Another participant wrote, "I lost my best friend last year. Now I try to stay overly busy and I always have a show on so that I am not alone with my thoughts. There are probably better ways to deal with this trauma." For many participants, the reflections and discussions allowed for an increase of self-knowledge and recognition of their behaviors. Although these behaviors were not necessarily changed as a result of the curriculum, it increased their awareness, which might serve as the first step in change.

Although not the majority, three PSTs pointed out the hypocrisy between what we *say* and what we *do* in teacher education. These participants noted the

common phrase 'take care of yourself' spoken by instructors and educators in the field, yet, that rhetoric was rarely matched with concrete opportunities or resources to engage in self-care. One student wrote on her final exit slip, "Many of my instructors will say 'remember to take care of yourself,' but this is the first class that dedicated time to self-care. It made me take it seriously." This quotation highlights the institutional and systemic factors that can support or hinder the transfer of knowledge to action (Curry & O'Brien, 2012).

Discussion

Based on the high attrition rates of novice teachers (Borman & Dowling, 2008), scholars agree that teacher education is the place to begin building teacher resilience (Mansfield et al., 2016). Preservice teachers feel many of the same pressures as teachers and are susceptible to secondary traumatic stress associated with serving traumatized students (Hydon et al., 2015). However, there are few concrete examples of how teacher education can support teacher resilience within the curriculum (Beltman et al., 2018, Tait, 2008). The curricular infusion of self-care into teacher education is a starting point.

Results from our analysis indicated that the self-care curriculum led to significant changes in some areas of work-life balance, physical wellness, emotional wellness, and spiritual wellness. We saw the greatest change in emotional and spiritual wellness, which suggests the curriculum helped students select constructive coping mechanisms for stress and feel greater purpose in their lives. By directly engaging in meditation and reflection activities, it appeared that PSTs were able to grow in these areas. Research suggests that teachers who engage in mindfulness are more likely to demonstrate emotional support for students and engage in perspective-taking, which can help with the classroom climate and resiliency (Jennings, 2015). Not only are their personal psychosocial benefits associated with emotional self-care, but it can positively contribute to the classroom community.

It was somewhat surprising that no significant differences occurred in the subdomains of social and intellectual self-care activities. However, high pre-assessment means support our speculation that social wellness was an area of self-care already supported on college campuses through different student life initiatives and student-run organizations (Savitz-Romer, Jager-Hyman, & Coles, 2009). These existing campus social supports might explain the lack of significant change in social wellness. At the beginning of the semester participants felt well-connected to social supports, which continued throughout the semester. It should also be noted that qualitative post-assessment responses indicated that PSTs felt greater connections with others as compared to their pre-assessment responses. The numeric scale did not capture a significant change on social connectedness, but participants more frequently expressed feeling more connected to others at the end of the semester.

It is unclear why little quantitative movement occurred in the intellectual subdomain. Mean scores were relatively low on the pre-assessment items (i.e., knowledge of current affairs, carefully selecting media, and satisfaction with amount/variety of reading), and remained low on the post-assessment. Perhaps students have limited time during the semester for leisurely reading, remaining critical of media consumption, and staying current on news stories. However, one would hope that instructors are incorporating some of these activities into coursework and activities. Qualitatively, participants believed they were more conscious of their media usage and what they were consuming after completing the self-care curriculum. This challenges our quantitative conclusion and suggests that the wellness scale might not fully capture PSTs self-care behaviors and their self-perceived progress in certain subdomains. It also supports the messiness of self-

care and difficulties in recognizing and reporting on one's behaviors (Fleming, Mackrain & LeBuffe, 2013).

Findings suggest that self-care is a jigsaw puzzle of activities, which is never fully mastered or fixed. Notable, the theme of 'Success is relative' captured the complexities in qualifying one's behavior. Even when participants reported *success* in certain subdomains, they still desired to improve upon these activities by expanding the breadth and depth of the activity (e.g., spiritual routines, healthy eating, strategies for coping with stress, etc.). This points to the importance of self-care becoming a thread throughout PSTs' coursework and clinical experiences, as PSTs' wellness behaviors can be maintained, thrive over time. The modules we created are merely one effort that can be enhanced through the use of case studies or other self-assessment reflection tools by instructors or cooperating teachers in the field (Castro, Kelly, & Shih, 2010; Curry & O'Brien, 2012).

We found the relational piece 'It's Complicated', involving the challenges and benefits associated with interpersonal relationships, as meaningful to the work of teacher education. Ongoing reflections and post-assessment responses exposed participants' struggle with setting boundaries and effectively communicating with classmates, friends, and family members to protect their personal time or work through conflict. This signals the importance of recognizing schools as social spaces built upon relationships, which can bolster or weaken social wellbeing. Skills linked to building relationships, effective communication, setting boundaries, and working through conflict are critical to teacher resiliency in school communities where teachers are expected to work collaboratively (Beltman et al., 2018). Colleagues and classmates can serve as valuable supports for teacher resilience when healthy relationships are achieved, but they can also weaken resilience. Preservice and inservice teachers are likely to experience high levels of personal stress (Chaplain, 2008; Nagar, 2012); and they are also likely to find themselves surrounded by a community of colleagues, classmates, and students feeling similar levels of stress. One participant directly pointed to the mutual stress felt within her friendship circle as a hindrance to her wellbeing, suggesting this can begin at the preservice level.

The theme of 'Knowing Versus Doing' was somewhat unsurprising in that knowledge alone is not enough to change behavior. Research suggests that simply raising awareness, without an understanding of how to translate awareness to practice, is ineffective (Christiano & Neimand, 2017). Our curriculum involved content and reflections to raise self-care awareness in PSTs in addition to a translation of that awareness into concrete practices through activities. It appears that some behaviors increased or changed in PSTs, but they still struggled to activate their knowledge into practice in many subdomains. Perhaps greater self-awareness of self-care subdomains and their current behaviors will serve as an initial step to change.

We never anticipated to transform preservice teachers' lives with an eight-module self-care curriculum but were pleased to see some increase in wellness behaviors. As modeled in our self-care curriculum, we believe that providing an overview of each subdomain, allowing for personal reflection, and offering concrete examples of self-care is a helpful place to being with PSTs, and our findings support our belief. However, this content must be reinforced over time. Improving self-care and, in turn, teacher resiliency requires a much wider and coordinated effort within departments, universities, and school districts (Beltman et al., 2018). If programs are willing to establish mindfulness routines in coursework or partner with districts that promote self-care with teachers, PSTs are more likely to internalize those practices as a natural part of teaching (Chan, 2011).

Conclusion

Teacher self-care is rarely infused into teacher education curricula or reflected in professional standards, but professional resilience requires strategies and skills in protecting and promoting one's wellbeing (Beltman et al., 2018; Mansfield et al., 2016). Some school districts offer stress-reduction interventions (Siu et al., 2014; Jennings et al., 2013), which might be made available to PSTs engaged in clinical practice, but this type of opportunity is uncommon (Fleming et al., 2013). If teacher education programs imagine themselves as resilience enabling contexts and socialize PSTs to centralize self-care in their practice, we are likely to see greater professional resilience in preservice and novice teachers (Castro, Kelly, & Shih, 2010; Gu & Day, 2007; Tait, 2008). As one participant reflected, you cannot merely tell preservice teachers to take care of themselves and expect results. As we teach methods in the core areas of literacy, math, social studies, and science, we must also teach self-care as a way of being. This way of being will help PSTs respond sensitively to student needs, self-regulate, empathize, and experience professional fulfillment (Howard & Johnson, 2004).

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Teacher Candidates' Pre/Post Student Teaching
Reflections of Their Experiences
by
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Abstract
Field experiences are often considered the most important and powerful component of teacher education programs. During field experiences, pre-service teachers' professional identities and understandings of the contours of the teaching career are constantly in flux. This study presents teacher candidates' reflections of their pre/post field experiences. Data came from individual interviews with four teacher candidates before and after their student teaching. Findings suggest that teacher candidates emphasize the value of student teaching, and their perspectives on the teaching profession and the process of learning to become a teacher change.

The importance of firsthand experience for educators is emphasized in both contemporary and dated literature. Eight decades ago, Dewey (1938) made clear the value of firsthand experience in schools for the education of teachers. Further contemporary literature (e.g., Byrd & McIntyre, 2019; Darling-Hammond, 2006; Gallego, 2001) has argued that teacher candidates' academic coursework must be supplemented with extended student teaching. Student teaching is not only intended to provide the teacher candidate with the opportunity to implement the theoretical knowledge acquired during academic coursework but also it concludes teacher preparation while simultaneously serving as a foundation for teacher professional experience. Because of different crucial roles it plays in teacher preparation and development, Cook (2007) argued that "Student-teaching is … considered the paramount experience in teacher preparation programs" (p. 119).

Additionally, while it strengthens teacher education programs (Darling-Hammond, 2006), student teaching also provides teacher candidates with opportunities to reflect on their overall teacher preparation experiences. This study provides insight into teacher candidates' pre/post student teaching reflections of their experiences. Participants reflected on a number of issues, including what they learned during student teaching and how student teaching shaped their perspectives on the teaching profession as well as the teacher education program as a whole.

Theoretical Perspectives
The study draws on situated learning (Lave & Wenger, 1991) as theoretical framework. The situated learning perspective recognizes the importance of context and practice in any communities (e.g. professional community). Newcomers become accustomed to the practices of the new community through practice and sociocultural interactions with old-timers (Wenger, 1998). For teacher candidates, learning occurs in a variety of spaces and contexts since they learn about teaching and learn how to teach in different communities (e.g., the university, partner schools). Contextualizing teacher situated learning, Egbert (2006) explains that "when discussing situated learning contexts, educators typically refer to learning by participating in instructional experiences in actual classrooms" (p. 169). As such, teacher situated learning impacts the learning and teaching experiences of individual teacher candidates in a variety of contexts.

This framework is also inclusive of Vygotsky's (1978) zone of proximal development (ZPD) which explicates how, in addition to interactions which are supportive in the process of constructing cultural artifacts, learners can benefit from the assistance of the expert, the peer, or any more knowledgeable other. For teacher candidates, the college or university is a major source of assistance, and the partner school community acts as an additional expert and more knowledgeable institution. While the university is a space where teacher candidates acquire teaching and learning theories and strategies, student teaching provides them with an opportunity to learn by observing and doing (DuFour, DuFour, Eaker, & Many, 2010).

Lave and Wenger (1991) proposed that in a culture of practice, newcomers start from the observation level – the periphery – and gain maturity and access to the community's culture as they get involved and fully engaged in practice. This is ideally congruent with teacher candidates' preparation as they are expected to start with observing their cooperating or mentor teachers prior to teaching their cooperating teachers' classes and later their own classes.

The situated and socio-cultural perspectives make clear the kinds of communities teacher candidates have to navigate. They contribute to understanding and describing the kinds of experiences needed for a teacher candidate to gain a more complete set of tools and techniques to become an effective teacher.

Methodology

This qualitative case study was designed to explore and report on teacher candidates' reflections on their pre- and post- student teaching experiences. Four teacher candidates participated in the study: Alexa, Lany, Mary, and Mitch. Data were collected in two phases, prior to and after their student teaching experiences. Prior to their student teaching, at the end of fall 2017, candidates were asked to share their descriptions of effective teachers, explain the extent to which their expectations of the Teacher Education Program (TEP) were met or not met, and share their initial thoughts of the TEP as well as concerns about student teaching. With the argument that interviews constitute the predominant data gathering method to collect individuals' own practices, beliefs, opinions, and experiences (Harrell & Bradley, 2009), we conducted audio-recorded in-person individual interviews with the four teacher candidates who consented to participate in the study.

Following a body of literature that sees value in understanding and exploring what triggers individuals' desire to pursue the teaching career (see Curtis, 2012; Madsen & Kelly, 2002; Watt & Richardson, 2007) before we can examine any other critical issues in teacher education, we also inquired into what influenced teacher candidates' decisions to want to become teachers. Pre- student teaching interviews lasted up to forty-five minutes. In the second phase of data collection, by the end of spring 2018, we sought to examine whether (or how) teacher candidates' perspectives changed after their sixteen-week student teaching experiences. These interviews lasted between forty-five and fifty minutes.

All interviews were transcribed verbatim and the transcripts were used for data analysis. Data analysis was informed by research questions. To strengthen reliability, we began with individually grouping then examining all responses to each question to identify units of information that served as basis for themes identified individually. We then compared, discussed, and reached consensus for final themes. We present major findings in the next section.

Findings

To report on teacher candidates' experiences at two different periods, we first present their pre- student teaching reflections. The reflections demonstrated that

teacher candidates seemed satisfied with the Teacher Education Program as it had, in their opinions, exceeded their expectations. Lany reflected on the TEP prior to student teaching: "I think it went over my expectations, a lot, and I'm glad that I chose to be in the program because I don't think I would have been as successful without the support that I had." Before starting her teacher preparation, Lany imagined a TEP that resembled her community college experience where:

> The teachers come. They teach, and they go. They don't really try to make connections with you and really get to know you. I thought we were just gonna show up, have class and go home, and it wasn't gonna be like this relationship that we all formed with each other and the teachers. So, that's what I was not expecting.

Mitch imagined similar experiences in the TEP: "I really expected it [the TEP] to be kind of like a community college type thing." He realized, however, that the TEP "went above and beyond what [he] thought it would be." Mary stated the following about the TEP: "My expectations were quite low. So, it [the TEP] most certainly exceeded them." Along with teacher candidates' satisfaction with the TEP was their shift in perspectives on the teaching profession. The workload in the TEP especially contributed to the shift. Mitch explained: "[prior to starting the program] I knew it would be a lot of work but I didn't realize how much work goes into it." Mary had always thought of teaching as "a noble profession." The experience of learning to teach, however, made her feel that teachers deserved more respect. Mary explained:

> Since I went into the TEP and learned the right way to do it [teach], I feel like okay well if teachers will actually do this, I'll have even more respect for them. I'll get a tremendous amount of respect for them because this is hard. Like it's not an easy way to go because if you follow the research, you're working harder. […] So, I just learned you know I'm gonna work harder with this, and it made me respect people who do, because I know there are definitely people who do.

Alexa expressed that the workload was different from what she expected. She reflected, however, that "a lot of it may seem like busy work but in the end, it's preparing us for the real world." Another important lesson teacher candidates learned in the TEP was the way to look at students and their parents: "A lot of times I would think oh that parent wasn't trying hard enough or they don't care about the kids" (Alexa). Alexa elaborated on how she changed her perspective:

> This instructor has forever changed, sincerely changed how I view the parents of our students. We don't know what they've gone through, we don't know what they're going through, and I've taken a big dose of humility when I'm out, anywhere, not just in teaching but anywhere.

Mitch talked of the same instructor as having taught him "ways we should look at our students" because "we don't know their situation … their home life. We don't know how the kid's treated. We always have to be cognizant of the fact that we don't know what's going on in their lives." Lany expressed a similar thought, discussing teachers' responsibilities to get to know their students, build strong and trustful relationships with students and their parents, inform students of contemporary research, and help students learn. Many of the responsibilities identified by teacher candidates indicated their attributes of effective teachers. Effective elementary teachers, as suggested by this study:

- Make learning interesting, fun, and enjoyable
- Are passionate about teaching
- Are caring, emotional, accepting, and understanding
- Build strong and trustful relationships with students and their parents

- Challenge students and want the best for students

Effective teachers additionally serve as role models for students and constitute one of the reasons individuals come to the teaching profession. Alexa explained how one of her elementary education teachers nurtured her love for learning and impacted her career choice: "She made learning interesting and fun and I was excited to come to school. That was one of the few times I remember [being] excited to come to school. She made it really enjoyable and I knew then that that was the teacher I wanted and who I wanted to be." Mitch added that the effective teachers he remembered were "the ones that showed the most care toward students."

In addition to the love for learning academic subjects, effective teachers can make students develop love and passion for life beyond school and classroom contexts. Lany elaborated on the impact of her middle school home make teacher: "She taught me how to cook and she was really passionate about teaching us and I don't know, that passion you know moved to me and so I still love to cook. She was my favorite teacher." Ineffective teachers, in contrast, were described in this study as impersonal, uncaring, punisher, not understanding, and unable to connect with students. They are inequitable and focus on rote memorization teaching and learning.

To create context for teacher candidates to think about their own teaching effectiveness, we asked them to share what they believed would impact their student teaching. In this regard, teacher candidates were primarily concerned about the Teacher Performance Assessment (edTPA).

(1) It's not the CT, it's not the students, it's not my supervisor coming in and observing. It is the edTPA, because I know that in passing that, then that's my ticket to be able to teach. And that's my biggest concern and worry. (Alexa)

(2) I think the biggest concern for most people would be the edTPA, for sure. You have to pass that to get your teaching license. Other than that I mean a lot of it is just like nervous-excitement for going into it. Kind of like when you prepare for a big game. […] But edTPA is definitely the biggest concern overall. (Mitch)

(3) You know, a long drive, being there every day on top of doing my edTPA. So, what I'm also worried about is if they want me to do my edTPA and take over the class at the same time, I'm worried that they're gonna try to have me take on too much at once. I'm hoping that's not the case. (Mary)

Classroom management constituted an additional concern for teacher candidates. Mary had worked as manager in a restaurant, and she likened managing a restaurant to managing a classroom. She reflected, however, that managing a classroom in a democratic way could be a challenge: "I'm still trying to figure that part out, you know, exactly how my class is gonna run." Lany reflected on external factors that might influence her classroom management and future employment:

I'm nervous about, you know, it's like an interview every day. Everybody is watching you; the superintendent, the principal. They're watching you every single day. And so, that's a lot of stress because you know they call other schools and, so, that's what I'm most nervous about.

The pre- student teaching interviews concluded with inquiring how long teacher candidates thought they would stay in the teaching profession. This inquiry sounded rhetorical to Lany who responded: "I haven't even thought about that. I guess until I retire. That's what I assume I'll do. I've never thought about changing. […] I don't think I would change to a different profession." None of the teacher candidates in this study envisioned teaching as a short-term employment.

(1) Hopefully until I retire. I have seen teachers burn out. I've seen teachers being frustrated with changes. And, I've seen teachers question their ability. Taking that into consideration, I hope that I may survive through those storms and make it to retirement. (Alexa)

(2) I'm staying until I retire. And unfortunately I will be old, old, very old when I retire. So, I'll work for I mean 30 years you know I don't know, I'll see. But I'm certainly not leaving the profession because I grew up poor and I'm tired of being poor now, and even though I won't be making a ton of money, I'll be middle class. […] so, I won't be leaving. (Mary)

(3) I plan to make a career out of it. I really do not wanna switch. Even if I decided that I wasn't gonna be teaching like actually in the classroom, I would wanna go into administration, just something in education. I don't think I'll completely leave even if I decided that I don't wanna teach anymore. But, I mean, I'm planning on teaching for my entire career, whether it's being in elementary, high school, administration. (Mitch)

The first part of this section has presented teacher candidates' pre- student teaching reflections. We now present their post- student teaching reflections. The purpose of the post- student teaching interviews was to learn about teacher candidates' teaching experiences and document whether and/or how they changed or did not change their perspectives on their preparation and the teaching profession. We highlighted three major findings: edTPA as a concern in both the pre- and post- student teaching, the challenge of being an effective teacher, and teacher candidates' imagined duration of stay in the teaching profession.

EdTPA as a Concern in both the Pre- and Post- Student Teaching Reflections

In their pre- student teaching reflections, teacher candidates stated that edTPA was their major concern. Although the four teacher candidates passed the edTPA, their concern continued in their post- student teaching reflections. Alexa reflected that she felt unprepared for the edTPA because it was not sufficiently discussed in class. Furthermore, she felt "overwhelmed with the edTPA" because it took much of the time she needed to be focusing on her instructional practices. Mary had similar feelings and thought of the edTPA as "just a lot of busy work." She elaborated: "it just wasn't a big deal as I thought it was gonna be. It wasn't as hard as I thought it was gonna be. It just took a lot of my time. It was a lot of documents."

Mitch contended that the edTPA was "a lot of writing, a lot of repeating yourself." He advised, "but once you finish the edTPA, I think that the biggest weight is off your shoulder." Alexa explained that it was after the edTPA that she was able to connect with students in her cooperating teacher's classroom. Lany thought that, besides its reflective component, the edTPA appeared to be much unnecessary work. She explained, "I think edTPA is silly. I mean to a certain point it was beneficial to reflect, but the number of pages you have to do, and this and this." Lany suggested a structure for the edTPA: "I feel that you should just have your lesson plan, a simple lesson plan for each day, video the entire thing, and then reflect on it, send in your students' work, and that should be, I feel like that should be edTPA because I don't know. If you don't see it in the video then it probably wasn't there."

The Challenge of Being an Effective Teacher

Before student teaching, teacher candidates listed "making learning interesting, fun, and enjoyable for students" as one of the key attributes of effective teachers. From their own experiences, making learning fun appeared to be possible but not at all times. Mitch shared his experience with an activity the class played

tirelessly for three weeks. Alexa prided herself on creating effective learning activities when she taught social studies. She recalled the joy of her students making their own titanic ships and writing poems on the Holocaust. Lany shared a dissimilar experience with the teaching of mathematics. She reported, "they give you this book and you needed to do something with this book, not just make something up out of the air like something fun." Lany stressed that "It's not always fun," especially with mathematics. She explained how ineffective she felt some of her mathematics lessons were and how she "felt so bad" afterwards. Mary had a similar opinion. She elaborated on the complexity of making learning fun:

> It's kind of almost impossible to do that [make learning fun and enjoyable] all the time. It really is. So that's something else I learned. Because you know research is going there like make it engaging and motivational and you're like here is math you know. So, I think it's just more like how you introduce it and how you behave about it, because not all subjects are interesting.

Although Mary liked mathematics, she recognized that not every student did, and making mathematics fun was an area in which she needed improvement. She explained, "some things are really boring, like hey we're going to learn about commas and where to place them and you're going to memorize this and that. That one is not fun and I don't know how to make that part fun […] I hopefully will eventually figure that out."

In spite of teacher candidates' awareness of challenges related to effective teaching, their teaching experiences allowed them to identify additional attributes of effective teachers. Effective teachers, according to teacher candidates in this study, are flexible, reflective, try their best to connect with the parents of their students, and understand students' differences and let such differences impact their instructional strategies.

Teacher Candidates' Imagined Duration of Stay in the Teaching Profession

Teacher candidates' pre- student teaching reflections suggested that they all planned to stay in the teaching profession until they retire. As we analyzed post-student teaching perspectives, we noted that two teacher candidates appeared to substantially shift their perspectives while the two others remained closer to their initial plans. Table 1 provides teacher candidates' pre/post student teaching perspectives.

Table 1. Teacher Candidates' Imagined Stay in the Teaching Profession

Pre- student teaching perspectives	Post- student teaching perspectives
"I haven't even thought about that [stay in the teaching profession]. I guess until I retire. That's what I assume I'll do. I've never thought about changing. […] I don't think I would change to a different profession." (Lany)	"I thought about getting my early childhood endorsement to teach kindergarten because that's what I really wanted to do, but I think I'm just gonna see how this first year goes. I'll probably teach 5 or 6 years before I start pursuing the administrative angle." (Lany)

"Hopefully until I retire. I have seen teachers burn out. I've seen teachers being frustrated with changes. And, I've seen teachers question their ability. Taking that into consideration, I hope that I may survive through those storms and make it to retirement." (Alexa)

"I think I will stay in education. I don't know that I will always teach, but I love education, I love the field of education. I don't know what the future holds but I want to continue my education and stay in the field somehow." (Alexa)

"I plan to make a career out of it. I really do not wanna switch. Even if I decided that I wasn't gonna be teaching like actually in the classroom, I would wanna go into administration, just something in education. I don't think I'll completely leave even if I decided that I don't wanna teach anymore. But, I mean, I'm planning on teaching for my entire career, whether it's being in elementary, high school, administration." (Mitch)

"I like being involved in sports, coaching you know so I don't know how long I will teach before getting like a Master's in administration. […] But I think of teaching, maybe teaching people who want to become teachers, I think that's something that I'd really enjoy as well. But I definitely think I wanna do something in education with the coaching, I really enjoy being around kids a lot." (Mitch)

"I'm staying until I retire. And unfortunately, I will be old, old, very old when I retire. So, I'll work for I mean 30 years you know I don't know, I'll see. But I'm certainly not leaving the profession because I grew up poor and I'm tired of being poor now, and even though I won't be making a ton of money, I'll be middle class. […] so, I won't be leaving." (Mary)

"I went back to school late, took a long break. I'm making a career. I've never had a career before. So yeah, I don't plan on leaving it. I guess the only reason I would is if something really awful and unforeseeable happens." (Mary)

Following their academic learning in higher education and their classroom teaching experiences, teacher candidates offered to provide insight into the kind of change they wished to see in teacher preparation programs. Teacher candidates thought the edTPA was not a valid assessment of their learning. While they acknowledged benefiting from courses and related research (e.g., multisensory teaching strategies, Vygotsky's zone of proximal development), teacher candidates also identified courses they thought seemed unnecessary for prospective elementary educators. Mary said, "some of them [courses] should stay, some of them are helpful. But a lot of them, we could have done without, for sure." Mitch made clear that some courses appeared unnecessary because they repeated others.

From teacher candidates' perspectives, the TEP should have reduced the number of courses to provide them with more field experience where they felt they learned more about teaching. According to Mary, "The real experience is the clinical experience. The experience is what matters. And, yes, you have to have some of the classes teaching you how to do lesson plans and things like that and adopt the research." Mitch showed preference for student teaching as well: "I liked it better than taking courses obviously, you know, 100 times better. […] just learning some of the things that you don't even talk about in courses." Alexa shared a similar opinion: "My student teaching has- I've learned *a lot*. Uhm, stuff that can't really be taught.

You have to just do it, because there are certain scenarios that come up that you can't prepare for."

In connection with their overall experiences and their learning during student teaching, teacher candidates suggested an entire academic year as ideal duration of student teaching. Alexa suggested "more time for student teaching. […] It would be amazing if it were possible to do it for a year, a whole school year. […] I think the longer the student teaching the better." Mitch provided a similar suggestion: "I feel like it would be more beneficial if you taught for the whole year instead of just one semester of it." Mary also elaborated, "It would be awesome if it really was a full year. And I mean like take one of our semesters away from observation and place us, so we have two semesters of observation, and then the last two should be student teaching instead of classes."

An additional important finding surfaced from data related to the duration of field experience. While three of the four teacher candidates suggested an academic year for student teaching, Lany provided a different opinion. From Lany's perspective, one semester of student teaching appeared too long:

> Student teaching, I don't think that it should have lasted as long as it did because I've learned more subbing. I've been subbing the past couple of weeks as an aide, and I've learned more through that because that let me do stuff and I've learned more in that time than I did during student teaching.

Lany suggested a specific duration for student teaching: "Maybe cut student teaching instead of 16 weeks to like 8 weeks, and then let you go out in the schools and sub. That would be a better experience, and more beneficial, I feel like." It was only after Lany shared more about her student teaching experience that we tried to make sense of her suggestion for shorter field experience. Lany's imagined student teaching community differed from her lived student teaching community. She explained: "I thought my CT was going to be more- I thought we were gonna communicate more about classroom stuff but also personal stuff. […] I come in the first day, I was going in and give her a hug but she was like uh."

Lany's field experience clearly differed from that of the other three teacher candidates. Alexa said, "I had a really good support. The school I was at, they are used to student teachers coming in. So, any questions that I would have it's my CT to know then her colleagues knew. And, there were challenges but not really significant." Although Mary felt uncomfortable at first, her cooperating teacher made her feel comfortable later. Mary recalled, "She was very helpful about that, my CT. […] She let me know things that I could do better." Mitch also appeared to have appreciated his student teaching experience as he hoped for a similar professional community as a beginner teacher: "If I end up at a school that's like this one I'll really enjoy it. I like how close the teachers are. I feel really welcome here."

This section presented the findings of the study. In the next section, we focus on the discussion and implications for teaching and teacher education programs.

Discussion and Implications

Different Teacher Education Programs use the coursework – field experiences model of preparing future educators. This study took the situated learning lens to investigate teacher candidates' reflections on their pre/post student teaching experiences. We sought to find whether and/or how teacher candidates' perspectives changed as a result of their student teaching. Findings showed that teacher candidates came into the Teacher Education Program with lower expectations. In the program, they realized how learning to become a teacher

required more work than they expected. People outside of the teaching profession often perceive teaching as an easy job (Hastings, 2010; Watt & Richardson, 2007).

Related to workload in the program was the edTPA that constituted a major concern in teacher candidates' pre- and post- student teaching reflections. We reflected on teacher candidates' reflections and noted the importance of practitioner inquiry (i.e. teacher educator research) to inform teacher education policy and practice. Practitioner inquiry allows to construct knowledge from educators' and students' daily experiences. As Cochran-Smith and Lytle (2009) argue, it is "a way to rethink practice, question our own assumptions, and challenge the status quo – not only in schools but also in the university" (p. 43). Related to practice, classroom management appeared to be another concern for teacher candidates both before and after student teaching. LePage, Darling-Hammond, Akar, Gutierrez, Jenkins-Gunn, and Rosebrock (2005) acknowledge that classroom management has been one of the major topics teacher candidates express the desire to learn. It is, according to the National Council on Teacher Quality (2014), an area of struggle for future and novice teachers.

Teacher candidates pointed to their learning about the importance of knowing their students as well as parents of students to provide students with the necessary support and equitable education. Knowing students is part of teachers' responsibilities to demonstrate their pedagogical knowledge. Adams, Jones, and Tatum (2007) argue that knowing students is a necessary precursor to teach for diversity and social justice. In this study, teacher candidates also identified attributes of effective teachers. Following their student teaching, however, they noted the difficulty of demonstrating certain attributes on a daily basis. Teaching effectively may seem easy to observers and non-educators; but it requires time, practice, and experience, and it is a process, not an event. Darling-Hammond and Bransford (2005) caution us on observational-based perspectives or conclusions.

Finding whether teacher candidates would change their perspectives after a semester-long student teaching constituted an important issue this study sought to address. During pre- student teaching interviews, teacher candidates asserted they would stay in the teaching profession until they retire. In post- student teaching interviews their perspectives changed. New imagined possibilities included pursuing graduate studies and pursuing an administrative career. A body of literature (e.g., Goldstein & Lake, 2003; McIntyre, Byrd, & Foxx, 1996) shows that teacher candidates continually construct their identities as they understand the contours of the teaching profession during their field experiences. The college or university and the partner school are two major communities that teacher candidates navigate in their process of learning to become teachers. In the present study, teacher candidates recognized the value of coursework but showed preference for field experiences which, they explained, contributed the most to their experiences of learning to teach. Different studies have suggested field experiences as the most important and powerful component of teacher education programs (Cook, 2007; Darling-Hammond, 2006; Darling-Hammond & Bransford, 2005; McIntyre, 1983; McIntyre, Byrd, & Foxx, 1996).

Because of their perceptions that more learning occurred during student teaching, teacher candidates in this study suggested a longer period (i.e. one academic year) for student teaching. This finding is in line with Darling-Hammond's (2006; see also Gallego, 2001) perspective that extended student teaching is one of the components of stronger teacher education programs. An additional finding related to the duration of student teaching challenged the whole academic year hypothesis. Lany suggested a student teaching model that would last no more than half a semester. This finding may indicate the importance and influence of the

cooperating teacher on the student teacher's experience. Student teachers that had a positive experience with their cooperating teachers suggested that student teaching be expanded to a year. The only student teacher that had a negative experience with her cooperating teacher thought it should be shortened. This finding may also call for the accountability of teacher education programs to provide cooperating teachers with effective professional development and ensure the latter honor their roles and responsibilities.

Recommendations

There are several recommendations that emerge from this study. First, we recommend that this study be replicated with a larger number of student teachers in order to validate some of the trends that emerged in this study. Second, there needs to be additional studies on the impact of the edTPA on the quality of the student teaching experience. The edTPA is designed to be an exit assessment from the teacher education program but at what cost to the culminating student teaching experience for students. Finally, studies need to continue to determine if an extended or year-long student teaching experience results in a better prepared, more effective first year teacher.

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The ELITE Professional Development Model: Excellent Literacy Instruction to Empower
by
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Abstract
The summer slide is a real phenomenon impacting thousands of students every year, most often, economically disadvantaged students. Research demonstrates the best prevention of the summer slide includes students' participation in summer literacy instruction, their access to books, and immersion in motivational activities. This article describes an award-winning professional development model designed specifically to meet these needs for students. The ELITE professional development model is unique in that it the design provides professional development for both teachers and after-school providers while at the same time providing students with quality literacy instruction, access to many books, and engagement in motivational strategies. The article also offers suggestions for replicating the professional development model.

Supporting Literature

With the increasing demands for student achievement and highly qualified teachers, the need for quality professional development is evident. Learning Forward (2017) defines professional development as activities that provide educators with the necessary knowledge and skills to meet state standards and to facilitate effective learning for students. Other current definitions take a learner-centered approach where collaboration, reliance not only on outside consultants but also on teacher knowledge, and a focus on specific problems of practice form the basis for what is best described as professional learning (Lieberman & Miller, 2014).

Professional development should be ongoing, aligned with school and district goals, content-area specific, able to improve teachers' ability to analyze data, developed and provided with teacher participation, and must include a follow-up component (Definition of Professional Development, 2017). Content and pedagogy must be part of effective professional development. Knowing the content and knowing how to teach it effectively are essential in professional learning (Shulman, 1986).

Professional development with coaching can produce significant gains in teacher knowledge and implementation. In a study by Neuman and Cunnigham (2009), participants who attended a 30-hour professional development in the area of literacy and who participated in a coaching group showed statistically significant improvement regarding the literacy environment in their classrooms. Those who attended the same 30 hours but did not participate in coaching did not show significant gains in knowledge or practice.

Other researchers have found no difference between professional development with and without coaching. Walpole and McKenna (2009) found no effects of coaching on student achievement. However, the researchers concluded that the expertise of the coach and the understanding that the coach brings to the coaching context could make a difference in quality of coaching experience and on student achievement.

The summer slide, defined as the reading loss that occurs during the summer when students are away from school, is considered as the strongest

explanation for the widening reading gap between economically disadvantaged students and students of a higher socioeconomic status (Allington & McGill-Franzen, 2018). Cooper, Nye, Charlton, Lindsay and Greathouse (1996), assert that the summer break creates an average of 3 months achievement gap between underprivileged and wealthy students. During the five summers between the beginning of first grade and the end of sixth grade, this achievement gap adds up to a year and a half. When combined with the initial achievement gap that lower-income students have at the beginning of schooling, economically disadvantaged students could potentially leave elementary school 2 to 3 years behind more affluent students (Cooper et al., 1996).

Several studies have found that students in both low and high poverty schools make similar gains in reading during the school year; measured from fall to spring semesters. It is only during the summer break that the difference between low income and affluent students emerges, as evidenced by measurements of reading ability between spring and fall (Hayes & Grether, 1983; Entwisle, Alexander & Olsen, 1997; Borman & D'Agostino, 1996).

Low-income students have significant less access to books at home and at school than do students in higher socioeconomic levels. This inequality is a reason for how the summer vacation creates a summer slide for low-income students (Neuman & Celano, 2001; Allington & McGill-Franzen, 2018). The number of books in a home is almost as strong a predictor of reading success as the level of socioeconomic status (Schubert & Becker, 2010).

In addition to the number of books in the home, motivation and self-efficacy play a part in how students engage with reading. In what is known as the "Matthew Effect" (Stanovich, 1986), good readers read more and in turn become even better readers. Poor readers read less since lack of success hinders motivation. By providing opportunities for successful reading experiences coupled with easy access to interesting books, reading will increase, and skills are more likely maintained through the summer. We created The Excellent Literacy Instruction to Empower (ELITE) Institute based on these beliefs. We developed ELITE as a professional development opportunity encompassing attributes that align with the requirements for effective professional development as outlined in the Learning Forward document. ELITE received the 2018 Quest for Quality: Exceptional K-12 School Partnership Award from the Texas Association of Teacher Educators.

Creating an Innovative Professional Development Model

In the spring of 2018, the school board president of a large urban school district and a trustee of our university approached us with the idea of collaborating in preventing the summer slide in elementary students. We are always enthusiastic about working in partnership with school districts, so we eagerly welcomed this opportunity. When initial conversations began, we had no idea where this endeavor would lead us. However, the one thing we knew for sure was that we wanted to create a unique model that would benefit both students and teachers. Throughout that spring semester, we all met several times for brainstorming sessions. Eventually we landed on common ground, agreeing that a model designed to prevent the summer slide in reading while also providing training for teachers in literacy best practices with immediate coaching would certainly be an innovative model. Our role in the collaboration was to create and design the professional development and the school district would be responsible for marketing and recruitment of students and teachers.

If we were going to offer this program in the summer, time was of the essence. Therefore, for the rest of the spring semester, we worked collaboratively

on the design of the model. We knew we wanted a catchy title that represented the philosophy of the model. We eventually decided on *Excellent Literacy Instruction to Empower* (ELITE). The title stems from our philosophy that research-based best practice pedagogy empowers teachers to deliver outstanding instruction while also empowering students to be creative and imaginative while using their individual learning styles. We also knew that it was critical to create a model that would be fun and enjoyable for all participants. We did not want students to feel as though they were attending summer school. We wanted to build a culture of fostering self-confidence and self-esteem in all the students. From the very beginning, we referred to all students as Ram Readers and planned for the final day to be a time of celebration. Moving forward from this point we developed program goals, learning objectives for teachers, learning objectives for students, and program outcomes.

The *ELITE Institute Goals* consisted of:
- Addressing the summer slide for elementary students in the areas of reading and writing through a literacy clinic setting
- Providing professional development to teachers in best practices for reading and writing
- Providing training for after-school community providers
- Enhancing acquisition of literacy skills through the implementation of reading and writing strategies

Learning objectives for the teachers included:
- Engaging in and improving their personal reading and writing processes
- Learning and applying new strategies for teaching reading and writing in the context of a reading and writing workshop
- Learning and applying reading and writing strategies for teaching culturally and linguistically- diverse students

Learning objectives for the students included:
- Developing an appreciation for reading and writing through participation in engaging activities Participating in a reading and writing workshop
- Reading high-interest, quality literature
- Writing for a variety of purposes and audiences

Expectations for participants included:
- All participants will successfully complete the program
- All participants will demonstrate an understanding and ability to effectively implement best literacy practices
- Students will retain literacy skills learned by participating in the clinic, and continue using throughout the upcoming school year

As we developed these program goals, we were mindful that we did not want to create scripted program. Instead, the ELITE Institute is a philosophy of learning and teaching that provides teachers with autonomy to differentiate, modify, and adapt for student needs. We did create a list of daily "must do's" that included interactive read-alouds, independent reading time, writing, and word work. However, the specific approach for the delivery of activities and the materials used for instruction would be crafted by the teachers.

We then created a supply list including, but not limited to, chart paper, construction paper, notebook paper, markers, crayons, scissors, and glue. We both value and believe strongly in the value and educational merit of using quality children's literature in multi-faceted ways. Therefore, we identified over 100 children's books to use in the ELITE Institute. Books were selected based on a variety of standards including non -stereotypical multiculturalism, author's craft,

rhyming, predictability, sophisticated stories, high interest, and quality as mentor texts.

Table 1. Examples of Children's Literature Used in ELITE Institutes

Picture Books for Mentor Texts	Author
When I Was Young in the Mountains	Cynthia Rylant
The Relatives Came	Cynthia Rylant
Picture from our Vacation	Cynthia Rylant
The Wonderful Happens	Cynthia Rylant
I Love Saturdays y Domingos	Alma Flor Ada
Someday	Eileen Spinelli
Nothing Ever Happens on 90th Street	Roni Schotter
The Day the Crayons Quit	Drew Daywalt
The Day the Crayons Came Home	Drew Daywalt
Hailstones and Halibut Bones	Mary O'Neill

Table 2. Examples of Multicultural Books Used in ELITE Institutes

Multicultural Picture Books	Author
Those Shoes	Maribeth Boelts
Whistle for Willie	Ezra Jack Keats
Peter's Chair	Ezra Jack Keats
The Black Snowman	Phil Mendez
Something Beautiful	Sharon Dennis Wyeth
Uncle Jed's Barbershop	Margaree King Mitchell
Amazing Grace	Mary Hoffman
Princess Grace	Mary Hoffman
Boundless Grace	Mary Hoffman
All Are Welcome	Alexandra Penfold

One of the first decisions we made was that the ELITE institute would take place on the university campus. We wanted the teachers and after-school providers to spend their day on a beautiful campus and away from stale district training rooms. Because most of the participating students had never been on a university campus was another reason we believed it was important to host ELITE on the university campus. We secured classrooms on campus, placed materials in all the rooms, assembled classroom libraries, and arranged furniture to facilitate literacy workshops.

After deliberating a variety of implementation scenarios and considering the aforementioned research, we decided the most effective model was to provide professional development for the teachers the first week, four hours each day. We felt it was important to frontload the teachers with strategies and activities before the students arrived in order to build their confidence when instructing and provide them the weekend to plan for the arrival of the students. The students arrived the second week of the ELITE Institute. Teachers worked with the students for three hours daily during weeks 2 and 3. Table 3 provides an overview of the basic structure of the ELITE Institute. Our goal was to keep student-teacher ratio as small as possible, and we were able to so with groups of 3 to 4 students. During the instruction time

with the students, teachers implemented the strategies and activities learned the week before. We provided literacy coaching before, during, and after instruction every day. We always ended the day with an hour of reflection and coaching with the teachers. We also continued to share literacy activities during the reflection time.

Table 3. The ELITE Institute Model

Week One
- Professional Development for teachers and after-school providers (4 hours daily)   - A variety of reading and writing strategies and activities presented   - A variety of quality literature shared   - Active engagement by teachers and after-school providers
Weeks Two and Three (3 hours of instruction and 1 hour of reflections)
- Three hours of instruction (reading and writing workshop) with students and teachers   - Observations and coaching   - One hour of daily reflections, questions, more strategies, and planning for the next day

The ELITE Institute was fully developed before the end of the spring semester. Two sessions of the ELITE Institute were offered in the summer of 2018, one in June and one in July. Interestingly, more teachers and students participated in the second session. We believe it was because of the positive feedback from the first session participants that circulated throughout the community and social media. The third session of the ELITE Institute was offered in July of 2019. This session had the largest number of teachers and students. Again, we reason it was because word of the ELITE Institute spread throughout the year. Several students even attended both summers. We credit this increase in participation to the affirming and favorable responses of participants.

An unexpected outcome from delivery of the ELITE Institutes was the positive relationships formed between us and the teachers and the students. We were not just their coaches and mentors; we became friends. We were invited to church services. We shared family stories. We laughed and we even cried together. Each day we were greeted with enthusiastic hugs from the students. Students wanted to share their work with us. These remarkable relationships just made the ELITE Institutes more rewarding than we could have imagined.

We were able to provide a celebration on the last day of each ELITE Institute. We decorated with balloons and streamers, purchased snacks, and presented each student with a Ram Reader certificate. Parents were invited to attend the celebration and the majority did. Before everyone left, pictures were taken and a lot of hugs were given, affirming that positive relationships and bonds were formed.

At the end of each ELITE session, teachers and students completed a questionnaire in order to gather data regarding their perceptions of ELITE. Responses were extremely complimentary and approving. One of our favorite statements was from a first-grade boy that said, "I loved everything about being here. The only bad part is that today is the last day!" Another student stated, "I liked everything!" When asked what their least favorite part was, one little boy said, "Having to leave." Questionnaires from teachers revealed their affirming reaction to participating in ELITE. Table 4 outlines some of our favorite teacher quotes.

Table 4. Teacher Quotes about the ELITE Institute

> "I enjoyed the flexibility of working with such a small, intimate group. It allowed for so much more to be learned by the students and me as an instructor."
> "Learning actual implementable ways to teach in fun and engaging ways."
> "I love the pre-training before the students arrived."
> "Teaching strategies; how, when and why to use them. In this camp, I

What Makes ELITE Unique

Several factors make ELITE a unique model for addressing the summer slide. At the professional development level, these include frontloading, immediate implementation with coaching and feedback, daily reflections, books for students, time allocated for reading, motivating activities and parent participation. Specific to the students, the ELITE Institute provides books for students, independent reading time, and motivating literacy activities.

Most of the content is frontloaded for the teachers during the first week before the students arrive. We discuss best practice in the field of literacy. We include the components of balanced literacy, and participants engage in interactive reading strategies and writing strategies in the context of a literacy workshop. During the second and third weeks, we often share a strategy and a book with the teachers during the one hour we meet after students leave for the day. Teachers are able to plan ahead for the two weeks with students. During the time implementing, teachers may and often do modify plans to fit the needs of the students.

Another unique component of ELITE is the opportunity for immediate implementation with coaching. Teachers apply the strategies learned the week before (sometimes the day before) and as we observe in the various classrooms, we make notes that provide opportunities for discussion and feedback. Sometimes we model a strategy with the students. By developing a culture of trust, we all feel comfortable looking for ways to increase the quality of the institute and provide a rich literacy environment for students.

As part of the hour of professional development at the end of each day during weeks 2 and 3, teachers are given an opportunity to reflect on how the day went with their group. They talk about what went well and what could have gone better. This time is important, not only because of the benefits that reflection has on teaching, but also because the whole group engages in discussion. They learn together, make plans to use a book or a strategy that worked for one of them and give each other ideas and support (Toom, Husu & Patrikainen, 2015).

In order to bridge the reading achievement gap between children of poverty and those in high socioeconomic status, access to books is imperative (Neuman & Celano, 2001; Allington & McGill-Franzen, 2018; Schubert & Becker, 2010). Working with community partnerships, each session a bookseller comes to the institute to set up a book fair. Students have the opportunity to browse and select a book for themselves. They enjoy browsing through the books and walking away with their very own. This is one of the most successful parts of ELITE, as most of these students have very few books of their own.

We have built time for independent reading into the daily schedule of ELITE. This is time for self-selected reading from books available in each room. We have observed that once a student finds a book (or even a series) of interest to them, the reading time becomes relevant and time well spent. We also allocate time

for daily read alouds in order to model fluency, expose students to texts that they may not be able to read independently, and create a love for reading.

Motivation increases when readers engage in activities that they enjoy and in successful reading tasks. During the week of professional development, we take the teachers through a plethora of literacy strategies and activities. They engage in each one in order to learn from personal experience. We introduce motivating activities to the students during the two weeks they are with us. All activities include speaking, listening, reading, and writing. We provide extensive classroom libraries for each group and the activities emerge from quality children's literature.

Throughout the weeks of the ELITE Institute when students were present, we noticed an interesting occurrence. Parents and other caregivers brought their children to the institute, usually by walking them there as most students lived around the university. What surprised us was that a community of parents emerged. Many of the parents stayed in the lobby after their children went into their classrooms. These parents met and talked to each other. After a while, they became strong supporters of the program and participated in activities together (some related to ELITE and some outside our scope). We even had a mother of one student and the grandmother of another student who became friends and everyday knitted together in the lobby, using plastic grocery bags for material. They shared their craft with us, with other parents and even with some of the students. In the process, they grew into advocates for ELITE and helped us with some of the logistics and as encouragers. Parents continue to stay and help. We have many opportunities for conversations with them. Together, we impact the literacy development of their children.

Recommendations

Based on our experience during the three ELITE Institutes, we recommend that others who may want to duplicate this model refer to the following suggestions:

Early Planning: Begin early in the year recruiting, planning and collaborating with all potential partners and school districts. We found it time-consuming working out the logistics and building a strong working relationship with the school district. We strongly suggest that advertisement and marketing for the professional development begin early in the spring. It is vital to get the word out and secure students and teachers before other summer plans and commitments are made.

Small Ratio: Maintain the ratio of teachers to students to a maximum of 1 to 4. The small groups allow for personal attention and increased interaction between teachers and students. Small groups also increase student learning and academic learning (Finn, 2002; Steenbergen-Hu, Makel, & Olszewski-Kubilius, 2016).

Teacher Commitment: The program will be more effective, of course, when recruiting teachers with a commitment to literacy, to their professional development and to students. Establishing guidelines for participation (attendance, promptness and planning) increases effective participation.

Logistics: Work out in advance any transportation required. Secure volunteers for bus duty (if applicable) and for daily attendance record keeping. Due to the length of time students worked with teachers (3 hours) we found that snacks were necessary about halfway through the day to keep the students engaged.

Enlist School Principals: Meet with principals early during the year to explain the program and enlist their assistance recruiting teachers. Principals can also identify students that could benefit from participating.

Conclusion

We believe in this program for many reasons. ELITE addresses the realities of the summer slide and it supports the findings from the body of research stressing

the importance of: participation in literacy instruction during the summer, access to books and motivational activities (Allington & McGill-Franzen, 2018). We saw firsthand, students motivated to participate daily, appreciating independent reading time, creating stories through relevant writing activities, enjoying interactive read-alouds, and eagerly participating in a variety of word games. Through professional development, teachers renewed their passion for teaching reading and writing. They were excited as they discovered new books and new strategies. We found it particularly rewarding to hear teachers express an eagerness to implement the ideas from this award-winning program into their own classroom in the new year.

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Assessments as a Means to Support Student Learning for the 21st Century
by
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Abstract

This paper highlights the current literature's portrayal of assessments and assessment systems that promote student learning. Initially, the area of assessment literacy and what it means to be assessment literate is explored. Then, the role that formative assessments can play to support learning in current classrooms is addressed. Finally, the concept of the necessity of assessment systems in the current education system is discussed.

Now, more than ever before, assessments are so centric in the North American Education system due to new educational policies and the growth and development of technology and student diversity which is continuously increasing (Calfee, Wilson, Flannery, & Kapinus, 2014; Fulcher, 2012; Reeves & Honig, 2015; Holbeck, Bergquist, & Lees, 2014). Calfee et al. (2014) argue that the acquisition of knowledge in the 21st century does not rest on the memorization of information. Rather, information managing skills are key, where individuals access materials using existing technology in such a way to maximize their intellectual capabilities. This reasoning is shared by Bereiter and Scardamalia (2013), who compiled a list of essential competencies that are vital, abstract, concrete, and relate theory to practice. Not surprisingly, current educational policies for primary and secondary education reflect the need to promote learning of skills for college and beyond.

The Common Core focuses on literacy and the acquisition of skills as the heart of learning rather than focusing on rote memorization. With the implementation of the Common Core, social studies curriculum, for instance, requires students to learn, acquire, and develop essential literacy skills in order for students to experience success in college and beyond (Breakstone, Smith, & Wineburg, 2013; Gerwin, 2014; Smith, 2017). However, despite rapid policy changes, teachers and students in classrooms throughout the country may not adopt these changes as quickly and effectively as intended. As an example, Smith (2017) revealed in a study aiming to examine the effectiveness of the multiple-choice test, that not only are multiple-choice questions the default type of assessment used but that multiple-choice assessments do not help students achieve historical thinking. That is, students are not challenged to think as historians.

Consequently, it is not clear that assessment practices being implemented in school classrooms are in alignment with the demands of educational policies (Smith, 2017). However, Smith acknowledges that multiple-choice assessment, when designed correctly, could still be useful in developing learning skills and promoting historical thinking. This notion that assessment practices of primary and secondary education teachers need reform is also shared by DeLuca, LaPointe-McEwan, and Luhanga (2016). In their study,

which includes the United States, Canada, United Kingdom, Europe, Australia, and New Zealand, DeLuca et al. (2016) indicated that new assessment practices need to be incorporated and implemented in classrooms in order to match and meet the demands of focusing learning on the acquiring of skills analysis of information rather than memorization of content. Thus, teachers may require support to create assessments which address higher-order thinking and the acquisition of skills demanded by the Common Core.

This paper highlights the current literature's portrayal of assessments and assessment systems that promote student learning. Initially, the area of assessment literacy and what it means to be assessment literate is explored. Then, the role that formative assessments can play to support learning in current classrooms is addressed. Finally, the concept of the necessity of assessment systems in the current education system is discussed.

Views on Assessment Literacies

A primary trend in existing literature regarding assessment literacy is that teachers should understand the use and potential of formative assessments for student learning (DeLuca & Bellara, 2013; DeLuca et al., 2016; Dunn, Airola, Lo, & Garrison, 2012; Fulcher, 2012; Holbeck et al., 2014). Through the use of formative assessments, teachers will be able to examine students' work in a way that will be useful in providing instructional feedback. Following this line of thinking, Guskey (2003) addresses necessary improvements to make assessments useful for supporting effective instruction.

The first change Guskey (2003) suggests is that assessment be made useful for students as well as teachers. Assessments should not simply rank students' according to what they have learned but should reflect what students are learning from instruction. On making assessments useful for students, teachers ought to stop looking at assessments as a way to measure student learning and embrace formative assessment practices that help identify what is and what is not being learned in class. On making assessments useful for teachers, the assessments have to be designed to be a source of valuable information for teachers to improve student learning. Therefore, by looking at students' assessments, teachers should grasp what the students are able to do well and what students need to improve so that they can make adjustments to instruction (Guskey, 2003). The second improvement to make assessments useful to support student learning is to follow assessment with corrective instruction. Corrective instruction must not be equated to re-teaching but on careful selection of approaches that match the students' learning traits and needs. The third improvement to make assessments useful to support student learning is to allow for students to have second chances to demonstrate success. As explained by Guskey (2003), "assessments must be a part of an ongoing effort to help students learn" (p. 8). These recommendations suggested by Guskey are in precise alignment with the definition and purpose of formative assessments.

An additional current trend in education is to look at assessments as a way to be accountable to several stakeholders in the educational process (DeLuca et al., 2016; DeLuca & Bellara, 2013; Fulcher, 2012). That is why, to be assessment literate, it is essential that teachers understand how to use assessments for accountability purposes (DeLuca et al., 2016; DeLuca & Bellara, 2013; Fulcher, 2012; McGee & Colby, 2014; Neal, 2013; Rothman &

Marion, 2016). This requires teachers to understand the basis of assessment purposes and designs. Teachers must become familiar with the assessment measures used in the classroom as well as large-scale standardized measures. They need to understand the skills being measured, know how these assessments are designed and scored, and be familiar with the format of these assessments. DeLuca and Bellara (2013) explain one way to account for the type of instruction that happens in the classroom is to create a deliberate alignment between classroom instruction, classroom assessments, and the learning standards that are adopted in the schools. If misalignment exists between instruction and classroom assessment or between classroom instruction and standardized assessments, teachers will not easily account for the type of learning and activities that take place in the classroom.

Similarly, Fulcher (2012) explains the need for establishing aligning practices in assessments. However, Fulcher (2012) argues the alignment must be implemented in the test design and development in terms of large-scale standardized testing, classroom testing and washback, and validity and reliability. Teachers should not only be able to understand standardized tests but also design tests that follow the principles of reliability and validity for their students.

Another area for assessment literacy, in addition to designing classroom assessments to meet the demands of the contemporary policies of student learning, is to be able to meaningfully communicate these results with stakeholders (DeLuca & Bellara, 2013; Dunn et al., 2013; Holbeck et al., 2014; McGee & Colby, 2014; Reeves & Honig, 2015). However, in a study conducted with pre-service teachers by McGee and Colby (2014), the results indicate that the design of assessments and the communication of meaningful results are among the lowest skills of pre-service teachers in the study. Regardless of the level of readiness of pre-service teachers, it is clear that the demands of assessment literacy are changing and focusing on much more than traditional knowledge of testing and ranking of student learning.

The Importance of Formative Assessments in the Current Context

Confusion about the concept of formative assessments is not uncommon. Formative assessments are not a specific type or format of assessment such as open-ended or multiple-choice assessments. Instead, formative assessments are defined for the purpose that they serve in the learning process. As Cauley and McMillan (2010) suggested, an assessment is formative when the information generated from it serves the function to improve the functioning of a system. According to Heritage (2013), assessment in general serves two primary purposes: "(1) to provide information on students' current levels of achievement to the present time and (2) to inform the future steps that teachers need to take in classrooms to ensure that students make progress toward desired outcomes" (p. 180). Within these two main uses of assessment, the former focuses on the past while the latter focuses on the future. Formative assessments are not designed to measure student learning. Instead, it is a process to collect evidence of student learning so that feedback is provided based on this evidence of learning, a carefully programmed process in which the evidence of student learning is continuously being collected. Then, this information is directed to promote student learning (Cauley & McMillan,

2010). In the view of Cauley and McMillen (2010), student learning improves as a result of four characteristics of formative assessments,

> "1. Frequent, ongoing assessment allows both for fine-tuning of instruction and student focus on progress. 2. Immediate assessment helps ensure meaningful feedback. 3. Specific, rather than global, assessments allow students to see concretely how they can improve. 4. Formative assessment is consistent with recent constructivist theories of learning and motivation" (p. 2)

These four elements of formative instruction are relevant for the correct context of education. Several scholars argue that student data plays a vital role in teachers' decision-making concerning aspects of instructional planning practices and the selection of the type of support to provide students (DeLuca & Bellara, 2013; Dunn et al., 2013; Holbeck et al., 2014; Rahman, 2018; Reeves & Honig, 2015). This notion is predicated on the idea that classroom information about students can reveal their academic strengths and weaknesses in relation to their expected achievement goals. Thus, being able to know how students are doing in their learning process is key to making informed decisions about instruction and the provision of useful feedback.

The assessment literacy skill of using student data to make informed decisions about instruction goes hand in hand with all the characteristics of formative assessment. However, the first two are directly connected. Frequent, ongoing assessment allows both for fine-tuning of instruction and student focus on progress; immediate assessment helps ensure meaningful feedback because, in order to collect data of students with the potential for productive use, the collection of data must be constant and comprehensive. Feedback can be effectively delivered due to data collected from an ongoing assessment of student learning (Cauley & McMillan, 2010).

Formative assessment, specifically because of its first two characteristics, is suitable to serve the purpose of monitoring learning. Traditionally, this has not been the focus of assessments. Instead, the focus has been more summative, measuring achievement of learning (Rahman, 2018; McGee & Colby, 2014). However, research suggests that assessments may also serve the function of monitoring learning (Buyukkarci, 2014; Cooper, Klinger, & McAdie, 2017; Dunn et al., 2013; Holbeck et al., 2014; Rahman, 2018; Yao, 2015). For instance, Yao (2015) conducted a focus group study to explore teacher perceptions and views of classroom assessment in order to grasp their perceived relationship between assessments and instruction. Among the results of the study, teachers indicated that formative assessments in their classrooms allowed them to check the progress of their students at both the group and individual levels. As Yao (2015) reported in the findings of the study, "The participants said that the assessments gave them the tool to monitor student progress in learning. As one of them said, an assessment was an 'autopsy.'" (p. 55). In this case, just as an autopsy is specific to a particular individual, so is the information generated from formative assessments. This is why the role of formative assessment in instruction is essential in the current context because, with the demands of differentiated instruction and higher-order thinking demanded by Common Core, formative practices serve the purpose of giving out the information necessary to respond to student needs effectively.

A further area that highlights the need for the use of formative practices of assessment is differentiated instruction. Calls for differentiated instruction in the contemporary context of education only continue to increase as the diverse needs of students continue to grow (Pham, 2012; Santangelo &Tomlinson, 2012; Smets & Struyven, 2017). Students' diversity increases in terms of culture, social characteristics, and academic development (Pham, 2012). This is why differentiating instruction is one of the core skills for teachers to have. Differentiated instruction can be understood as a process in which teachers get to know the students at a very personal level in terms of their personal learning traits, learning capabilities and limitations, and their specific academic needs. Based on this close knowledge of the students, teachers can tailor instruction to respond to the heterogeneity of students in an informed manner (Faber, Glas, & Visscher, 2017; Pham, 2012; Santangelo & Tomlinson, 2012; Smets & Struyven, 2017).

Exploring the perceptions and implementation of differentiated instruction, Santangelo and Tomlinson (2012), in their study with pre-service teachers and teacher educators of primary and secondary schools, found limited evidence that teacher educators teach pre-service teachers about the implementation and use of a comprehensive model of differentiation. Teacher educators missed the opportunity to use a model of differentiation that has the interdependence of assessment and instruction. This finding is perplexing because, for Santangelo and Tomlinson (2012), it suggested that "…from a modeling perspective, this suggests candidates have little opportunity to experience how assessment data can—and should—serve as the core from which decisions about differentiation are made" (p.323). Another finding of the study indicated that teacher educators themselves conduct a minimal amount of assessments of pre-service teachers, suggesting that they may not implement differentiation based on a systematic process, but rather a random process (Santangelo & Tomlinson, 2012). This is troubling because, in the view of these researchers, without ongoing assessments, differentiated instruction tends to be a random process.

Watts-Taffe, Laster, Broach, Marinak, Connor, and Walker-Dalhouse (2012) conducted a study that documented differentiated instruction as a success in elementary schools in the area of reading instruction. The researchers highlighted that much of the credit for the success of the system of differentiation could be attributed to formative practices of assessment. Formative assessment tools were the centric factor for these teachers to decide how to group students and the type of differentiation that would meet the needs of these different groups. Thus, it is crucial to notice that the teachers in the study had a system in which re-groupings occurred very often. This constant re-grouping was necessary because the assessment that was driving the differentiation for the groups was not a one-time process.

This is why formative assessments have the potential to play such a centric role in current assessment practices. The characteristics of formative assessment allow for teachers to keep reorganizing groups constantly because the needs of the students are not static. Employing mechanisms of differentiation based on the results of summative assessments may not be the most effective manner to implement differentiated learning (Watts-Taffe et al., 2012). An example illustrating why differentiated instruction fails is explored by Faber et al. (2018).

In their study, the researchers compared the results in achievement between a group that used differentiated instruction based on a standardized assessment named Cito, produced by the Dutch Institute for Test Development, and a group that did not use a specific protocol for differentiation. Surprisingly, Faber et al. (2018) found no significant positive effects on differentiated instruction practices. The researchers explained, however, that in retrospect, this finding made sense because teachers who implemented differentiation of instruction created instructional plans for differentiation based on the results of the Cito standardized assessment. In this type of differentiation, students are categorized into one of five performance categories. However, because of the nature of standardized tests, these categories of differentiation were maintained for too long. In a year timeline, this meant that teachers most probably only planned for differentiated instruction two times per year. The researchers acknowledged that a more continuous source for differentiating instruction was needed, one including both formative and qualitative assessments to ensure that teachers are continually implementing differentiation based on the current development of the students rather than at the end of the semester assessments.

Assessment Systems

Another important concept that has the potential to make a difference in the arena of assessment is the concept of assessment systems. Unlike a series of misaligned assessments that will not serve the development and improvement of learning, an assessment system is the inclusion of multiple valid assessment tools that provide information that can be translated into actions to improve student academic performance and achievement (Conley & Darling-Hammond, 2013; Dunn et al., 2013; Neal, 2013; Rothman & Marion, 2016). The rationale for the need for assessment systems has its origin in the realization that traditional forms of assessments alone, such as summative and open-ended tests, do not capture the new skills and competencies required of students in the 21st century (Conley & Darling-Hammond, 2013; DeLuca et al., 2016; Dunn et al., 2013; Fulcher, 2012; Neal, 2013; Rothman & Marion, 2016). However, if an aligned system of assessment that utilizes both formative and summative tools is implemented, the result will be an improved system of information for teachers to make informed decisions and improve student learning.

Rothman and Marion (2016) conducted research that documented that assessment systems are a promising opportunity to both serve the purpose of accountability and to aid student learning. In their study, Rothman and Marion (2016) identify that locally created assessment systems such as The Performance Assessment of Competency Education (PACE), being implemented in New Hampshire, offer great potential in terms of aligning assessments at the classroom, school, district, and, possibly, state level. According to Rothman and Marion (2016), in this assessment system there are five layers to ensure quality control; "professional learning and collaboration, content-area leads, technical review, state review, and data review" (pp. 36-37). Ultimately, Rothman and Marion (2016) recommended that other school districts follow the example of New Hampshire. Nevertheless, the study does not provide evidence of the level of success of this assessment system.

Another significant advantage of using assessment systems is that the information gathered from classrooms can be used to serve multiple purposes (Conley & Darling-Hammond, 2013; Dunn et al., 2013; Neal, 2013; Rothman & Marion, 2016). For instance, Conley and Darling-Hammond (2013) argue that assessment systems can provide information for accountability purposes, information useful to evaluate local education programs, and as well as information that can be useful to inform teaching practices. In this same topic, Neal (2013) specifies that current assessment systems usually try to accomplish two particular objectives. First, to provide information about student achievement, and second, to aid teachers to instruct most effectively by linking data from the accountability systems in terms of assessment measures and the instructional practices that are most likely to lead to the achievement of the desired goals.

Conclusion

As current policies of education, such as Common Core, aim to prepare students for college readiness and beyond, the need to design assessments that support instruction is key to the achievement of this endeavor. In order to ensure that the demands of education are met, pre-service and in-service teachers must be assessment literate (DeLuca & Bellara, 2013; DeLuca et al., 2016; Dunn et al., 2013). Traditionally, assessment literacy could be understood as a set of professional skills concerning technical knowledge of psychometrical skills and design (DeLuca et al., 2016). However, modern re-visitations to assessment literacy call upon the need for teachers to be able to understand the role of formative assessment as well as provide feedback and report to stakeholders. This is why formative assessment practices should play a centric role in the type of assessments that are responsive to the demands of current policies of education. Formative assessment, due to its characteristics such as their ongoing and continuous nature, can form the basis for differentiated instruction. Some scholars suggest that formative assessments are the blueprint for differentiated instruction (Faber et al., 2018; Pham, 2012; Santangelo &Tomlinson, 2012; Smets & Struyven, 2018). In addition to differentiated instruction, formative assessment plays a centric role in the provision of useful feedback because, by the use of assessment tools with focus on student learning, teachers are able to look at the current state of student learning and better respond to their needs via instruction and feedback (Cauley & McMillan, 2010).

The importance of formative assessment and assessment literacy is centric for the development of higher-order thinking, thus, teachers ought to be able to create assessment systems that work to aid student learning goals. An assessment system permits teachers to use formative and summative assessments together in an aligned form (Conley & Darling-Hammond, 2013; Dunn et al., 2013; Neal, 2013; Rothman & Marion, 2016). This way, teachers can count on a system that not only serves for accountability purposes but also to make informed decisions on teaching interventions that are effective in meeting students' needs. In an educational context where the views of learning are turning towards the achievement of critical thinking skills, the use of assessment systems and formative assessment practices becomes necessary for school teachers to align their instruction and assessment practices to the current demands of education in the 21st century.

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Review of NeuroTribes: The Legacy of Autism and The Future of Diversity, Silberman, S. (2016), New York, NY: Random House.
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Abstract
NeuroTribes: The Legacy of Autism and The Future of Diversity takes a closer look at the history of those individuals who have unique ways of perceiving and reacting to the world. While society has often deemed such diverse thinkers as "broken" and needing fixed, Silberman shows these thinkers are often exactly what the world of science and engineering need. Written as a narrative, Silberman takes the reader through time and shows that diverse thinkers have always been around; what has changed over the years is society's response to them.

While addressing the needs of diverse learners continues to be at the forefront of teacher preparation programs, the actual definition of diversity itself is rarely discussed. According to Webster's Dictionary (www.merriam-webster.com, 2019), diversity is, "the condition of having or being composed of differing elements **:** VARIETY." Often, however, diversity is viewed strictly as cultural or racial differences. Diversity is differing elements, a variety of elements, and the book *NeuroTribes: The Legacy of Autism and the Future of Neurodiversity* reminds the reader that diversity also includes those with different thought patterns.

NeuroTribes is the history of diverse thinkers, particularly those on the autism spectrum. Author Steve Silverman takes the reader on a compelling journey, starting with the amazing inventions of Henry Cavendish, a brilliant man in the mid 1700's whose ". . . tireless explorations ranged across an entire university's worth of disciplines, encompassing chemistry, math, physics, astronomy, metallurgy, meteorology, pharmacy, and a few fields that he pioneered on his own. . . he defined the scope, conduct, and ambition of the scientific method for centuries to come" (p. 21). Yet he wore the same exact outfit for years, took the same walk every night, ate the same meals every day, and rarely socialized or even spoke to people. He's known today because his peers recognized his brilliance and replicated his work, or published his papers for him. Cavendish is one of several figures Silverman describes and bring to life, allowing the reader to glimpse the similarities, patterns, and difficulties that have plagued diverse thinkers for centuries.

The parents of these neurodiverse thinkers have also been present for centuries, often fighting their own battles to find a better space and education for their children. In the 1930's in Austria, parents were desperate to find some help for their children who were atypical. Dr. Karl Asberger began studying these unique children in earnest, looking for similarities between the children. He noted their skills lay on a spectrum; some were brilliant, some were verbal and some were not, most were socially awkward, but all had extraordinary minds if given the space and time to learn to communicate. He recognized the pivotal role nurture played in in the growth of students who initially appeared to be broken by nature. Asperger's work, however, struggled to find an audience after WWII. While not a Nazi or a sympathizer, he wasn't part of the resistance, and Asperger's work stayed in German hands for years.

In America, Dr. Leo Kanner believed these unique learners were simply showing the first signs of childhood schizophrenia. His work would shape the attitudes towards neurodiverse learners for decades to come, culminating in his quiet acceptance of childhood immunizations leading to autism. Not until the 1980's was there a wave of parents, supported by doctors and research and the uncovered work of Asperger, who started to fight for these unique learners to have their own diagnosis, their own education, and their space in society. Eventually it was recognized these diverse learners fall on a spectrum, and the term Autism Spectrum Disorder (ASD) is currently recognized in research and literature world-wide.

Today, technology allows neurodiverse learners to find their tribe. Chat rooms and social media give them the freedom to craft their thoughts without having to read faces and respond quickly. Conferences provide care-givers and those with ASD ideas on how best to navigate agencies and support systems. People like Temple Grandin prove that while certainly unique, people with ASD have much to offer, and their diverse thinking might be exactly what the sciences and engineering fields need.

Yet schools to often view these learners as "broken," students who need strategies so they can be fixed. Silberman argues that these students are not broken, just different. While they may need support in some areas (particularly social skills), their quick minds and unique outlook make them highly gifted in areas many are not. It's suggested that Silicon Valley is filled with men and women who, if tested, might fall on the Autism spectrum, but they've learned to overcome their biggest challenges. Instead of being set apart, institutionalized, and perceived as lacking, neurodiverse adults can find a field that embraces their unique thinking patterns, allows them to work quickly and dedicatedly to the task at hand with an intense focus, and celebrates their obsession with details and explicit plans.

As a mom with a 16 year-old-son on the spectrum, this book reminded me to keep fighting for what my son needs, and to help others understand his true strengths. So many of the individuals in *NeuroTribes* found success because one person saw the magic within them and pushed to help them explore it and share it, and that one person may be an educator. Today's diverse learners might be tomorrow's engineers, architects, or scientists if given the time, space, and structures that allow them to flourish. Educators must continue to note that diversity includes many different elements, and all should be recognized as valid and important for today's changing world.