



Education Theory & School Realities

Lama Bergstrand Othman, University of Wisconsin--Whitewater

Abstract

Factors associated with special education teacher shortages include stress, lack of support, personal factors, and the inability to create connections between the specialized college courses and everyday school-based practices. Examining the different components of the teacher preparation programs and their feasibilities within the reality of Pre-kindergarten through Grade 12 schools will provide insight that could improve teacher preparation programs. In-service and pre-service special education teachers reflected on their on-the-job practices and how these practices relate to the teacher preparation program that they have successfully completed. In this paper, these reflections are examined in light of theory-to-practice models.

Keywords: *Theory to practice, special education, teacher preparation, student teaching, individualized education plan, transition goals*

Introduction

According to the U.S. Department of Education's Office of Postsecondary Education, special education continues to be one of the highest-need fields in the country (Cross, 2017). Many factors contribute to this need, including stress and burnout, lack of administrative support, personal and contextual factors related to teaching (Berry et al., 2011), and ambiguity in caseloads and responsibilities, as well as position inconsistencies (Theoharis & Fitzpatrick, 2013)

Despite the breadth and depth of knowledge students obtain in their prospective teacher preparation programs, novice teachers can easily be overwhelmed by responsibilities such as attending to each student's schedule, improving students' behavior, and enhancing their academic performance. It has been well established that student outcomes improve when partnerships occur between Pre-kindergarten–12 (PK–12) schools and institutions of higher education (IHE). Improving the quality of teacher candidates' collaboration with one another and with their supervisors is one element that might mitigate these issues (Iskan, 2015).

Beginning special education teachers have the technical knowledge to work with students on foundational skills, but they may struggle to connect their own educational knowledge to the intervention programs used in their cooperating schools (Brunsting et al., 2014). Therefore, it is recommended that such links be substantiated during students' coursework by comparing evidence-based practices to practices used in specific school districts (Brownell et al., 2011; Iskan, 2015).

Both PK–12 schools and IHE need to be open to new ideas that may bring changes to each program's framework (Altieri et al., 2015). Efforts to bridge the gap between teaching theory and

teachers' practice have not yet come to fruition (Kimball, 2016). Hence, this paper will further investigate the difficulties that contribute to the gap between theory and practice by interviewing teacher candidates and experienced teachers and asking them to reflect on what factors they think contribute to this gap. This research aims to answer the following research questions:

1. What are experienced teachers' and student teachers' perspectives on their ability to apply what they have learned in IHE in their classrooms?
2. What recommendations do experienced teachers and student teachers have for IHE to help in-service teachers transition to their future roles as special education teachers?

Participants were either experienced teachers who had earned undergraduate degrees in education from various colleges in a Midwestern state, or they were student teachers pursuing undergraduate degrees in education from the same state. Three experienced teachers who had supervised student teachers as well as one student teacher and one student teacher intern were interviewed (Table 1).

Table 1: Participants Information

	Role	License and Degree	Formal Teaching experience	School grade level
Participant 1	Teacher	Cross-Categorical License	15 years	Elementary and Middle school
Participant 2	Teacher	Cross-Categorical License	8 years	High School
Participant 3	teacher	Cross-Categorical License	27 years	High school
Participant 4	Intern student teacher	Cross-Categorical License	3 months	Elementary
Participant 5	Student teacher	Cross-Categorical License	3 months	Middle to high school

The interview conditions can be described as authentic or realistic, because they were not preceded by specially designed elements to enhance the student teachers' experiences at their cooperating schools.

Method and Data Collection

There are five participants in this study: three experienced teachers who had a bachelor's degree in education, one student teacher was pursuing a bachelor's degree in education, and one intern teacher who was pursuing a bachelor's degree in education as well. All participants are

graduates of various higher education institutions in a midwestern state in the United States. Participants in this article will be referred to as participant 1 through participant 5.

Participant 1 was a cross-categorical special education teacher with a second degree in vocational rehabilitation. Participant 1 has 15 years of school experience and currently works with students with high support needs in middle school but has also worked in elementary schools. Participant 2 was a special education cross-categorical special education teacher with eight years of experience teaching high school students with varying levels of support. Participant 3 was a cross-categorical special education teacher with 27 years of experience who worked with high school students who require varying levels of support. Participant 3 also has prior experience working with elementary and middle school students. Participant 4 worked as an undergraduate intern in a high school, providing academic support to students with low support needs in subjects such as math and English Language Arts (ELA). Participant 5 was an undergraduate student teacher completing their field experience in an elementary school, primarily working with students with Emotional and Behavioral Disorders (EBD). Participants 4 and 5 were both in their final semester and were completing their final field experience. However, participants 5 worked more closely with a cooperating teacher and was not given full responsibility of a classroom or full caseloads, while the intern student teacher (Participant 4) was given full classroom responsibilities and full caseloads.

Each participant was interviewed once, and the interviews lasted between 47-65 minutes. The interviews were audio recorded and transcribed, then two graduate research assistants cross-examined the accuracy of the transcriptions. The researcher examined the interviewees' responses and identified themes and categories for the open-ended questions and answers. The researcher contacted participants whose answers were ambiguous as a result of the use of speech fillers and sought clarifications. Participants' responses were manually coded into two themes: those directly related to the interview questions (expected themes) and those inspired by the participants' narratives (unexpected themes). For information on expected and unexpected themes, see Table 2. Three criteria were used to determine the presence of a theme: whether more than one participant addressed the theme, whether the topic was addressed intensively even if only by one participant, and whether the topic was related to theory or previous research. Some of the themes were broken down into sub-themes. One theme, for instance, involved experienced teachers discussing how their practices change more frequently than they would like. This theme was further divided into changes to the curriculum, changes to the intervention programs, changes to the assessment process, and changes to the standards (Table 2).

Table 2: Data

Expected Themes-Inspired by Interview Questions	P1	P2	P3	P4	P5
Participants stated that they were able to apply what they learned in the following courses:					
Classroom Management	√	√	√	√	
Writing IEPs	√	√		√	√
Behavior Intervention		√	√		
Transition		√	√		
Participants stated that they could only apply what they learned in the standardized assessment course to a limited extent	√	√		√	√

Participants identified the following as areas of difficulty for student teachers:					
Time spent writing the edTPA	√		√	√	√
Teaching content at varying rates of instruction based on the instructional needs of each individual learner		√	√		√
Managing a busy and consistently changing daily schedule			√	√	√
Participants made the following suggestions to help novice teachers transition to working in school settings:					
Create a more credit-hour-intensive IEP course	√		√		
Train pre-service teachers on how to work with students who have mental health issues	√	√	√		
Prepare in-service teachers to work with students with autism	√				
Expose pre-service teachers to academic intervention programs	√	√			
Expose in-service teachers to state required assessment		√	√		
Discuss how to successfully write and submit the edTPA while attending to school-related tasks.				√	√
Unexpected Themes-Inspired by Participants' Narrative	P1	P2	P3	P4	P5
Participants reflected on the nature of the rapid change that occurs in their schools from one school year to the next. These changes can be classified into the following categories:					
Changes related to the standards		√	√		
Changes related to assessment	√	√			
Changes related to the curriculum		√	√		
Changes related to intervention programs	√	√			
Challenges related to logistical unexpected daily changes					
Uncertainties in the assessment process	√	√		√	
Behavioral challenges		√			√
Managing multiple schedules	√		√	√	
Absence of teachers or students			√		√

Note: P=Participant

The number of coding agreements among the researcher and two graduate research assistants were counted, and the reliabilities of the themes and sub-themes ranged from 89 to 95 percent.

Interview Questions for the Experienced Teachers

- (1) Talk about times when you were able to make full connections between your undergraduate coursework and everyday practice in your classrooms.
- (2) Talk about times when you were able to make partial connections between your undergraduate coursework and everyday practice in your classrooms.
- (3) Talk about times when you were unable to make connections between your undergraduate coursework and everyday practice in your classrooms.
- (4) What do you suggest the university, cooperating teachers, or student teachers could do to make that full connection happen?
- (5) Describe some of the most challenging aspects of the student teaching experiences.

- (6) Make suggestions for how you or the university can overcome these challenges.

Interview Questions for the Student Teachers

- (1) Talk about times when you were able to make full connections/implementations between your undergraduate coursework and everyday practice at your cooperating school.
- (2) Talk about times when you were able to make partial connections/implementations between your undergraduate coursework and everyday practice at your cooperating school.
- (3) Talk about times when you were unable to make connections/implementations between your undergraduate coursework and everyday practice at your cooperating school.
- (4) What do you suggest the university, cooperating teachers, or student teachers could do to make that full connection happen?
- (5) Describe some of the most challenging aspects of your student teaching experience.
- (6) Make suggestions for how you, the cooperating teacher, or the university can overcome these challenges.

Expected Themes

Topics Intensively Covered in the Teacher Preparation Program

The teacher candidate and experienced teachers stated that they learned a lot from classes that addressed Individualized Educational Plans (IEPs), classroom management, and behavior modification.

The classes that I think of that I definitely made those connections with, were the foundations of education classes, a foundation of reading class, an IEP assessment class, that I found very beneficial, and the class on classroom management that covered information that has helped me in my current classroom. (P 1, experienced teacher)

Obviously, IEPs have changed since I graduated from college, but I've taken a lot from what I've learned in these classes about writing IEPs and writing objectives in general. I had to tweak what I have learned because things change so fast (P3, experienced teacher)
I would say classroom management. I've used several different strategies [from that class]. One that stuck out to me was love and logic just because when I did my student teaching, I had a teacher who used it and I got to do a book study on it, so that was really cool! (P2, experienced teacher)

However, the experienced teachers expressed that the assessment classes they took addressed assessment tools that they did not need to use at their schools and suggested that the assessment courses shift their focus to curriculum-based assessment and assessment of reading profiles.

In the assessment class, I would really focus on some reading assessments. I'm sure it's hard for them [universities] to keep up [with the changes at PK–12 levels], but [it is beneficial to administer] different reading assessments and how to incorporate results into their [students'] IEPs. (P1, experienced teacher)

There're always different interests, inventories, and intellectual tests that we do, like now we have the DLM [state required academic assessment] and the alternate assessment [that are given to students with intellectual disabilities in order to assess their performance in various academic areas] so all the testing has changed; the stuff that you learned at school, you can't really implement. There're things that they [student teachers] can't be exposed to [prior to working at PK–12 school settings]. (P3, experienced teacher)

Elementary and middle schools focus very much on math and reading goals. At the high school level, it's harder because it is credit based. When you're working with a “severe disability,” students are essentially transitioning into a long-term care and when you're working with students with learning disabilities they might be transitioning into college. (P2, experienced teacher)

A Change in Perceived Cases of Autism and Mental Health

The experienced teachers expressed the need for teacher preparation programs to more thoroughly cover certain specific disabilities because of a perceived increase in the number of cases, a perceived need for more specialized intervention, or both. One teacher emphasized the need to cover knowledge and training practices relevant to Autism Spectrum Disorders (ASD) in teacher preparation programs. The teacher expressed concern that the number of students diagnosed with ASD has increased. The experienced teachers also stressed the importance of knowledge and interventions relevant to mental health issues as they observed a growing number of students who needed help with depression, bipolar disorder, and even suicide. One teacher expressed the need for teacher preparation programs to address covert behaviors through methods such as suicide prevention. The same teacher added that there is a school psychologist, but the school psychologist cannot accommodate everyone due to their busy schedule.

Autism Spectrum Disorder is an area where I feel anything that college students could get would be very beneficial for their students; We've seen the rates of autism go up and I think that college students could do a level 1 training. (P1, experienced teacher)

I think the number one battle that we are fighting right now is mental health. I remember that class where we read a book on bipolar, and I learned about oppositional defiant disorder, conduct disorder, ADHD. You learn about all these different things [in college], but when you get to your school you [need to] learn about all the programs that are or are not available. (P2, experienced teacher)

The other thing that is so prevalent right now [in PK-12 settings], and we're learning more about, is the students at risk of committing suicide. I just feel university students should be exposed to spotting the signs and making referrals. (P2, experienced teacher)

Unexpected Themes

Rapid Changes in the PK–12 School Settings

The experienced teachers raised concerns about the fact that school districts change their curriculum and/or intervention programs frequently, which makes it very hard for IHE to cover the constantly changing programs. This theme arose when the interviewees were asked about times when they were unable to make connections between their undergraduate coursework and everyday practice in their classrooms. The experienced teachers were not sure whether IHE could keep up with such changes. Participants also mentioned assessments as another area of education that faced constant change. Two experienced teachers stated that there was so much state testing going on that it was hard to keep up with, especially considering the speed at which these assessments change. Participant 1 offered the following explanation:

DLM [Dynamic Learning Maps] is a required state test that assesses the academic progress of students with the most severe cognitive disabilities in English Language Arts and Mathematics. So, there's so much state testing. This is the other thing I would try to at least inform student teachers. This has honestly changed four times probably in the last few years, from WKCE to the Badger, now to the Forward [examples of state-required testing].

Another area of frequent change that experienced teachers mentioned was the instructional and intervention programs used. The experienced teachers stated that various factors, including grade level, could affect how well a program is implemented.

READ 180 [a commercial reading intervention program] wasn't even here at the high school when I started, and now it's in elementary, middle, and high school, and we're slowly phasing it out of the high school because it's working in the lower levels better. We got the updated version and so we had to go to another training. (P1, experienced teacher)

Next year, I'm going to be co-teaching a world history class, teaching a pull-out social studies class and a technology education class, and then I have resource room. So, it changes from one year to the next. I've never taught the same thing in all eight years that I've taught, not one year to the next. (P2, experienced teacher)

Right now, we use the common core standards [of ELA and math] a few years ago that was different, and it sounds like that could be changing so I realize that that's a hard thing to keep up with especially at the university level. (P1, experienced teacher)

Busyness and Uncertainties

There was a consensus among participants that their work lives are busy, in part because of constantly changing schedules and situations. One teacher candidate used the term “flexible” to describe the role of special education teachers and added that they did not know what their cooperating teacher would have done if they had not been helping them with their case load.

Participants provided information on the factors that contributed to their busy workdays. Teachers spent a significant amount of time on testing (especially state-required testing) and accommodating each student as required during testing. Circumstantial factors also contributed to participants' busy and inconsistent schedules: a teacher might pull a student out to give them a test, but downloading the test might take anywhere from five minutes to an hour; a student who was scheduled to take a test on a specific day might be absent; or a student with behavioral challenges might be struggling, which takes time from their schedule and that of the other students in the class. Participant 4 explained some of these factors:

There are many things that change throughout the day that I feel I end up using one concrete lesson plan a day when I've written ten. Because it [the schedule] changes so much, or a kid doesn't come [to school]. That's a lot of time to spend on lesson plans and not be able to actually implement because of daily things that come up. I feel there are so many things I want to try and do, like different projects, but I feel there's just not enough time.

Participant 4 went on to explain the most difficult aspects of scheduling for them:

I would say the most challenging thing is juggling those schedules. Because being in a cross-categorical classroom, certain personalities just don't mix. So, there are a few times during the day where you just get two students in the same room that are going to set each other off and it happens pretty frequently; on a weekly basis that is.

Discussion

Rapid Changes in the PK–12 School Settings: Can IHE Catch Up?

In this study, experienced teachers were more articulate when describing the changes that occur within their schools from one year to the next. The student teachers did not talk much about these changes, probably because they had not been teaching long enough to witness them. The experienced teachers discussed changes to the standards that students must meet by the end of each school year, changes to the state-mandated assessment tools and the processes that go with them, and changes to the curriculum and intervention programs that their school districts use (Table 2). The constant change in their year-to-year practice may limit their opportunities to accumulate knowledge and experiences needed to bridge the knowledge they gained through their teacher preparation program to the intervention program or assessment tools used in their school.

Despite the changing nature of intervention and assessment programs in PK–12 settings, the experienced teachers suggested that IHE integrate knowledge related to the most commonly used programs in PK–12 settings into preservice teachers' course work (Table 2). Student teachers are equipped with knowledge of evidence-based reading, math, and content area instruction, which is in essence not different from the recommendations offered by the US Department of Education *Improving Reading Outcomes for Students with or at Risk for Reading* (Connor et al., 2014). Once aspiring teachers are given authentic opportunities to teach, that knowledge can make a difference in their students' performance (Diez, 2010). Similarly, it is expected that novice teachers will use the rigorous methods or formal theories that they learned at their IHE to create informal theories that are based on the unique components of the school environment and its culture (Reason & Kimball, 2012). Despite the constantly changing practices in PK–12 settings, experienced teachers

in this study suggested that IHE should focus more on PK–12 culture, challenges, and logistical variables in general, all of which fall under informal theories in Reason & Kimball (2012) model. Only one experienced teacher mentioned a formal theory (Love and Logic); many of the experienced teachers' recommendations for the IHE were more related to integrating knowledge of school-based logistical variables.

Logistical Factors and Busyness

When busyness arises from uncertainties, one cannot help but examine the situation closely. Participants in this study emphasized how their unpredictable daily schedules interfere with their plans and what they intend to achieve with their students. According to the participants, these inconsistencies are related to the time-consuming state-mandated assessment process, challenging student behaviors, managing conflicting schedules of students with different support needs, and unexpected absences of students and/or teachers (Table 2). Should these challenges be addressed in the coursework to bridge the gap between theory and practice, or are these circumstantial or logistical issues that should be addressed in-service rather than pre-service? If we decide on the latter and continue to view these challenges as irrelevant to teacher preparation programs, how can we bridge the gap between theory and practice?

The theoretical components covered within teacher preparation programs need to be put into practice by novice teachers. In that case, the gap between theory and practice is natural. However, if the gap between theory and practice results from logistical factors, then it will not be possible to bridge the gap by making changes only to teachers' preparation programs; changes should also extend to the PK–12 schools. Based on the participants' responses, it appears that some teachers think they are busy addressing technical aspects of teaching, so they do not have adequate time to focus on meaningful pedagogy. These technical challenges also extend to teacher candidates training at their cooperating schools. Although teacher candidates meet with their cooperating teachers (mentors) to discuss instructional and behavioral concerns related to their caseloads, teacher candidates spend a significant portion of their day helping the cooperating teacher meet the demands of their busy schedule.

Assessment and the Inquiry Cycle

The experienced teachers stated that the assessment classes they attended covered assessment tools that they did not need to use at their schools. Another concern raised by the teachers was the differences between high school and elementary and middle school in terms of the use and administration of the assessment tools. That is, most high school students in special education programs have already been diagnosed, and reviews of their IEPs rarely result in a need for comprehensive evaluations and new diagnoses. Even parents seemed to be more interested in the results of state testing than in the results of tests administered as a result of IEP revisions. Because high school students' success is generally credit based, objectives are more clear-cut and are more of a focus. Participants thought that the IEP classes were valuable, but that they needed more in-depth coverage. One teacher mentioned that based on their knowledge of middle schools, teacher preparation programs need to shed more light on the difference between goals and objectives that are most likely to be associate with certain disability types and severities; for example, appropriate goals and objectives for many students with high support need may focus on long-term care,

whereas appropriate goals and objectives for students with low support needs pertain to transitioning to college.

One participant expanded on the stated differences in the writing of IEP goals across grade levels to emphasize the importance of preparing elementary and middle school teachers to write IEP goals that progressively and gradually merge with goals related to transitioning into college or society and work.

Teacher candidates' ability to interpret state-required standardized tests should not be considered the ultimate purpose of assessment in education settings. Teacher candidates should be well-grounded in students' proficiency levels to make instant instructional decisions or apply the "inquiry cycle" (Greenberg & Walsh, 2012). Teacher candidates must have enough opportunities during student teaching to make such crucial instructional decisions. Greenberg & Walsh (2012) emphasized the importance of constantly investigating the efficacy of teacher training in assessment. The knowledge required of teacher candidates regarding assessment can be classified into three domains: 1) Measuring students' level of proficiency, or assessment literacy; 2) analyzing the data accrued through assessment literacy, or analytical skills; and 3) using performance data to make instructional decisions (Greenberg & Walsh, 2012). Based on these domains, teacher preparation programs at IHEs need to map the skills and curricula presented in the coursework to determine the extent to which pre-service teachers get enough opportunities to analyze and use the data they obtain from PK-12 students to make instructional decisions.

Assessment in PK-12 school settings can take different forms. A school district's assessment may be curriculum based, in which teachers create their own assessments of the skills and curricula that align with the learning standards for a certain grade level. In other school settings, however, teachers might use a software-based, commercial intervention program. In addition to providing customized probes for assessment, such software creates a chart of individual student's progress and suggests specific instructional material. Because of these two different trends in intervention and assessment, it is suggested that we investigate the impact of using a readily available intervention program supported by software that suggests instructional routines on student teachers' or educators' ability to hone their skills in creating their own assessment materials

Student population and Preparation of Teachers

The observation made by one teacher about the increase in cases of students diagnosed with ASD is correct. According to the U.S. Department of Education's (USDE) 42nd Annual Report to Congress on the implementation of the Individuals with Disabilities Education Act (IDEA) (2020), between the years 2008 and 2017, the percentage of students ages 6-11, 12-17, and 18-21 that were reported under the category of ASD increased. Specifically, they respectively increased by 86.1%, 147.8%, and 163.2% in 2017 compared to 2008. In-service teachers are well prepared to understand and identify the characteristics of students with autism, including the need to create a routine and use visual communication aids. The teacher preparation program may not address a commercial intervention package in detail, but the underlying practices and their rationale are delivered in light of the general characteristics of ASD. In terms of emotional disturbances, the United States Department of Education (2020) report did not include information regarding the different categories of emotional disturbances; instead, the collected data focused more on the graduation rates of students with emotional disturbance and related disciplinary issues, such as interim alternative educational settings, detention options/facilities and expulsion.

Conclusion

In this study, experienced teachers and preservice teachers discussed challenges related to rapid changes in assessment, curriculum, and intervention programs (Table 2). All participants mentioned the challenges of managing a constantly changing daily schedule. Participants attributed these changes to factors such as complicated assessment processes, behavioral challenges, and teacher or student absences (Table 2). Participants suggested that IHE place greater emphasis on developing IEP-rich content courses; expose pre-service teachers to academic intervention programs, primarily the reading and math intervention programs that are widely used in school settings; expose preservice teachers to state-mandated assessments; incorporate more content related to measuring progress and analyzing data for PK–12 schools; train student teachers to manage constantly changing schedules; prepare preservice teachers to work with students who have mental health issues or autism; and teach preservice teachers how to write a Teacher Performance Assessment (edTPA) while managing other responsibilities (Table 2).

Teacher candidates and novice teachers were introduced to formal scholar theories during their teacher preparation programs, but it is unclear whether they will be able to apply that knowledge to effectively navigate the constantly changing aspects of curriculum, intervention programs, assessments, and daily schedules at their schools. The experienced teachers in this study thought there was merit in incorporating readily available intervention programs into teacher preparation program coursework to emphasize the science or pedagogy embedded in them and, hopefully, will assist novice teachers in navigating similar programs in their prospective schools.

The participants reflected primarily on logistical unexpected daily changes that disrupt their lesson plans. According to Reason & Kimball (2012), practice must be based on formal scholarly theories, which are typically addressed in teacher preparation programs. Formal theories are crucial for preventing invalid assumptions while formulating informal theories (Evans & Guido, 2012), which are unique to each institution's environmental and cultural factors. According to the participants' inspired narratives, logistical challenges appear to have a negative impact on the process of teaching and learning. If we consider these challenges to be inherent in the teaching and learning process, then teacher preparation programs must equip in-service teachers with skills and methods for managing them. However, if these issues represent a true barrier to providing high-quality learning experiences in the classroom, we recommend that they be addressed as quickly as possible in the educational settings where they occur.

In addition to the feedback loops that were suggested to inform institutional contexts and informal theories in Reason and Kimball's (2012) model, the researcher would like to emphasize the importance of a feedback loop that extends to formal theories: This feedback loop could provide scholars and researchers with an opportunity to extend research to common institutional and environmental challenges. Such scholarly efforts could improve the quality of practice by keeping informal theories and formal theories in a constant state of checks and balances. Over time, this series of checks and balances could better clarify the differences between obstacles to teaching and learning and benign environmental factors that are common in school settings.

Limitations

The participants in this study came from different school settings and graduated from different institutions of higher education in a midwestern state, but the findings cannot be generalized to the overall population. However, the findings can be used to gain insight and understanding

about how to better bridge the gap between theory and practice. Another limitation of this study is that all of the experienced teachers chose to become cooperating teachers, which means they received assistance from student teachers. The fact that they sought out student teachers may indicate that work variables in those locations were less than ideal, or it may reflect the cooperating teachers' commitment to education and the improvement of teacher preparation programs.

This research aimed to initiate a discussion about the variables that might contribute to the gap between teaching theory and practice. The study looked into the realities of teaching and learning at the PK–12 school levels. Participants' responses revealed that PK–12 schools and IHE need to be open to new ideas that may bring changes to each program's framework.

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Lama Bergstrand Othman is an associate professor in the department of special education at the University of Wisconsin-Whitewater where she has been a faculty member since 2016. Lama earned her Ph.D. in special education with a focus on reading research from the University of Iowa. Her interests lie in the areas of cognitive psychology of reading, behavior intervention, and teacher preparation. Since 2014, Lama has been supporting pre-service and in-service teachers in successfully completing the mandatory exam and portfolio required for teacher licensure. She is currently developing a graduate-level certificate program in assistive technology at the University of Wisconsin-Whitewater.