



The **OHIO** Journal of Teacher Education

FALL 2021. VOLUME 35. NUMBER 2

The **OHIO** Journal of Teacher Education

Fall 2021. VOLUME 35. NUMBER 2

PUBLISHED BY THE OHIO ASSOCIATION OF TEACHER
EDUCATORS

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A MESSAGE FROM THE EDITOR

Dear Readers,

The Fall 2021 issue of the Ohio Journal of Teacher Education is again filled with cutting edge research that aims to make all readers better informed, and better able to address the needs of our students as well as keeping us up to date on the current research on pedagogy and the state teacher preparation in the great state of Ohio! There are four articles this issue. Preservice Teachers' Culturally Responsive Teaching (CRT): Approaches in Teaching Mathematics to Diverse Learners covers the process that pre-service teachers are taught to address diverse needs when planning mathematics instruction. Personal Meaning Mapping delves into how teachers can use this technique to further the depth of learning during science related field trips. Shifting the Lens from Coach to Teacher: An exploration of a teachers' role as coach of modeled instruction investigates the multiple roles instructors take on when coaching preservice teachers. Finally, we have a book review. Dr. Laney Bender Slack's new book entitled The Nicaraguan Literacy Campaign: The Power and Politics of Literacy is reviewed by Xavier Graduate Student, Nora Appleman. In her review she poignantly describes the most successful literacy campaign in history and how this historical moment in history informs us and inspires us today. Please enjoy this issue. I encourage all of you to submit to the OJTE. We have the capacity to include as many as 7 manuscripts in each issue. I look forward to seeing what is presented to our board in the coming months! I also look forward to seeing all of you during the OCTEO conference. Be Well! Peace!

Thomas Knestrict
Editor
The Ohio Journal of Teacher Education





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Book Review

The Nicaraguan Literacy Campaign: The Power and Politics of Literacy

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Dr. Bender-Slack's book, [*The Nicaraguan Literacy Campaign: The Power and Politics of Literacy*](#), came to me at a pivotal moment in my career. I have been a high school English teacher for over 10 years, but I have to admit, I was feeling burnt out, tired, unappreciated and, frankly, powerless when this book found me. It was the summer of 2020. The COVID-19 pandemic forced teachers to make abrupt and sweeping curricular changes in the span of a week, and the murder of George Floyd, with the ensuing unrest set the cultural scene. I needed this book in this moment; I, like Nicaragua in 1980, was ripe for a literacy campaign.

The Historical and Philosophical Context

In [*The Nicaraguan Literacy Campaign: The Power and Politics of Literacy*](#), Bender-Slack discusses the importance and power of literacy through the lens of a particular campaign. While there are many literacy campaigns that have occurred throughout history, Bender-Slack's choice of the Nicaraguan campaign is compelling because it took place in the recent past (1980), and it tells the story of a people who, with very few resources, were able to virtually eradicate their country's illiteracy in less than a year. The Nicaraguan Literacy campaign, or the Cruzada Nacional de Alfabetización (CNA), was one of the first major initiatives of the newly formed Sandinista government after overthrowing the fascist dictator, Anastasio Somoza in 1979. Education had been all but ignored during the Somoza dictatorship in order to keep the poor people oppressed. So, when Fernando Cardenal, a Jesuit priest and member of the Sandinista National Liberation Front (FSLN),

was asked to head the literacy campaign, he had a major task ahead of him and almost no resources. Instead, he relied on the strength and optimism of his volunteer teachers, or brigadistas, many of whom were teenagers.

The historical context for the CNA is a shocking tale of the United States' involvement in and endorsement of the fascist Somoza dictatorship that violently oppressed its people for decades. Bender-Slack's compelling narrative voice propels the reader through this history and paints an authentic and engaging picture of these events. Although I was appalled to learn of the U.S. involvement in Nicaragua, what angered me most was that, as a well-educated, American adult, I had never heard this story. To omit the United States' involvement in Nicaragua from our history classes is a direct, political act in an effort to whitewash our history. For those who may want to argue that education is not and should not be political, the omission of this story from U.S. history books acts as a reminder.

Bender-Slack bases her research on this ideology that all education is inherently political. Choosing to include something in the curriculum—political. Choosing to ignore something in the curriculum—political. What the education system values (i.e. test scores)—political. This is an ideology rooted in Brazilian educator and philosopher, Paulo Freire's, concept of critical pedagogy, espoused by Fernando Cardenal, and incorporated into the CNA. Bender-Slack asserts that “it is literacy as social practices that highlight the role that power plays and the importance of knowing what types of literacies we are practicing so that we can ask...Who has the power? Why do they have the power? Who is benefitting? Who is being hurt? And what can we do to change it?” (4). At a time when teachers are being told to be apolitical or neutral, it is refreshing to have an educator proclaim that we are indeed political agents, and we should embrace that role to help us be more mindful of what and how we teach. Will we, as educators, stand with the oppressed and voiceless, or will we continue practices that enable and encourage the powerful?

The Campaign

Bender-Slack provides extensive details regarding the planning and executing of the campaign. She includes information about how Cardenal and his team collected census information, recruited volunteers, trained teachers, and even how they organized the brigadistas for deployment to teach in the rural areas. The People's Literacy Army, which was the official title for the brigadistas, was “modeled after the six guerilla armies during the insurrection” and thus were “divided into six fronts and consisted of approximately 55,000 brigadistas” (43). These fronts were

then divided into “brigades,” “columns” and “squadrons” (43). As a literacy professional herself, Bender-Slack draws attention to the language used during recruitment and training. She explains that “the leaders intentionally used military metaphors to connect the campaign to the battles fought and people lost during the revolution” (36).

After providing background on the logistics of the campaign, Bender-Slack analyzes the CNA curriculum. Because the Somoza dictatorship neglected education as a whole, but specifically for the poor and disenfranchised, Cardenal and his team had to develop an entirely new curriculum for the literacy campaign. Their goal was to design the curriculum so that it would be relevant to the Nicaraguan people’s reality, which made it intentionally political. The old textbooks (prepared by the CIA) were scrapped, and the new materials were produced entirely by Nicaraguans. As part of the preparations, Cardenal met with many experts including Paolo Freire to help develop “an education that was devoted to freedom” (50). Therefore, the campaign adopted the philosophy that “learning was to happen mutually for everyone participating in the crusade” and rejected the “top down approach” (59). The brigadistas taught the peasant farmers, or campesinos, to read and write, while simultaneously learning from their students. Brigadistas learned of the rampant poverty and horrifying health conditions that the campesinos faced in the rural areas. However, they also discovered the beauty and strength of the campesinos with whom they lived, worked and learned. This mutual learning allowed for the creation of a new Nicaragua where the people--urban and rural, young and old, rich and poor—understood and respected each other.

While educators and literacy professionals will be drawn to the book because of the campaign details and curriculum analysis, Bender-Slack ensures that all audiences will connect with the text by also focusing on the campaign’s ability to bring people together and build relationships. There are many compelling stories about the struggles and triumphs of the brigadistas. Some brigadistas were met with suspicion and mistrust, while others were welcomed with open arms. Some adult learners resented being taught by children, while others respected the authority of the brigadistas as literacy teachers. Some women faced discrimination, harassment, or, in some cases, assault from their male students and colleagues, but the campaign also provided women with more opportunities and agency. While there were definitely difficulties, what shines through is the overwhelming optimism of the Nicaraguan people and their willingness to be interdependent and learn from each other.

Narrative Style

Although the main audience for this book may likely be educators or literacy professionals, Bender-Slack writes in a way that all readers will understand. In many theoretical, philosophical, or educational texts, authors tend to use the language of the profession, a specific literacy that not all people are fluent in. Thus, some readers may be put off by the professional jargon. Bender-Slack is mindful of this. While she is clearly well-educated and well-researched on the topic of literacy and this particular campaign, she is able to meet the readers where they are, and then build them up. This is a characteristic of Paulo Freire's Critical Pedagogy, which reveals that Bender-Slack not only espouses this philosophy but practices it.

Bender-Slack's enthusiasm is infectious throughout the text. It is clear that she has a deep love for literacy, social justice, and Nicaragua (both its people and culture). To connect with her readers and engage with them on a personal level, Bender-Slack willingly shares herself in the form of original poems and stories. However, she also allows the brigadistas to tell their own stories with quotes and anecdotes from her interviews with them. She incorporates Spanish, photos from her journey, and original Nicaraguan artwork - all to help her readers better understand the Nicaragua that she loves.

However, she does not love blindly; Bender-Slack's honesty commands respect. Not only does she recognize and discuss the flaws in the Nicaraguan literacy campaign, but she also confronts the unflattering role that the U.S. played in Nicaragua with integrity. Bender-Slack makes a compelling argument that knowing and understanding the truth of history is an important step in righting wrongs, learning from past transgressions, and moving forward with mindful intent.

Conclusion

Dr. Bender-Slack's book is a powerful reminder that what we teach, why we teach, and how we teach matters. And while teachers may begin to question their methods and motivations as they read, Bender-Slack always offers hope and optimism. In fact, she encourages this sort of self-reflection as it can lead to positive change, and we can all be agents of social change. Despite differences in time and culture, teachers will connect with the trials and successes of the brigadistas, and come away reenergized by the motivational story of Nicaragua's successful campaign.

Personal Meaning Mapping and Focused Field Trips: Capturing Change

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Abstract:

This paper discusses Personal Meaning Mapping (PMM), a useful tool for classroom teachers that can provide evidence of students' learning while at an informal science setting. These are unique environments that require measures that can capture content learning in diverse spaces (such as museums, zoos, aquariums, etc.). A scoring rubric for PMM was also developed and introduced. The sample consisted of 54 ninth-grade biology students, in five classes, at a Chicago Public School (CPS). As part of the biology curriculum, the classes went on a focused field trip to the Field Museum, a large natural history museum in Chicago, IL, to study energy flow within ecosystems. Students were asked to complete the PMM before and after the field trip experience. This, along with interviews and observations, provided relevant data on student learning. The results indicated that students showed an increased use of appropriate, content related, words and sentences.

Background

Informal science institutions (ISIs) provide a unique blend of free choice experiences that are usually voluntary, open-ended, non-sequential, self-directed, hands-on, and evaluation-free. Due to the more open-ended nature of ISIs, these experiences can present many variables, such as the environment itself or how individuals travel through an exhibition, which make it difficult to assess the impact of informal learning experiences. However, there are more structured experiences, such as a school group attending a tour or educational workshop as part of a field trip. It has been estimated that 70% of ISIs (such as zoos, aquariums, museums, etc.) offer educational programming for school audiences including field trips (CILS, 2010; Phillips et al., 2007).

It must be stressed that ISIs being able to provide for formal classrooms and their curriculum needs is very important, as well as providing access to unique and valuable resources. Once, museums were solely interested in being protectors of the objects held within their walls. In recent decades, these institutions have become more interested in making education a museum-wide concern and responsibility (Munley & Roberts, 2006). Also, the related education programs are important in order to help museums improve attendance numbers and revenue.

When considering the assessment of learning at informal sites, Falk (2004) argues that though we know and understand many of the factors involved, it is still not clear how to consider all of these factors in a holistic way. Dierking, et al. (2003) emphasizes that the “very nature of such learning requires multiple, creative methods for assessing it in a variety of ways under a variety of circumstances. Thus, innovative research designs, methods, and analyses are critical” (p. 110). The assumption about free choice learning of science, in which the students are able to make their own choices about what to learn and which exhibits to see when visiting an ISI, carries over into the realm of assessing the learning that occurs as a result of a field trip visit as well.

In 2005, Falk and Storksdieck (2005) introduced the Contextual Model of Learning to organize the complexities of learning within an informal science setting or free-choice settings. This

is a large-scale framework through which the authors are trying to tap into an individual's personal, socio-cultural, and physical contexts over time. These factors are constantly changing across an individual's lifetime. Also, research has emphasized that learning is cumulative and emerges over time through an endless number of human experiences (NRC, 2010; Pedretti, 2006). At the same time, during school field trips, a classroom teacher may choose a workshop or guided tour, whose options can be very structured with goals set according to state standards in order to connect to the curriculum taught (Astor-Jack et al., 2006; Astor-Jack et al., 2007). In addition, teachers can elect to bring their students on their own but with activities or assignments focusing students' attention on content taught in the classroom.

Previous attempts at assessing learning during school field trips have been inadequate. For instance, when assessing long-term learning, Falk and Dierking (1997) assert that three quarters of the recollections related to content/subject matter were learned at the museum; thus, meaningful learning occurred. However, it was not considered whether this learned information was accurate, distorted over time, or even associated with the site they claimed to have visited. That said, even though many years had passed, nearly 100% of the people interviewed were able to recall at least one thing they learned on a field trip during their early elementary school years.

Over the years, much of the research about informal science learning has been descriptive and lacking a theory base. The constructivist approach to learning can be a guide for further research as well as assist in the interpretation of the data (Anderson et al., 2003). This is due to the recognition of a person's prior knowledge and involvement in the learning process during a visit to a museum: "Knowing how people learn might be more important than knowing what they learn" (Lucas et al, 1986, p. 343). The constructivist view of learning recognizes that an individual's current conceptions are products of diverse personal experiences, observations of objects and events, culture, language, and teacher's explanations.

Personal Meaning Mapping

In attempts to assess learning that can take place in informal sites, several papers discussed the need for more comprehensive assessment methods, and as a result the Informal Learning Opportunities Assay (ILOA), the Classroom Test of Scientific Reasoning ([CTSR] Gerber et al., 2001a; Gerber et al., 2001b), and Personal Meaning Mapping (PMM) were developed and utilized (Falk et al., 1998; Falk & Storksdieck, 2005; Luke et al., 1998). This paper will focus on the Personal Meaning Mapping assessment method as a tool for K-12 classroom teachers.

A series of studies were conducted at the National Aquarium in Baltimore (NAIB) and included face-to-face interviews, Personal Meaning Mapping (PMM), tracking, and follow up telephone interviews (Adelman et al., 2000; Falk & Adelman, 2003). It was stated that learning in museums follows basic constructivist principles and that learning happens when learners actively construct their own meanings over time. Much of the research on constructivism and science learning has dealt with the formal classroom, while very little has been done regarding informal science learning. What became clear very quickly during these studies was that informal science settings are very difficult to assess in any meaningful way due to the many variables found there. While attempts were made to capture all the variables involved in learning in an informal setting, it also proved to be quite cumbersome.

Adams et al. (2003) described PMM as having been derived from concept mapping which was seen as having two major deficiencies: considerable training is required of participants and the scoring rubric presumed that there are single right answers. Personal Meaning Mapping was developed to provide a better understanding of an individual's personal learning construct, especially in free-choice learning environments. However, a rubric has not been provided in the literature and this paper helps to fill that gap. Also, in the study being described here, the rubric was used during a focused field trip experience to gauge whether it captured changes in learning because of a trip to a museum.

Methods

When K-12 classroom teachers use PMM, it can provide an illustration of a student's new experiences combined with their prior knowledge and experiences giving an indication of the process of learning and the changes that may occur as a result. PMM does not require much guidance on the part of the students and can measure how a specific educational experience affects each student's conceptual, attitudinal, and emotional understanding. Students are asked to respond to a word, concept, or picture by writing down as many words, ideas, images, phrases, or thoughts that come to mind. Usually, the cueing image, word, or concept is placed in a circle in the center of the page.

The teacher can then ask reflection questions such as "How are these things related?" and "Can you explain what you have on your paper?" The teacher can then write down clarifying thoughts or explanations in the student's own words. This is done in different color ink on the same piece of paper. After the student experiences an educational intervention (such as a visit to the museum), they can make changes on the same sheet of paper using yet another color of ink. Items can be added, deleted, modified, or changed on the PMM. After this, further reflection can be done, and the teacher can record the student's responses in a fourth ink color.

By using multiple colors, one can track and score changes in a student's learning process. The reflection questions also assist in clarifying key points on the PMM. Though it can be time consuming, the reflection is an important element allowing for confirmation and clarification of the students' written responses. Next, an example of how PMM was used during a field trip will be shared along with a rubric that was developed for scoring.

Focused Field Trip and Participants

The PMM was used with 54 ninth-grade biology students, in five classes, at a Chicago Public School (CPS). As part of the biology curriculum, the classes had a focused field trip to the Field Museum, a natural history museum located in Chicago, IL. A focused field trip consists of a

particular theme or purpose for a field trip and is supported by classroom materials, connections to the curriculum, preparation of students using ISI resources, and follow-up occurring with associated pre- and post-lessons in the classroom. The PMM was administered to every student the day before and the day after the focused field trip.

That spring, the students were studying energy flow within ecosystems in the classroom. The museum's education department staff, due to their extensive knowledge of and ability to target the appropriate exhibits, developed a three-day lesson plan utilizing the focused field trip model. This included a visit to the natural history museum, pre- and post-lessons, and worksheets directing students while at the museum. It was important to have the museum worksheets aligned to the classroom teacher's learning objectives, and the museum staff assisted with this as well.

In the classroom prior to the visit, the 45-minute lesson involved students examining illustrations of ancient and current ecosystems and a discussion about different roles organisms may play within an ecosystem. Related vocabulary terms, such as 'heterotroph' and 'autotroph', were introduced, and students were taught how to create food webs and food chains as well. This further emphasized the interaction of organisms within ecosystems. The pre-visit lesson was designed to help prepare students for what they were going to see at the museum and laid the basic groundwork of what they would need to know to complete the worksheets assigned during the field trip itself.

At the museum, students had two hours to complete two of five themed museum worksheets (Arctic, Midwest Forest, Land and Fresh Water, Cambrian Explosion, and Tertiary Period). After an introduction by museum staff, students in groups of five or six were asked to go to specific exhibits throughout the museum to identify and classify several plants and animals at the appropriate trophic level (i.e., autotrophs, first, second, and third order heterotrophs), further elaborating upon the pre-visit lesson. Students were also asked to construct food webs and food chains on the worksheet based on the organisms found in the museum exhibits.

Each student group was assigned a chaperone, either a science teacher from the school or a parent of a student. The parents were not involved with the pre-visit lessons and had very little experience with the worksheets that were given to students. Since some chaperones were also not familiar with the museum, they were given information sheets that included pertinent content, maps, and directions to help find the appropriate exhibits and exhibitions.

When back in the classroom for the 45-minute post-visit lesson, students were asked to break into groups and discuss the information found at the museum. Each group then shared what they found with the rest of the class, and students were asked to reflect upon what was discussed prior to the museum visit. Students' shared information was entered into a data table projected on to the board in the hope that students would be able to see that the basic construction of ecosystems was similar regardless of location or type of ecosystem. The emphasis was on the organisms and their dependence on each other within the ecosystems.

Personal Meaning Mapping Administration

For the PMM administration before and after the museum visit, the phrase "Energy in an Ecosystem" was placed, in a circle, in the center of an 8 1/2 x 14 sheet of paper. Students were asked to write down everything that they could think of regarding energy in an ecosystem. This included words, phrases, concepts, and drawings. If they felt that there were connections between items, the students were asked to include those as well (see Figure 1 for an example).

Figure 1

Example of Personal Meaning Map with Student Work.

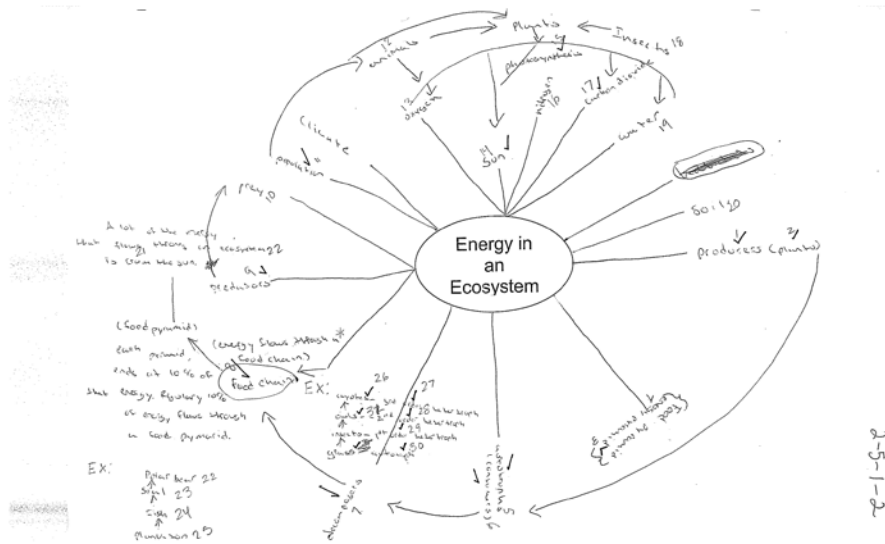
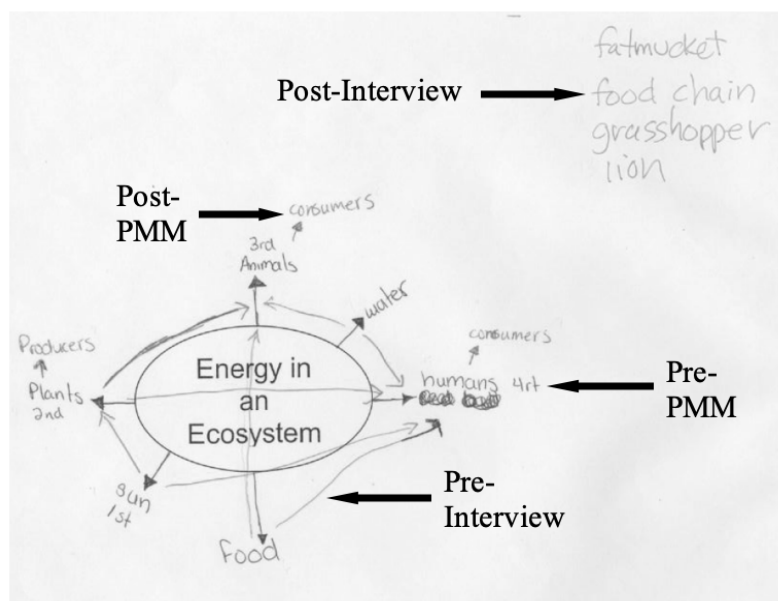


Figure 2 shows an example of a PMM completed after the field trip. Since a black and white image is shown, arrows have been inserted to indicate student and reflection pre- and post-responses.

Figure 2

PMM with Pre- and Post-Student Work and Interview Responses Indicated.



Four dimensions (Extent, Depth, Breadth and Mastery) are represented in the PMM and provide different views of learning, which require different analyses and scoring rubrics. In Adams et al. (2003), inter-rater reliability was established for each of the four PMM measures and was found to be high for Extent ($r=.96$) and for Breadth ($r=.88$) and satisfactory for Depth ($r=.76$) and Mastery ($r=.78$). The discussion of the study stated that visitors showed evidence of improvement in their science learning, and a large majority of visitors demonstrated improvement across the various PMM measures.

Personal Meaning Mapping Rubric

For the study discussed here, a team of five experts including the Director of Education and two Curriculum Specialists from the natural history museum assisted in developing the rubric. These experts had an extensive knowledge of the exhibitions visited by students and developed the pre-visit and post-visit lessons being taught in the classroom, along with the worksheets used during the field trip. Two Chicago Public School (CPS) high school biology teachers who were familiar with the biology curriculum and lesson plan were also on the team. The curriculum scope and sequence were referred to include the important concepts, key vocabulary words, and objectives that are covered in the lessons relating to the museum visit.

At the same time, it was hoped that the scoring rubric would be general enough to use for any exhibition. The dimensions and scoring of PMM were designed as follows (see Table 1 for the rubric):

- 1. Extent:** This dimension addresses the change in the quantity of appropriate vocabulary used that indicated the extent of the subject's knowledge about the subject. Each word/phrase used in the pre- and post-PMM was directly counted. A list was developed using the curriculum, textbook, and exhibition worksheets, which the team of experts assisted with. Depending on the number of words counted and the appropriateness of those words, a score was given based on a scale of one to four. However, while the subject may list appropriate

vocabulary words, this dimension does not address understanding of the words or the larger concepts.

2. **Depth:** A four-point scale (shallow to deep) was used to gauge the depth of the subject's understanding of a particular concept. This dimension measured the change in the richness of each of the concepts described by the subject. For scoring purposes, this dimension was split into two parts: understanding and connections.
3. **Breadth:** The third dimension addresses the breadth of the subject's conceptual understanding, measuring the change in the quantity of appropriate concepts used. Again, the scoring rubric was set up on a scale of one to four (from a low level to a high level of understanding). A comparison was made of the conceptual categories the subject used before and after the educational experience. The reflection questions also aided in determining the students' breadth of understanding.
4. **Mastery:** This is a holistic judgment that evaluates all the dimensions and looks at overall mastery. Specifically, does the subject's understanding look more like that of a novice, apprentice, practitioner, or expert (e.g., informed)? This score was based on the other three dimensions. For instance, if a student scores a two on all the other dimensions, the student would be considered an apprentice (level two).

Table 1*Personal Meaning Map Scoring Rubric*

	Extent	Depth		Breadth
		<i>Understanding</i>	<i>Connections</i>	
Novice	Student does not use any appropriate vocabulary, phrases, or concepts.	No evidence shown that a concept is understood.	No connections are made between words or phrases.	Student shows no understanding of concepts.
Apprentice	Overall, the student uses few appropriate vocabulary words, phrases, or concepts.	Some evidence is shown that a concept is understood.	Some connecting lines are shown (between phrases or words), but are not labeled.	Student displays understanding of few concepts. If a concept is described, it is incomplete or not clearly presented.
Practitioner	Student demonstrates a broad use of appropriate words, phrases, and concepts. Some of the words and phrases are not appropriate or related to the concept described.	There is more evidence that a concept is understood.	Phrases and words are connected. If connecting lines are labeled, some phrases or words are not appropriate.	Student shows a broad understanding of a number of concepts. Most of the concepts are presented in a clear manner.
Informed	All the words and phrases are appropriate and related to the concept described.	Concept is fully developed. It is clear that the student understands the concept.	Connecting lines are shown and labeled with appropriate/correct terms.	Student displays a fully developed understanding of a number of concepts. All of the concepts are clearly presented.

To determine reliability of the scoring, reliabilities for all dimensions of PMM were calculated by the split-half procedure corrected according to the Spearman-Brown and Guttman coefficients. The reliabilities were high: 0.846 for the Spearman-Brown (both equal and unequal lengths) and 0.801 for the Guttman.

Findings

After utilizing the rubric, mean scores were analyzed and compared in a descriptive manner using histograms. When comparing mean scores of pre- and post-PMMs for students in Table 2, an improvement was seen in all PMM dimensions emphasizing the changes after the museum visit but without indicating significant differences. As a reminder, the range of scores for the dimensions of Extent, Depth, Breadth, and Mastery was one to four. It is of interest that most students fell within

levels one and two for all the dimensions. Regarding the Mastery dimension, this reflects student understanding being at the level of novice (level one) or apprentice (level two). Only one of the students in this study had a score at the highest level (informed) on the post-test. This is the example shown in Figure 1.

Table 2

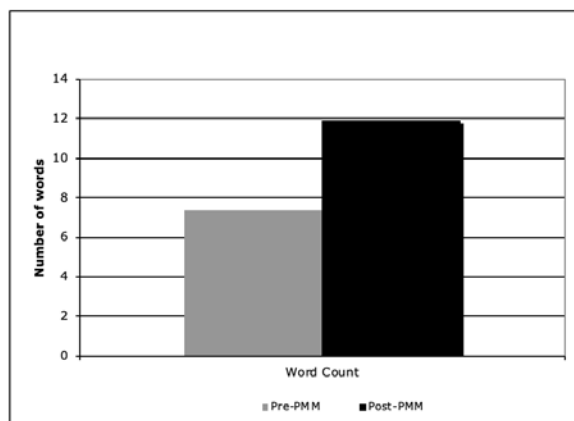
PMM Pre- and Post-Mean Scores (n =54)

	Word Count		Extent		Depth		Breadth		Mastery	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Pre-Test	7.35	3.46	2.04	.27	1.46	.63	1.24	.47	1.46	.60
Post-Test	11.89	5.45	2.43	.53	1.72	.78	1.41	.65	1.76	.72

The students had higher mean scores on the post-test for all dimensions. This was also true for *word count* ($M = 12.36$, $SD = 5.61$) as the range of appropriate vocabulary words used was greater after going to the museum. The average word count prior to the museum visit was 6 and increased to 12 after (see Figure 3).

Figure 3

Pre- and Post-Word Count (n = 54).



Discussion and Implications

In this small study, little can be generalized about the degree of impact that the museum exhibitions had upon student learning about energy in an ecosystem. However, students who went to the museum did show improvement in the post-PMM scores overall; this is especially true for the Word Count and Extent dimensions, which demonstrated increased use of appropriate content related words and sentences. Personal Meaning Mapping does seem to capture the degree of change in learning and could prove to be a useful tool for classroom teachers when designing focused field trips. Informal learning environments are challenging spaces for assessing learning outcomes (NRC, 2010). The National Research Council (2009) has provided recommendations for developing appropriate assessments since “one of the main challenges at present is the development of means for assessing participants’ learning across a range of experiences” (p. 310) while allowing for engagement in informal learning spaces.

It was discussed previously that PMM was claimed to capture conceptual, attitudinal, and emotional understanding and focuses on the degree of change in learning. In this study, attitudinal and emotional understanding were not addressed specifically, and results shown only relate to students’ conceptual understanding. In past studies, it has also been noted that PMM was designed to measure conceptual change, but it does not necessarily separate out the various domains of knowledge and understanding (Falk & Storksdieck, 2005).

As was noted earlier, Rennie & Johnston (2004) stated that learning is personal, contextualized, and takes time. When designing focused field trips, it is important to provide enough time given to the students to make sense of and reflect upon what they saw while they were at the exhibitions. The results shown on students’ Personal Meaning Maps would indicate that the museum experience did provide a valuable learning experience despite the limitations described above. Ultimately, Personal Meaning Mapping (PMM) does seem to capture changes in students’ understanding about the content presented in the lessons and during the visit to the museum. While

PMM has been used in other recent studies with primary students (Farla et al., 2020) and garden-based learning (Bailey & Falk, 2016), there is yet to be a rubric developed for it. In the current study, PMM captured improvement in understanding about ecosystems, and the interviews with the students and observations reinforce what the data showed. Further, classroom teachers could easily use PMM and the associated scoring rubric as an assessment for informal science and classroom settings.

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Preservice Teachers' Culturally Responsive Teaching (CRT)

Approaches in Teaching Mathematics to Diverse Learners

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Abstract:

This paper describes perceptions of teachers of children from infants through grade five, regarding challenges, supports, and lessons learned. Data sources include a survey of 17 teachers in Fall 2019 and interviews of 14 teachers from January – March 2020. Inductive analysis revealed several themes: Teachers feel confident in their ability, but teacher preparation programs did not sufficiently prepare them for challenging behaviors or working with diverse learners. Teachers love teaching, but are challenged by paperwork, low compensation, low appreciation, higher expectations, and increased mental health issues. Teaching is a difficult job to do with fidelity, and relationships are integral to success.

Keywords: teacher challenges, teacher perceptions, teacher supports

As recently as 2019, the Economic Policy Institute reported a shortage of teachers (García & Weiss, 2019a). Indicators of this shortage included decreasing enrollment in teacher preparation programs, teaching vacancies across states, and a gap between available teachers and the vacancies.

A shortage of teachers has implications for the profession and for PreK-12 students. Without

sufficient teachers, student needs may go unmet, and there may be instability in the workforce.

Recruiting and training new teachers comes with an economic cost. In addition, teacher shortages influence the reputation of teaching and efforts to professionalize teaching. Factors, such as the quality of teachers, need be taken into consideration and lead to the conclusion that the shortage is even more dire than anticipated (García & Weiss, 2019a). Credentials associated with effective teaching include certified teachers prepared in traditional programs, five or more years of experience, and an educational background in their primary teaching assignment. Higher credentials serve as a deterrent to attrition. The number of teachers who lack experience and have alternative preparation is growing. The impact of shortages is worse in high poverty schools. Teachers who stay in high poverty schools tend to be even less qualified (García & Weiss, 2019a).

Teacher recruitment and retention is an important issue. One factor in attracting teachers to the field and keeping them there is compensation. Taking into account education and experience, teachers earn less than those with similar education levels in other professions. This “teacher wage penalty” has increased over time and is more acute in high poverty schools (García & Weiss, 2019c). Working second jobs to make up for the monetary gap can be stressful. Some opportunities exist within the school system, such as mentoring teachers or coaching student activities. These “profession building” tasks can allow for building relationships with schools and colleagues. Jobs outside of the school system may result in more stress and disconnectedness from the school. Teachers who tend to leave the profession have lower salaries and fewer opportunities to earn additional funds through the school system (García & Weiss, 2019c).

School climate also plays a role in teacher shortages. The work environment and working conditions influence job satisfaction. Some issues are societal such as insufficient funding for schools, poverty, inequity, and the racial and economic segregation of schools (García & Weiss, 2019d). While prepared for many classroom challenges, some barriers teachers face fall outside of preparation and expectation. Absenteeism, challenges with family involvement, poor student health,

and disengaged students pose challenges to school climate. Teachers feel stressed and unsafe with 1 in 20 indicating that the stress is not worth it, and 1 in 5 reporting having been threatened by a student in the school (García & Weiss, 2019d). Relationships also shape school climate. Less than half of teachers felt supported by administrators, colleagues, or the community. Eighty percent identified that they did not feel that they have a voice in school policies. Often, with the poor school climates come low job satisfaction, motivation, and intention to stay in the profession. The work environment makes the profession less appealing. Research has shown that teachers who quit reported high stress, lower collegiality, and lower influence on decision-making (García & Weiss, 2019d). Additionally, poor school climate made teaching more challenging, keeping some from pursuing the profession and others from continuing in it.

Educators continued to face a series of crises in 2019 and 2020. In 2019, job vacancies, along with the declining availability of qualified applicants, high rates of teacher turnover, and teachers leaving the field altogether, created a crisis in staffing (García & Weiss, 2019b). Another crisis that emerged in 2020 was the COVID-19 global pandemic: “The health emergency forced the closing of schools all over the country, sending over 55 million K-12 students and about four million teachers home for the remainder of the school year” (Garcia, 2020). Teachers rose to the challenge and parents indicated an increased appreciation for the work teachers do (Garcia, 2020). However, the pandemic resulted in a loss of education jobs. Education employment is not where it needs to be to keep up with enrollment (Gould, 2020). Looking forward, cuts in school funding may lead to further decreases in supports and additional teacher shortages (Gould, 2020).

It may be a challenge to keep teachers who are in the field from burning out. There is a connection between teacher burnout and a range of factors including low self-efficacy, low job satisfaction, poor physical health and increased levels of intention to leave the profession (Arens & Morin, 2016). Teacher burnout may include emotional exhaustion, feelings of inefficacy, and indifference. Emotional exhaustion may lead to less effective classroom management, difficulty

engaging students in positive relationships, and lower levels of academic achievement. Raising awareness for new teachers for coping strategies and prevention of emotional exhaustion may be important (Arens & Morin, 2016). In a review of 11 studies on self-efficacy and burnout, all showed a negative relationship between self-efficacy and burnout, and 10 found a negative correlation with self-efficacy and emotional exhaustion (Brown, 2012). Teaching can be a stressful occupation; however, if teachers have high self-efficacy or confidence in their abilities related to student engagement, classroom management, and providing effective instruction, then the impact of that stress may be lessened (Collie, Shapka, & Perry, 2012). Perhaps information from in-service/current teachers can help aspiring teachers, as well as inform administrators and policymakers regarding what teachers want and need.

Methods

Data sources included an anonymous survey of 17 teachers of children from infants through fifth grade, completed in fall 2019 and interviews of 14 teachers of children from toddlers through fifth grade interviewed from January – March 2020. Guest, Bunce, and Johnson (2006) found that after 12 interviews, no new themes or information arose. Morrow (2005) also identified 12 participants as a sufficient number in qualitative research where quality, depth, and variety are more important than sample size. In addition, fewer than 20 allowed for more in-depth interviews for inductive, exploratory research (Crouch & McKenzie, 2006).

Survey respondents and interviewees work in the greater Cincinnati area. Of the teachers surveyed, one attended an online program, and one received alternative certification. All others attended traditional teacher education programs. Survey participants included one male and 16 females, one black teacher, and 16 white teachers. Three of the teachers ranged in age from 21-30. Five ranged in age from 31-40. Three were 41-50, and six were 51-60.

All teachers interviewed were identified as female. The racial composition consisted of two black teachers, one biracial teacher, and 11 white teachers. 13 teachers taught in public schools, and

all attended traditional teacher education programs. The number of years teaching ranged from less than 1 to more than 20 with the majority having more than 15 years of experience.

After transcription of the data, qualitative inductive analysis followed. Beginning with a thorough reading of the data, it was reviewed line by line and systematically coded. Coding included identification of frames of analysis and developing domains grounded in relationships within the frames of analysis (Hatch, 2002). Framing analysis around barriers and supports, domains within the frames of analysis included strategies (how), motivators/supports (why), and barriers/areas of advocacy (what). Units of meaning or themes were identified in order to find common patterns that emerged. By examining the answers to questions posed from the survey, abstractions were made through the analysis of the data (Corbin & Strauss, 2008).

Results

The key themes that emerged from the data are the love of teaching (motivator), the difficulty of teaching, insufficient preparation, overreliance on standardized tests, and the lack of trust in teachers (barriers/areas of advocacy), and the importance of relationships (both a strategy and a support).

Love of Teaching

Teachers emphasized both an enjoyment in the act of teaching and a belief that those who do not love it should not do it. Teachers were still teaching in the classroom because they loved it and could not imagine doing anything else. They enjoyed the variety and challenges they encountered and believed in their work. They wanted to advocate for children and make a difference. After schools closed due to the pandemic, one preschool teacher summed up her feelings of loss saying, “You don’t realize how much you love your job until you can’t do it anymore.” One piece of advice for new teachers that was given by a participant was to be clear about and to remember why they entered the profession: “It is not just a job.”

Because I love what I do. The physical act of teaching is so enjoyable. The physical act of being with these little people is so enjoyed. Yeah. That is just the most, wow. It. There're very few things in life that I think can give you the joy of, like, how they stand up to give me a hug. –fourth grade teacher

Just can't imagine doing anything else. Like, yeah, I like that there's a structure to the day. Um, but I like that every day is different. Like, I can't imagine going somewhere and doing the same thing every day. –second grade teacher

I just feel like I do benefit a lot of kids. I feel like, especially in this district, they don't see black teachers, um, and they won't see many of them throughout. And so I do feel like it is a plus for them because they have a different perspective they're hearing from, um, you know, someone who has some, you know, different things to bring to the table. But that's making them stronger and making them, um, you know, more well-rounded. So that probably is what keeps me here in the classroom. Just knowing that I'm impacting so many lives in that realm because I know they're not going to get what I bring to the table from my experiences [otherwise]. –first grade teacher

“I stick around because I love it. I really believe in what I do, I believe in this center, I believe in the work that we're doing.” – preschool teacher

If you're in this track and you don't like it, you're never going to like it any more than, like, when you're learning to be a teacher, because you're still in college, which is awesome. Um, and you're getting to try teaching out don't have that full load yet. You don't have all of it on your shoulders yet. And so, if you don't like it when you're just trying it on for size, you're not going to like it when it's your full deal. –preschool teacher

As the participants noted, teachers continue teaching because they enjoy and value what they do.

Teaching is part of who they are, and doing another job is not something they can imagine. There is a passion for teaching and a pride in their profession.

Difficulty of Teaching

While teachers love their jobs, they wanted people to know how challenging it is. The teachers identified that teaching was an around the clock job, a difficult job to do with fidelity, and stressful overall.

I just wish they can spend a day in my shoes and see. Yeah, it's hard. This is not easy work. If you're doing, if you're doing it with fidelity, it's not easy work. It could be really easy, but if you're doing it the right way, it's not going to be, and a lot of people were like, oh, you get the summers off, blah, blah, blah. Yeah. Okay. It's not just a job. It's also, like, an emotional toll as well as, you know, kiddos, the stress, and when they move away, it's hard. –second grade teacher

I think just being mentally prepared for how mentally draining it is. At the end of the day, I feel like my brain has run a marathon. I wouldn't change it, but just being mentally prepared for that. –first grade teacher

You have to be really, really passionate about it. Because that's about the only thing that's rewarding. It's hard to, like, even think, you know, high schoolers or children who are really going to deeply remember their teachers. You might get, you know, a visit back from a student or something. We're with them at the very start, and there's so much that I love about

that. That's where I want to be. But there's no payoff there, at all. It's not like you get to watch them graduate...unless their family's kind of hold, hold the torch for you, they're going to forget you, and that's okay. Like it is not all about us... some of them will come back and visit you for the first few years, but then off they go. And I'm like, it's like starting a book that you'll never get to finish over and over and over again. –preschool teacher

[I wish people understood] what differentiation is and how when I go to work, I am not just going and teaching one lesson to the class. All day it's multiple lessons and different lessons and it's exhausting and a lot of work. People think it's a lot of fun and games. – anonymous survey respondent

Teachers also highlighted the difficulty of teaching by explaining their thoughts about the reasons for teacher shortages.

There's, you know, zero prestige. There's no agency, and it's an ungodly amount of stress. Like you're having to do emotional labor for like 20 people at a time, and you're managing every single child's emotional climate, their interaction with you, their interactions with each other, whatever interaction you have with any other teachers you're working with, any families that come in, any other providers that come in, the freshman who comes in for volunteering for an hour, like the amount that you have going on. It's intense. It's exhausting. –preschool teacher

The challenges they discussed included lack of compensation and appreciation, along with higher expectations, an increase of challenging behaviors in the classroom, and students' mental health issues without increased supports.

Insufficient Preparation

Teachers feel confident in their abilities; however, they felt that their teacher preparation programs did not adequately prepare them to deal with the challenging behaviors they encountered or for working with the range of diverse learners in their classrooms. They wished they had learned more about or spent more time on the following: special education/special education laws, challenging behaviors/classroom management, dealing with trauma, deep reflection, social emotional learning, equity and inclusion, working with diverse students, and accommodating different needs/planning based what you know about students. Teachers explain what they wish they would have known:

So, I would say I wish I would have known, um, that there's more to teaching than executing a lesson plan. Like how to plan for the lesson based on what you know about your students. So, whether it's in case studies, methods, or experiences, I just really wish that there would have been more opportunities to practice getting to know a student to decide what they need to be taught and then actually getting to teach them. –second grade teacher

You have to treat social emotional learning just like you would be teaching reading, just like you'd be teaching writing. It has to be explicit and has to be intentional. It has to be broken down. And when you're dealing with K-2 or K-3 students, I feel like a lot of times we sometimes just take for granted that they know that skill or have that skill. But many times, they don't. –First grade teacher

I think understanding, like, if you're a K-3 certified teacher, understanding, um, at least the foundational content. Like what is phonics? What does phonemic awareness mean? What are phonemes? How do you blend sounds together? What is segmenting? Like those are things that I learned when I did my masters in literacy, but those were not things that I was equipped with when I got hired to teach first graders. All the subjects knowing like we don't carry, we don't borrow. That is not the second-grade math curriculum. They have to know tons of strategies, but they come in and they don't know any of those strategies. So, I think focus on course content for the primary grades or whatever your certification is. And because it's really impossible to plan a lesson based on student needs if you don't know what they need, like decoding strategies and teachers don't have that, right? You can do a running record analysis, but if you don't understand why, they're making the mistakes they're making or what type of mistakes they're making, it's hard to plan for future instruction. –second grade teacher

Teachers felt competent in skills developed over time but wanted more preparation on meeting student needs upon entering the field. This included differentiating instruction, supporting social emotional learning, and stressing the importance of content knowledge.

Overreliance on Standardized Tests

Participants stressed that effective assessment should help teachers get behind a student's thinking. They could plan when it was clear why students were making mistakes and why they were succeeding. Teachers did not feel this kind of information came from standardized tests, and noted that there was too much emphasis placed on standardized tests.

Paying attention to what kids are doing and paying attention to what their next steps might be, whether it's because they're struggling or because they need to be challenged. – second grade teacher

Test scores aren't everything. You can't measure a child's success by a standardized test. – second grade teacher

The teachers focused on what they could do to support students. Reducing a child to a test score did not prove to be useful, informative, or accurate. They were instead interested in attending to students processes, attempts, and language.

Lack of Trust in Teachers

Teachers explained that they wanted administrators, policy makers, and the general public to listen to them and include them in educational decision making.

As an administrator, do not ever forget what it's like to be the teacher in a classroom. And you can say 'student first' all you want, but it cannot be student first if it's not teacher first too. Because if you don't give your teachers the support they need, then they're not going to be able to give the kids what they need. –fifth grade teacher

You know, from the policy perspective ... there's no trust in the teachers. Yeah. Um, there's no trust on the children. And so, there's no trust in the teachers. There's no trust in the families. There's no trust in any of it. –preschool teacher

Listen to the voices that are in the trenches. If you've lost your fire/passion, GET OUT.

Teachers need administrators that have backbones, who will stand up for the staff and the best interests of the kids in the building. Systematic changes are necessary and possible but will require a strong leader. If children cannot be blamed for the chaos of the world, every adult needs to evaluate what we're doing!" –anonymous survey response

Dear general population, just because you went to school, at some point in time, does NOT make you an expert on education. –anonymous survey response

Teachers wanted administrators, policy makers, and the general public to spend a day in their shoes in order to understand the efforts and energy that goes into effective teaching. They wanted to be heard, included, and supported. Teachers were frustrated about the decisions being made for them and about things being done to them instead of with them. They wanted to be trusted and viewed as experts in their field.

Importance of Relationships

Not only do relationships matter, but they are also integral to success with families, students, other teachers, and other education professionals. Building relationships with colleagues helps teachers deal with stress.

You just, you have to find your group and it's got to be teachers because they're the only ones that get it. –fifth grade teacher

...working with friends, I think that's makes a big difference. That makes a huge difference. –second grade teacher

So, it's helpful to have coworkers you talk to about it you know, to say the insane things that are happening. Yeah. Out loud too. Like people who get it right. Like I tried to tell my husband at home, and he's just like, you know. If you're outside of your profession, people don't always get, like, why this is funny or why that was so intensely frustrating. –preschool teacher

Relationships with peers helped manage stress, and relationships with students helped teachers be effective. Small group instruction allows teachers to build relationships with their students. Students can get more targeted, thoughtful attention based on their needs and interests. This takes additional time, but teachers find it valuable. Teachers noted that small group work is impactful, and given more time, and resources, it is the strategy teachers would use more often. Small group instruction, small strategy groups, and personalized learning were mentioned as effective strategies and favorite lessons. These favorite lessons were ones that were enjoyed by both students and teachers. They were generally active problem-solving activities that were collaborative and required building relationships among the children. Favorite lessons shared included hands-on science activities, mini society, personalized learning projects, series book club, active lessons, explain thinking, collaborating, and project work. Building relationships with students also helped with classroom management. Teachers noted that challenging behaviors required knowing children well and using a wide range of proactive strategies and logical consequences. Some thoughts from participants included:

Know that a child's misbehavior is never personal.

Can I just say not the color charts or the flip charts please? Yeah, that seems like common knowledge, but it happens so much. Not in this building, but I mean my son's school, in a different district. It's all over the place, and I don't understand why.

I think making sure that there are clear and consistent expectations to start with and never, like, revisiting the expectations. Um, sometimes ignoring works but not giving them the attention they're seeking. ... A warning, a logical consequence. We do a lot of Responsive Classroom and I would venture to say that in second grade, the logical consequences might look differently than the logical consequences that a kindergartener or a first grader might encounter."

One key thread throughout the data was the role of relationships. The teachers identified that it often began with their relationship with teaching as a profession. Teaching was part of who they were: they loved it, and they could not imagine doing anything else. Relationships with their students motivated them. Building relationship with students helped inform assessment, facilitate classroom management, and enable small group interactions. Relationships with families also helped teachers meet the needs of their students. Teachers' relationships with other teachers helped them feel

supported and deal with the stresses associated with teaching. Connecting with colleagues is important because they are the only ones who “get it.” Professional development was most appreciated within learning communities with other teachers or other professionals. Teachers valued positive relationships with school administration who provided opportunities for choices in professional development, rather than blanket professional development for all. Finally, positive relationships with administrators, where teachers feel respected and heard, enabled them to feel supported.

Discussion

The significance of this research is that it may serve to support preservice teachers. This study may add to the body of knowledge about factors that contribute to teacher retention and attrition. The study provided the participants with an opportunity to have a voice and to share experiences. Focusing on relationship building, as well as advocating for the time and space to grow as educators, may inform ways to provide supports for teachers.

Most of the data collection occurred before schools were closed as a result of the global pandemic. One teacher who interviewed a week after her school building had closed indicated how much she missed her students and that she loved her job, once again emphasizing the role of relationships. Despite the timing, lessons from teachers interviewed before schools closed intersected with lessons from teaching during the pandemic. Smaller group sizes continued to be preferred as teachers engaged students. Teachers called for less emphasis on testing and more emphasis on relationships. When school buildings closed, teaching did not stop. Teachers found ways to connect with their students.

Relationships remained paramount, and evidence from the teacher dialogue and engagement on social media during the pandemic echoes the thoughts shared by the teachers in this study. One of the teachers interviewed mentioned that the work of Dr. Brad Johnson resonated with her. On March 26th, a tweet with this statement, “Relationships before Rigor, Grace before Grades, Patience

before Programs, Love before Lessons (Johnson, 2020)” received 1.4K likes and 818 retweets. The Council of Chief State School Officers (CCSSO, 2020) quoted Tabatha Rosproy, “Teaching fosters ingenuity and empathy. COVID-19 may have closed our doors, but we have the skills to continue connecting with our students. This isn’t ideal, but we are still teaching our hearts out.” On April 28th, in a National Teacher of the Year twitter chat, dialogue occurred around the following question, “What are some of the lessons we have learned from this pandemic that can be used as we return to school?” (Robinson, 2020). Responses mentioned the importance of feedback, relationships, awareness of disparities, and the need for Universal Design for Learning. Consistent with the teachers interviewed for this study, there was pushback on the need for standardized testing. Chanda Jefferson, South Carolina Teacher of the Year 2020, noted, “Teachers all over the state and nation are working harder than ever to ensure that students are learning with fewer regulations, such as waived accountability measures. Perhaps, educational leaders and policymakers should consider relaxing some of those requirements forever” (Jefferson, 2020). One teacher emphasized the importance of schools saying, “Public schools provide vital community services like childcare, regular meals, counseling, social services, and even healthcare in addition to providing each child with a high-quality education, in a safe and nurturing environment. They are essential to our American way of life” (Sams, 2020). Perhaps the most powerful message from teachers before and during the pandemic is to trust them and listen to them: “Trust teachers. Trust students. Trust families. Collect the stories of what is working, and re-commit to those. Examine what isn't working and be okay with letting go of the things that no longer serve our [students]” (Rosproy, 2020).

Conclusion

The crises continue to span the range from teacher shortages to global pandemics, and teachers continue teaching. The teachers surveyed and interviewed for this study expressed a love of teaching, the benefits of relationships to facilitate effective teaching, and the challenges faced by

teachers, which may, in part, stem from the public not listening to or trusting teachers.

Conversations on social media occurring after the study echoed similar themes. In consideration of *why this matters* and *what the next steps might be*, the silver lining perhaps comes with the notion of “possibility.” Love (2020) encourages us to consider what was suddenly possible during the pandemic. She noted how we were forced to trust teachers as states set aside standardized testing. Districts provided laptops for students, and companies provided free internet. The public recognized and relied on teacher creativity and pedagogy. The public valued the importance of families. Superintendents called for flexibility and compassion over compliance. Urging us to keep that same energy as we move into the future, Love emphasized that we cannot go back (Love, 2020). In a YouTube conversation, Dr. Love asked some important questions: “Why did it take a pandemic to see the humanity in teaching? Why did it take a pandemic to see how extraordinary this job is? Why did it take a pandemic to see that we needed resources?” (Love, Muhammad, Simmons, & Jones, 2020). It may be difficult to address those questions, but teacher educators and school administrators can examine the lessons from teachers and attempt to provide teachers with the tools, resources, time, and space. Allow teachers to do the work they love.

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Shifting the lens from coach to teacher: An exploration of teachers’ roles as coaches model instruction

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Abstract:

Coaches frequently model instruction for teachers, and research has largely taken a coach-centric view in unpacking this professional development approach. In this paper, I shift the lens to the teacher, and explore the various roles teachers embody during coaching cycles involving modeling, as well as the strategies coaches leverage to create aligned expectations with teachers regarding their roles. Implications for coaches and school districts are discussed.

Keywords: coaching; professional development; modeling instruction

Modeling is a potentially productive coaching activity that coaches can leverage with teachers to support their learning of ambitious instructional approaches (Gibbons & Cobb, 2017). When coaches model instruction for teachers, they intentionally showcase particular pedagogical practices for the purpose of prompting learning for the teacher who is observing (Gallimore et al., 1992). For example, coaches might model how to implement guided reading groups, engage students in a Number Talk, or provide meaningful closure to a lesson. Given its promise as a professional development activity, researchers have studied modeling across various contexts,

including teacher education programs with pre-service teachers (Bronkhorst et al., 2011; Clarke et al., 2014; Lunenberg et al., 2006; McGrew et al., 2018), mentoring programs centered on supporting novice in-service teachers (Feiman-Nemser, 2001), and coaches who provide professional development for in-service teachers (Saclarides & Lubienski, 2021; Saclarides & Munson, in press).

To date, the literature has largely taken a modeler-centric view to understanding modeled instruction. In this vein, one line of research has focused on what the modeler should be doing as they model instruction for the observing teacher, and findings point to the importance of the modeler intentionally creating learning opportunities for the observer by making their thinking and reasoning transparent during instruction (Bronkhorst et al., 2011; Feiman-Nemser, 2001; Lunenberg et al., 2006; McGrew et al., 2018; Saclarides & Munson, in press). An additional line of research has focused on the reasons that might motivate individuals to model instruction, which includes supporting new teachers with classroom management, illustrating a pedagogical approach, and/or countering deficit perspectives from skeptical teachers regarding students' capabilities (Bean et al., 2010; Lord et al., 2008; Saclarides & Lubienski, 2021; Vanderburg & Stephens, 2010). And yet, there is a lack of research describing what the observing teacher should be doing while the modeler models, in particular, the various roles the observer might embody. Conventional wisdom suggests that the observer might sit on the side of the classroom, observing and taking notes. However, when rubber hits the road, this might not be the case in a busy classroom setting. Hence, the overarching purpose of this study is to explore the various roles teachers embody during coaching cycles involving modeling, and how coaches create aligned expectations with teachers regarding these roles. Having a deep and comprehensive understanding of such roles, as well as the ways in which coaches create aligned expectations for such roles, may ultimately support coaches in enhancing learning opportunities for the observing teacher as they model instruction.

Method

Setting and Participants

This study took place in two public school districts in two different states: Midtown¹ and Southampton. These school districts were purposively selected (Yin, 2009) as they have coaches who reported that they regularly modeled instruction for teachers (which is this study's focus), as well as established elementary coaching programs. Located in an urban, midwestern city of the United States, Midtown enrolls 10,000 students in 18 schools. Midtown utilizes instructional coaches who coach teachers in all content areas (e.g., mathematics, reading, science) and grade-levels. Situated in a metropolitan, southeastern city of the United States, Southampton enrolls 14,000 students in 18 schools. Southampton has content-focused coaches who coach across all grade-levels, but in just one content area. Last, all coaches in both school districts are fully released from teaching, do not evaluate teachers, and respond to their building principals.

I partnered with six elementary teachers (Barbara, Brianna, Jennifer, Lindsey, Mackenzie, Michelle) and five coaches (Beth, Claire, Jade, Latoya, Meg), who modeled mathematics instruction for these teachers across five different elementary schools. Ten participants identify as white, with one identifying as Black, and all identify as female. The teachers had 1-23 years of teaching experience. Furthermore, the coaches had been coaching for 2-5 years, and had between 5-21 years of teaching experience.

Data Sources

For this qualitative interview study, I completed 29 semi-structured interviews with the coaches and teachers in one-on-one settings. The duration for each interview was between six and 53 minutes (mean of 23 minutes). While most interviews took place in-person at participants' schools, a small number of interviews took place telephonically. Discussions about teachers' roles

¹ All location and participant names are pseudonyms.

during modeled instruction surfaced in response to the following interview questions: What do you expect the teacher's role to be during model lessons? Do teachers you work with typically have the same expectations?, What do you do when expectations are not the same?, Is there anything you do before or during the coaching cycle to get aligned expectations? All interviews were recorded and transcribed verbatim.

Analytic Technique

When analyzing the data, I engaged in the process of open coding as described by Creswell (2013). In the first phase of analysis, I read through all 29 interview transcripts multiple times to gain a holistic understanding prior to starting the coding process. After these initial rounds of reading, I read through all transcripts yet again, but this time I specifically searched for excerpts that featured discussions about the teacher's role, as this would allow me to answer my research questions. After identifying all such excerpts, I then re-explored these excerpts and applied one of two broad codes. I applied the broad *Teacher Role* code to signify that participants were explicitly discussing different roles teachers embodied during coaching cycles involving modeling, and I applied the broad *Creating Aligned Expectations* code to signal that coaches were discussing how they sought to create aligned expectations with teachers regarding their roles. Next, beginning with all excerpts that had been coded with the *Teacher Role* and *Creating Aligned Expectations* codes, I used an open coding process to closely attend to the specific teacher roles mentioned by participants, as well as strategies for creating aligned expectations. While doing so, I recorded notes to myself in the margins about emergent themes or my own thoughts. When I noticed that a particular idea repeated, I created a code. For example, I noticed that coaches and teachers consistently discussed the importance of teachers simply observing instruction as coaches modeled. Hence, I created an *Observe* code to capture this teacher role. Throughout this process, I continuously refined the emergent codes. Ultimately, this analytic process led to the identification of 11 teacher roles, and two strategies for creating aligned expectations. In the last analytic phase, I

inductively grouped the 11 teacher roles into three broad categories depending on whether the role took place before, during, or after the modeled lesson, and created a visual diagram (see Figure 1 below).

Results

Teachers' Roles

Participants discussed 11 teacher roles during coaching cycles involving modeling (see Figure 1). The coaches indicated that these roles are not static, but instead fluid and dynamic as teachers may take on different roles as the cycle progresses. Coach Meg stated, “In the beginning...it’s gonna be more observational and then I’d like to see it...evolve into more interactional and then evolve into...jumping in more.” In the space that follows, I describe these roles before, during, and after the modeled lesson.

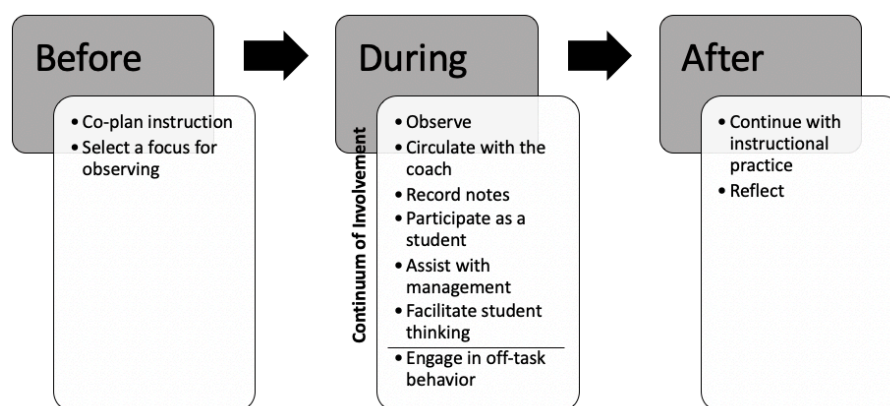


Figure 1. *Teacher roles during coaching cycles involving modeling.*

Before

Before the modeled lesson, participants discussed two roles the teacher should embody. First, to enhance teacher engagement and learning during the modeled lesson, the coach should support the teacher to *select a focus* that guides what she observes during the lesson. As Coach Jade put it, “I’d like to help her select a focus for what she’s observing...whether she comes up with it on her own, or we can come up with it together.” Additionally, as the coaching cycle progresses, the teacher may take on more responsibility as they *co-plan instruction* with the coach. Regarding her

coaching cycle with Teacher Barbara, Coach Beth shared: “By the second week that I was in there...she...began to co-plan with me and I would ask... ‘What do you think about this?’...So...allowing her to do some of the planning alongside me.”

During

Participants described seven teacher roles during modeled instruction. These teacher roles can be situated along a continuum reflecting the teacher’s involvement in sharing pedagogical responsibility with the coach for the lesson’s implementation.

At one end of the continuum, the teacher takes on roles that minimize their pedagogical responsibility to implement the lesson. The teacher may simply *observe* the coach’s instruction to maximize their own learning. As Coach Latoya shared:

I want them to grapple with what’s being presented. Because I think that if we become too overwhelmed with “I’m trying to help a kid,” I think they lose sight of what’s happening. I think that setting them up to be intentional in, “Hey, I just want you to observe what I’m doing, and I’m going to try and manage this whole situation...so that you get true benefit out of this.”

Teachers may also observe as they *circulate with the coach* while students work, listening closely to how the coach moves students forward in their thinking. Coach Beth said, “But as the students start working, she’ll typically walk with, just kind of follow me and listen to me talk to kids.”

Furthermore, while observing, teachers may *record notes* on a structured sheet that are aligned with their observation focus or the standard being taught. For example, Teacher Jennifer described the notes she took while observing Coach Jade:

I write out some of the questions and the problem. You know, what she's asking them, the way she includes the kids. And then I recorded the transitions, like ways that she explains that, and what she was doing while the kids were playing the games...so just kind of a combination of the dialogue, the action, and the pacing.

Last, the teacher may take the footing of a student and *participate as a student* in the lesson.

Teacher Brianna reflected on her participation in a lesson modeled by Coach Beth: “I think there’s a couple of times I would jump in...and I would do [a] turn and talk. And then I was like their peer as I was turning and talking with them.” Overall, as the teacher observes, circulates with the coach, records notes, and participates as a student in the modeled lesson, these roles do not require the teacher to take on substantive responsibility for teaching the lesson.

Participants described additional teacher roles at the other end of the continuum that increased the teacher’s responsibility for lesson implementation. In this vein, the teacher may *assist with management* by “calling out the behaviors” (Teacher Michelle) or “separate it [students exhibiting challenging behaviors] off from the group so it doesn’t interfere with the flow of what we’re doing” (Coach Meg). Furthermore, the teacher may help *facilitate student thinking* by asking students probing questions during small group work time. For example, Teacher Brianna said, “I was kind of like a partner to them, and I would go around. I was questioning...to help make sure everybody understands,” while Teacher Lindsey shared, “[M]y higher kids...I was able to push them a little bit further than what they’re getting whole group...so that was nice.” Sometimes this was even coach-prompted. Coach Latoya stated: “I prompted her before the lesson, I said, ‘Let’s intentionally ask some guided questions of the students as they are working with these fractional models. Like...how many 16ths would make a half?’” When assisting with management and facilitating student thinking, the teachers took on more responsibility for implementing the lesson with the coach.

Last, and outside of the continuum of involvement, participants described how teachers *engaged in off-task behaviors* that did not seem to directly support their own continued learning, such as using laptops and cell phones, and organizing and cleaning the classroom. As Coach Meg put it, “We’re not just in there to teach for 20-30 minutes while you get to sit there and catch up on emails...this is something you should be actively engaged in.”

After the modeled lesson, the participants described two additional roles teachers could embody. For one, teachers should *reflect* with their coaches about the modeled lesson. Coach Meg said, “I would like to have...outside of the calendar time some contact. You know, ‘How’s it going? What are you seeing?’” while Coach Beth stated, “We’ll debrief each day about what she’s noticing.” Furthermore, the teacher should *continue with the instructional practice*. That is, the teacher must commit to continuing with the instructional practice after the coaching cycle ends, and coaches may gradually release responsibility for instruction back to the teacher. Coach Meg stated:

[W]hat we need from the teachers when I'm modeling is some kind of commitment to keep going with it. To have a purpose for it. Not to have somebody come in and teach something for six weeks and then it disappears, you know? There's got to be some kind of commitment to at least try...doing it on their own.

Creating Aligned Expectations Regarding Teachers’ Roles

The coaches leveraged two approaches to create aligned expectations with their teachers regarding teachers’ roles during the coaching cycles involving modeling.

On the one hand, coaches utilized *direct approaches* that involved engaging teachers in explicit and transparent discussions about the roles teachers would embody during the modeled lessons. In this vein, Coach Meg stated, “I always meet with them before [the modeled lesson]. We always have our planning [meeting]...then through the spirit of discussion...those [teacher role] expectations come out.” Furthermore, Coach Beth said that she, too, generally has straightforward conversations with teachers about their roles during the planning meeting: “I am explicit with the expectation.” However, she mentioned that this was particularly important to do with new teachers with whom she had not yet had a coaching cycle: “When it’s a new situation, so like a new teacher to our school or somebody I haven’t worked with in a while, I will explicitly give my expectation of

what I expect them to be doing.” Coach Beth acknowledged that when she did not have such explicit conversations with teachers, she encountered challenges: “[T]hat can work against me.”

On the other hand, coaches also drew upon *indirect approaches* that involved avoiding having explicit conversations with teachers about the roles they should and should not embody during modeled instruction. For example, when discussing roles with her teachers, sometimes Coach Beth would ask teachers to take on a particular role, such as taking notes, so that she could have notes to show to an administrator as part of her Professional Learning Plan (PLP):

My mom, when I was growing up, would say, “If you don’t want to do something and someone invites you, you can always blame it on me.” So, I think that my principal has the same rule of thumb. So, I have been known to say, “The bosses are checking on me. I need to turn these notes in. So, please, I really need you to take some notes on this notes sheet because it’s part of my PLP” or whatever. I can sort of maneuver a little bit so it’s not like wagging my finger at them.

Additionally, while modeling instruction, if Coach Meg noticed that her observing teacher was taking on roles that did not directly support that teacher’s learning, such as engaging in off-task behaviors, instead of having a direct conversation with the teacher, Coach Meg tried to re-engage the teacher in the lesson by requesting her support:

[T]here were many, many times that I would come in and she would get on her computer, and that’s not the purpose of why I was in there...I just came up with ways I could suggest she help me...It’s all about working the angles...If you make it look like you’re evaluating them or judging them, that’s going to be an immediate defensive mode.

Given that these coaches lacked institutional authority, they could not force teachers to engage in coaching cycles with them. Hence, they likely leveraged such indirect strategies with teachers to help preserve the trusting coach-teacher relationship, and maintain their access to teachers’ classrooms.

Discussion and Implications

In summary, the participants in this study identified 11 distinct roles teachers embody during coaching cycles involving modeling. Furthermore, coaches identified two strategies that supported them in creating aligned expectations with teachers regarding their roles. Given that much of the prior literature focuses on the individual who is modeling instruction (e.g., the coach), this research is important as it shifts the lens to the individual who is observing the modeler (e.g., the teacher), and begins to unpack their roles and the ways in which coaches and teachers can work together to create aligned expectations regarding roles. Ultimately, this research will support coaches and teachers as they seek to co-engage in meaningful coaching cycles involving modeling with the goal of maximizing teacher learning.

In thinking about the roles teachers might embody during coaching cycles involving modeling, the coach and teacher need to consider important contextual factors such as:

- Has the coach already established their presence in the teacher's classroom? Does the coach know some or most of the students' names? If not, it might be important for the teacher to take on the role of assisting with management until the coach feels more comfortable with the students.
- Is the coach modeling a completely new instructional practice in the teacher's classroom that the teacher has never seen before? What is the teacher's starting comfort level with the instructional practice? If the instructional practice is something to which the teacher has never been exposed, or if the teacher is starting out feeling uncomfortable with the instructional practice, it may be important for the teacher to share minimal pedagogical responsibility for enacting the lesson so that they can primarily observe, take notes, and be in learner-mode.

Given that coaches' work with teachers is highly context-dependent, it is important that coaches and teachers, together, attend to these and other contextual factors when thinking through teachers' roles during coaching cycles involving modeling. I conclude with a fictitious vignette featuring how one coach and one teacher might negotiate the teacher's roles during modeling, while taking into account various contextual factors:

Stephanie is a first-year teacher, and has asked Coach Sara to model instruction in her 4th grade classroom. One of the school-wide goals for the academic year is that all teachers at Stephanie's school will implement Number Talks to help build students' number sense and fluency. Stephanie is feeling uncertain about how to effectively implement this pedagogical routine and wants to observe a more experienced other. Coach Sara has agreed model Number Talks for one week in Stephanie's classroom. Before their coaching cycle starts, Coach Sara and Teacher Stephanie meet to discuss the upcoming lessons. During this planning meeting, Sara: shares her instructional plans with Stephanie; supports Stephanie in selecting an observation focus for the lesson (teacher questioning); and explicitly discusses the various roles Stephanie should embody during the coaching cycle. Given that Stephanie is a first-year teacher and does not yet feel confident implementing Number Talks, the coach-teacher dyad agrees that Stephanie should spend the first few days observing and taking notes. As the week progresses and as Stephanie feels more comfortable with this pedagogical routine, Stephanie can take on additional roles, such as participating as a student would and supporting the coach to facilitate student thinking by asking probing questions. Given that Sara has been a coach at the school for close to 10 years, she knows the students well and tells Stephanie that she will not need help managing student behaviors. The week begins, and as Sara models Number Talks, Stephanie sits on the side of the classroom, taking notes while she observes. Given that Stephanie is focusing on teacher questioning, she pays close attention to the types of questions Sara asks, and the impact these questions have on student discourse and thinking. By mid-week, Stephanie feels more comfortable with Number Talks, and although she continues to observe and take notes, she allows herself to become more involved in the lessons by participating with the students, and adding in a question here and there to further nudge student thinking. At the end of the week, Stephanie and Sara meet to reflect about the modeled lessons. Now that Stephanie has a better understanding of how to implement Number Talks, she is excited to try them out independently next week. Sara and Stephanie put together a schedule for the

following week so that Sara can come and observe Stephanie as she implements Number Talks, providing support and offering feedback before fully closing out their coaching cycle.

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PUBLICATION GUIDELINES

for the OHIO Journal
of Teacher Education

The following guidelines are presented for publication opportunities for OJTE (the OHIO Journal of Teacher Education).

The OHIO Journal of Teacher Education provides a forum for the exchange of information and ideas concerning the improvement of teaching and teacher education. Articles submitted should reflect this mission. Their focus should concern concepts, practices, and/or results of research that have practical dimensions, implications, or applicability for practitioners involved with teacher education. The journal is regional in scope and is sent as a benefit of membership in the Ohio Association of Teacher Education.

Manuscripts are subject to review of the Professional Journal Committee (co-editors and editor consultants). Points of view are those of the individual authors and are not necessarily those of either Association. Permission to reproduce journal articles must be requested from the editors.

MANUSCRIPT GUIDELINES

Content: Journal issues may be “thematic” or “open.” Currently, all future issues are designated “open.”

Length: Manuscripts, including all references, bibliographies, charts, figures, and tables, generally should not exceed 15 pages.

Style: For writing and editorial style, follow directions in the latest edition of the Publication Manual of the American Psychological Association. Omit the author’s name from the title page. Include an 80-100-word abstract.

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

Cover page: Include the following information on a separate sheet attached to the manuscript: title of the article; date of submission; author's name, author's terminal degree; mailing address, e-mail address, business and home phone numbers, institutional affiliation; and short biographical sketch, including background and areas of specialization.

Submission: Submissions must be word processed using Microsoft Office Word (Microsoft Excel tables are permitted). Submit the manuscript as an attachment to an e-mail to OJTE@xavier.edu

EDITORIAL PROCEDURES

Authors will be notified of the receipt of the manuscript. After an initial review by the editors, those manuscripts which meet specifications will be sent to reviewers. Notification of the status of the manuscript will take place after the deadline date for each issue. The journal editors will make minor editorial changes; major changes will be made by the author prior to publication. Manuscripts, editorial correspondence, and questions can be directed to Dr. Thomas Knestrict at OJTE@xavier.edu.

IMPORTANT DATES OF NOTE:

March 1, 2022 Closing date for acceptance of manuscripts for Spring Journal 2022

Publication date: April 2022

MEMBERSHIP

Interested in becoming a member of OATE (Ohio Association of Teacher Educators)? Please visit the following website for current information: <https://sites.google.com/site/ohioate/home>

Additionally, information about OCTEO (Ohio Confederation of Teacher Education Organizations), Fall and Spring OCTEO Conferences, and presentational opportunities, can be found at the following site: <http://www.ohioteachered.org>.

Our organization looks forward to your interest in OATE and OCTEO in 2022.