Pillars of their practice: an analysis of preservice teachers' beliefs, where they come from, and how they develop

Katherine J. Burke[1]*, Maria Aguilar Walls[2],
Timothy Fukawa-Connelly[1], Michael Smith[1], Casey Crass[1],
Sue Kelley[1] and Elvis Wagner[1]

[1]Teaching and Learning, Temple University, Philadelphia, PA, United States, [2]Policy, Organizational & Leadership Studies, Temple University, Philadelphia, PA, United States

Drawing on a series of interviews of teacher residents, this study investigates residents' foundational beliefs, the influences that shaped them, and the extent to which they changed during their residencies. This study has three primary findings. First, residents developed a more sophisticated understanding of what relational teaching entails. Second, residents increasingly recognized the importance of making real-world connections as a motivator, though they did not fully recognize the extent to which students' individual or cultural knowledge could be as an instructional resource. Third, residents increasingly asserted their teacherly identities and used their university courses as tools for reflection, rather than as dictates to be followed.

Introduction

Teachers, at all points in the professional development continuum, have a vision of what makes for an outstanding teacher and the type of classroom they want to cultivate. The beliefs that comprise this vision influence their short- and long-term decisions about curriculum, pedagogy, and classroom culture (Mockler, 2011). This development is "an ongoing process of interpretation and reinterpretation of who one considers oneself to be and who one would like to become" (van Lankveld et al., 2017; p. 2).

The student teaching experience is a primary site for such becoming. During student teaching, the theoretical and practical aspects of university teacher education are re-understood. This occurs through day-to-day teaching activities when the student teacher is in constant conversation with a classroom-mentor teacher, other teachers, school administrators, and university personnel and classmates—possibly while still taking preparation courses (Samaca Bohorquez, 2012). Or, as Benavides (2013) argued, a teacher's "identity is generally recognized as multifaceted and constantly shifting because teachers are influenced by the contexts that surround them" (p. 38). As such, the development of preservice teachers' identities during student teaching is of interest because of the co-occurrence of preparatory coursework, first-hand classroom practice, and mentorship experienced during this time.

Moreover, Hong (2010) found that preservice teachers' identities were vague compared to those of more senior teachers, whose identities were more specific and grounded in their experiences. Korthagen (2004) suggested that fundamental changes to teacher identity were

unlikely to occur during student teaching because of the profound impact of the preservice teachers' prior student experiences. Korthagen suggested that preservice teachers might use the student teaching experience to confirm and deepen their extant beliefs and values rather than confront and change them (generally, values are a subset of beliefs (Veugelers and Vedder, 2003) and we will simply describe beliefs moving forward). Similarly, Kagan (1992) suggested that preservice teachers had insufficient knowledge of classrooms and students to develop a well-articulated vision of teaching, and instead relied on vague and simplified beliefs. Thus, the student teaching experience, along with senior teachers' mentorship, can provide teachers-in-training with actual teaching experiences and knowledge through which they can develop their teacher identities. Macías Villegas et al. (2020) asserted that the literature has insufficiently explored the changes to teacher identity that occur during student teaching, especially regarding the ways their influences change and interact.

Theoretical underpinnings

Pajares (1992) began the abstract of his classic (cited over 17,000 times) review on teachers' beliefs with this claim: "Attention to the beliefs of teachers and teacher candidates should be a focus of educational research and can inform educational practice in ways that prevailing research agendas have not and cannot" (p. 307). His call was informed by the understanding that "the beliefs teachers hold influence their perceptions and judgments, which, in turn, affect their behavior in the classroom" (Pajares, 1992; p. 307). Consequently "understanding the belief structures of teachers and teacher candidates is essential to improving their professional preparation and teaching practices" (Pajares, 1992; p. 307). Unfortunately, according to Fives et al. (2015), research on teachers' beliefs has "an established tradition of dichotomizing the beliefs teachers' hold into general paradigms that may be too broad to illustrate the nuances and variation of beliefs at work in daily practice" (p. 250). A more nuanced understanding of belief structures would shed light on teacher candidates' teacherly identities as beliefs and identities are intertwined (Zembylas and Chubbuck, 2015).

Due to our focus on both beliefs and the sources of beliefs and our expectation that our participants will draw on their experiences as students and teachers, we adopt a pragmatic perspective both in terms of orientation toward analysis and in terms of our research methods As Morgan (2014) explains in his argument for pragmatism as a paradigm for social research, Dewey "sought to promote pragmatism by reorienting philosophy away from abstract concerns and turning it instead toward an emphasis on human experience" (p. 1046). That reorientation focused on asking two "inseparable questions: What are the sources of our beliefs? And, what are the meanings of our actions?" (p. 1046) Dewey distinguished between habit and inquiry, where a person would enact a habit when their current beliefs are sufficient to handle the demands for action. In contrast, when those beliefs are not, a person would engage in inquiry. For Dewey, the inquiry cycle is one in which a person encounters a problem, attempts a solution, and evaluates whether the solution is good enough. This process is undergirded by, and inseparable from, their experience. This study focuses on preservice teachers during their training and classroom teaching—we expected that they would be confronted with problems

that require engaging in the inquiry cycle. Thus, we explore their beliefs and sources of those beliefs. We see the participants' claims as grounded in their social context, both from their experience prior to entering teacher training and within the classrooms they work in as both students and teachers.

Sources of teacher beliefs

Levin (2014) summarized the state of research on the sources of teacher beliefs and noted that there were relatively few studies. As such, no firm conclusions should be drawn (Levin, 2014). Moreover, there were mixed results about if, how, when, and why changes to teacher beliefs might occur. Thus, Levin concluded that additional research is needed. Levin and He (2008) offered some tentative summaries based primarily on a longitudinal pair of survey studies— the first with 84 preservice, pre-student teaching undergraduate participants and the second with a subset of 22 participants once they were in-service teachers. The 84 preservice teachers were in a traditional four-year teacher preparation program and were asked by Levin and He to make attributions of beliefs about pedagogical practice via survey. Prior to student teaching, participants' previous experiences as students and their fieldwork were the two most influential sources of beliefs, followed by educational coursework. In the follow-up study of a subset of 22 in-service teacher participants, their learning during the program, prior experience as students, and their own teaching experience were the most informative of current pedagogical beliefs. This analysis aligns with Clark and Peterson's (1986) finding that teachers' core beliefs were primarily formed by their experiences in K-12 classes.

Perry et al. (1992) surveyed participants who were either pre-student teaching, post-student teaching (but prior to teaching full-time), or on the job. All groups reported that their prior teachers were extremely important influences on their beliefs. For both pre- and post-student teaching groups, their past teachers were the most important influence on their beliefs. Personal teaching experience was the most important influence on pedagogical beliefs for experienced teachers and the second strongest influence on beliefs for post-student teaching. Experienced teachers also noted that their experience with students (distinct from teaching practice) was a strong influence on beliefs. Finally, formal education, including both coursework and field experiences, during teacher prep was important to all three groups. That is, at each stage in the teacher developmental trajectory, the participants rated their coursework as influential and important in their beliefs about teaching and classrooms. As a result, Perry, et al. noted that there were not many meaningful differences between the factors that impacted pre- and post-student teaching groups, while experienced teachers were distinct in their reliance on their own experience.

Synthesizing Levin (2014) and Perry et al.'s (1992) claims about beliefs, Levin and He (2008) suggested that prior to student teaching, preservice teachers have an idealistic, though underdeveloped, image of a teacher that focuses on caring and listening. They focus on their individual relationships with students, but not actions that support the development of such relationships. According to the experienced teachers, those relationships included classroom learning communities, which supported instructional goals (Levin and He, 2008). Finally, Levin (2014) claimed that there was evidence that

other elements of teacher beliefs changed over time and as they gained more teaching experience (e.g., Chant et al., 2004; Fives and Buehl, 2008; Levin et al., 2010, 2013; Luft and Roehrig, 2007). Building on the extant teacher beliefs research, we sought to gain a deeper understanding of preservice teachers' beliefs and their development as the teacher residents gained more in-class instructional experience. We have chosen to focus on the most primary beliefs that the preservice teachers hold for their practice and refer to them as 'pillars of practice' (typically 'pillars' in subsequent text). We argue that they organize the preservice teachers' ways of thinking about how to structure classrooms and instruction. We suggest this term broadly captures the notion of beliefs that undergird significant aspects of classroom practice. We refer to the participants as teacher residents because they were student-teaching for an entire academic year while concurrently enrolled in graduate coursework that led to teacher certification. In particular, we are interested in understanding how and from what sources of influence teacher residents' belief structures have formed into core pillars of practice. To fill the aforementioned gap in the literature, we investigated the following questions:

1. What are the primary beliefs that are central to teacher residents' conceptions of their practice?
2. What factors influence the development of those beliefs?
3. To what extent and in what ways do those beliefs change during residents' preservice education?

Methods

Participants

This study was conducted at a large, public, urban, research university in the mid-Atlantic region of the United States. We recruited participants from a group of graduate students enrolled in the University's Teaching Residency (TR) program. This 12-month master's program pairs coursework with an intensive teaching residency and is designed to prepare TR students to teach in urban, high-needs schools.

Recruitment occurred at the beginning of the fall 2020 semester. Eleven of the 30 TR cohort students participated in the study. Our participants represented middle grades science, secondary science, and secondary Spanish preservice educators (Table 1). Our sample was fairly representative of the greater TR cohort, though it was slightly higher in females and in Spanish educators than the cohort population. We note that the academic year was impacted by the Covid-19 pandemic. Participants engaged in both remote instruction and limited in-person teaching.

Data collection

A central goal of our inquiry concerned the development and changes of preservice teachers' thinking, goals, and orientations. Thus, we interviewed each participant four times during the academic year. The semi-structured interviews were conducted via Zoom and lasted between 45 and 60 min. Interviews were conducted by four investigators involved with this project. Given the cumulative, reflective nature of this work, each participant was interviewed by the same investigator.

Each interview consisted of a foundational interview task, followed by an explicit discussion of the participant's pillars (Table 2). The interview tasks of the first three interviews probed sources (I) and representations (II and III) of the participants' pillars in a way that indirectly primed them to discuss their pillars of practice. For instance, in Interview I, participants were asked to talk about a teacher upon whose practice they wanted to model their own. The discussion of former teachers' pillars of practice provided our research team with insight regarding the participants' implicit pillars, while also priming them to more explicitly discuss their pillars. Conversely, the interview task of the fourth interview had participants consider their views on educational theory, which directly prepared them to reflect on their pillars of practice and how their pillars had evolved during their TR year. The fourth interview's task required the participants to provide a theory-driven conceptualization of education, school, subject matter in school curricula, teaching method, and school and social practices.

TABLE 1 Participant demographics.

	n
Gender	
Female	9
Male	1
Other	1
Race/ethnicity	
White	8
Asian	2
Hispanic	1
Instructional grade and subject	
Middle grades	
Science	3
Secondary grades	
Spanish	3
Science	5

TABLE 2 Interview timeline and structure.

Interview	Time period	Interview task
Interview I	September	Reflection on prior experiences as both a student and teacher.
Interview II	November–December	Explanation of a representative teaching artifact from practice.
Interview III	March	Stimulated recall interview on representative lesson.
Interview IV	June	Principle educational beliefs modeled on Dewey's "This I Believe".

Through this direct task, we considered how the participants' discussions of educational theory aligned with their pillars.

Between periods of data collection, investigators reviewed the prior interview transcripts and compiled a list of each participant's pillars of practice. This enabled investigators to continuously engage the participants in a reflection on their pillars. During Interviews II, III, and IV, the participants were reminded of their previously stated pillars and asked if their views on these pillars had shifted. The repeated, direct discussion and reflection on the participants' pillars of practice functioned as a type of member checking for our interpretation of their stated pillars in prior interviews. By doing so, we were able to confirm or refute our inferences as well as refine our claims.

Data analysis

At the conclusion of data collection, the research team began a thematic analysis (Braun and Clarke, 2006) of the interview transcripts using the qualitative coding tool, Dedoose. Our unit of analysis was the content unit, a segment of discourse designed to make a single point. A single investigator open coded the first-round interviews, providing the research team with an initial codebook. This coding was later reviewed and streamlined by a more senior member of the research team. Initial codes were developed based on the literature and articulated foci of the teacher education program, such as real-world connections (Table 3).

Once the codebook was developed, Interview I was recoded and Interviews II, III, and IV were coded via a collaborative coding process between various pairs of researchers. The coding pairs met synchronously to read, discuss, and code each content unit (Miles et al., 2013). We then developed axial codes to organize similar emergent codes. The code co-occurrence function of Dedoose allowed us to track the frequency of axial codes. We narrowed our focus to medium to high-frequency codes (Guest et al., 2006), defined here as codes that occurred in 10% or more of the content units. Ultimately, "relational teaching" and "real-world connections" were the two axial codes that were present for all teachers and were most frequent. "Relational teaching" was a parent code used to capture claims about interpersonal relationships between the participant and their students, between students in the classroom, and between participants and the families and caregivers of their students. We knew from the literature that teachers believed in the importance of the student-teacher relationship, but the other elements were drawn from the data. We then developed the parent code as part of our initial data analysis. We then refined the teacher-student code to more clearly specify the range of response residents made. Doing so allowed us to articulate the hierarchical developmental trajectory we present in the results. Similarly, "Real-world connections" was anticipated due to extant literature and applied when participants discussed the application of class lessons or content in the real world, oftentimes with a particular interest in students engaging in the larger global community. We met frequently over the course of nine months to "sort, synthesize and conceptualize" the corpus related to relational teaching and real-world connections (Charmaz and Belgrave, 2012, p. 356) and generate meaningful subcode categories. Again, using the code co-occurrence function of Dedoose, we created a framework that captured the developmental trajectory of the participants in terms of their thinking on these two major themes.

TABLE 3 Initial codes.

Code	Description	Example
Explicit Pillar	Pillars of practice explicitly stated by teacher residents	C.O., Interview I: being accessible to my students. So, like, having them know that I am there for them and there to support them. Now, not just there to give them a grade or to fail them or something like that but that I am genuinely interested in their development as humans and as students in my class, or in other classes. Not that I can help them with their other content but I can give them advice on how to study, or I have one student who has been emailing me because she wants to learn more about colleges. So I guess not just chemistry related. Yeah, trying to let them know that if they need to discuss something with me or they need help with something it does not always have to be chemistry related.
Implicit Pillar	Pillars of practice implicitly stated by teacher residents	Gina, Interview I: I do not know exactly how it, it's hard to put into words because I feel like one of the main things I do is just, I talked about it a lot. And I'll like draw in other references and make connections as well when I'm teaching and just, I feel like that shows that I feel like that helps create it, or I'll talk about my own life, if we are talking about sustainability of it. Oh, and I have my reusable water bottle
Mechanism	Descriptions of ways in which teacher residents enacted pillars in their classroom/practice	Laura, Interview 2: I would ask them in order, as everybody seen hail in their lives because like not it's not something as common maybe. And here I go over what is it, you know, and all that. And This is just a summary slide. And then the temperature maxima, minima. …With the weather in Spanish. And I … teach them how to read it like with the words that we have
Influence	A specified source of a belief or pillar	Reagan, Interview 1: I think the relationship that I had with her was very strong in and outside the classroom, like we would meet and talk to keep in touch with her [*prior teacher*] now. I think that really impacted me about like socially developmentally as I was going through high school. So along with the practices that she was using in the classroom where she was just like, cool and calm but brought the energy that we needed for learning the material, she also was like really good about meeting students during lunch time, and after school. And just like those little extra time commitments which I think it went a long way for me and I can imagine that it goes a long way for a lot of students when they have a teacher that just devotes that little bit of extra time.

Results

We coded approximately 1,170 content units across the 44 interviews with our 11 participants. Relational teaching and real-world connections each accounted for over 20% of the total codes. Given their prevalence, we examined these two categories in greater depth to gain a more nuanced understanding of how they played out across the interviews.

Relational teaching

The TR students' interviews evidenced relational teaching as a clear and consistent theme with two facets: (1) the teacher had a range of responsibilities for developing interpersonal relationships with students, and (2) those responsibilities were often associated with specific benefits for either the students or the teacher. The more complex the claimed responsibility, the more likely it would benefit the teacher. Specifically, over the course of their program enrollment, the TR students' description of their views on relational teaching developed along the following trajectory:

1 I need to be available to answer student questions outside of class.
2 I need to create an open and supportive classroom environment so that students will feel comfortable and participate. My classroom management will also be easier.
3 I need to learn about my students, what they both like and do not like, so that I can better connect my lessons with their interests.
4 I need to learn what my students know so that I can make use of their knowledge during my lessons.

We will conclude this section with a brief discussion of residents' descriptions of the socio-emotional benefits of relational teaching.

Availability

The first level of relational teaching in initial interviews was characterized by residents' descriptions of availability as a critical component in building relationships with students. For example, Kashvi described an 'open door' policy as a means of relationship building:

> I'm just like having that open door just for them to know that we are trying our best to understand and then like obviously, that does not mean every student will come running through my door to tell me what's going on. Cause that's not high school.

Kashvi also described the importance of an open-door policy as attempting to convey to students that teachers are trying to understand them. This notion of availability might be understood as a baseline for relationship development, which places little demand on teachers beyond this demonstration of willingness but has explicit benefits to neither teachers nor students. That is, simply 'being available' does not, by itself, help students. Students need to make a meaningful effort to take advantage of the availability. When teachers named a benefit of availability, it tended to be in direct response to student questions,

where the student's benefit depended on the quality of their question. For example, C.O. said in Interview I:

> That's what I was also gonna say, being accessible to my students. So, like, having them know that I am there for them and there to support them. Now, not just there to give them a grade or to fail them or something like that. But that I am genuinely, genuinely interested in their development as humans and as students in my class, or in other classes. Not that I can help them with their other content, but I can give them advice on how to study. Or I have one student who has been emailing me because she wants to learn more about colleges. So, I guess not just chemistry related. Yeah, trying to let them know that if they need to discuss something with me or they need help with something it does not always have to be chemistry related.

In this case, C.O. noted a responsibility to be available to the student. She explained possible benefits to them that include the chemistry content she wanted them to learn, how to study, and information about colleges. The cited benefits are both academic—in terms of class performance—and career-oriented—when considering college options. These benefits are direct responses to student questions.

Creation of an open, supportive environment

The second level of relational teaching was characterized by the residents' descriptions of a responsibility to create an open and supportive environment. These descriptions demonstrated two means by which teachers might work to create such environments—teachers' demeanor and purposeful interaction—as well as two different types of benefits—one for the teacher and one for the students.

First, in initial interviews, a teacher's demeanor was commonly stated as a means to create an open and supportive environment. For instance, in Interview I, Rachel claimed:

> There's a teacher I had in high school…he was just very like candid and goofy with his students. But like also knew how to, like, be an authority figure if he needed to… I just had a lot of respect for him and the way he taught the class. Like he was just really like sarcastic and funny with the kids and I like hope to have good relationship building skills with my kids and be able to like be serious but also goof off and just have a good time in class.

Rather than detailing specific actions or mechanisms, Rachel focused on her teacher's general demeanor, describing him as sarcastic and funny while also being an authority figure when needed. For Rachel, a teacher who had a fun and unserious demeanor showed a means of being open and approachable to students.

Further, in initial and later interviews, residents described purposeful interaction with students as a way to create an open and supportive environment. For instance, in Interview I, C.O. referenced individually greeting each student at the start of class as a means of building relationships. During Interview IV, Rachel explicitly described incorporating "more games or something like that" to build relationships with students and get to know them better. Rachel was also explicit that an interpersonal relationship with her students is a critical component of successful classroom management:

> Definitely like building relationships. I think I've mentioned that before, but I think that's the one I want to focus on the most. I think that'll kind of bring everything else together. So just like classroom management obviously still need other things involved with that. I think if you do not have the relationship with the students, it's just going to not be a great year.

Second, with less of a focus on how teachers might create an open and supportive environment, residents also described how students benefit from such environments. For instance, Laura suggested that students benefit from having a space where they can feel safe, in contrast to the experiences of many students who might not feel that way outside the classroom. Sam described in Interview I how teachers support student's socio-emotional learning by getting to know their students better:

> I think it stemmed from the fact that a couple of times this year, students have come to us and said, "So I'm having this problem and, like this is why I am behind. Can we work together to figure out something?" And I kind of realized that the only way the student is going to feel comfortable coming to talk to you is if you are ready to listen and you are not ready and you are not going to judge them. And you are not going to assume anything about them or state your opinions at them. But you are just there to listen and help.

Sam claimed that teachers must be ready to listen so that students know they will not be judged. By creating an open and supportive environment, the teacher also creates the opportunity for students to benefit from their advice.

Learning about students to develop better lessons

The third level of relational teaching was characterized in later interviews by the residents' description of a responsibility to learn about their students to teach more engaging lessons that better support learning. That is, the teachers derived the benefit of developing better lessons from relational teaching.

For instance, in Interview II, Mercedes discussed an online diary project where students were asked to "express" and "share parts" of themselves:

> Yeah, so I feel like this project has really helped me learn about my students so much and see kind of insights into their lives and then also given them the ability to share and think about their lives in a school space…So, trying to address different student needs and really, what's the word, multiple as multiple means of teaching as possible. And communication as possible.

In this quote, Mercedes directly noted that she had learned more about her students and that giving them the opportunity to "be who they are, you know, and talk about what they want to talk about…" gave rise to the outcome that "they are more connected with the assignment." That is, by creating the opportunity to learn about her students, she was better able to engage them in academic work.

During Interview IV, Reagan made a similar claim, suggesting that knowing the students allows teachers to better design lessons:

> I think that the methods that we use to teach also have to be responsive to our students. I think that under this comes us getting to know our students as educators and getting to know who they are as people, who they are as students, so that we can meet their needs in the best ways as not all students respond to the same kind of instruction. They think that if we approach it from one angle all the time we are going to miss, we are going to miss some students. So I think it's really important under this one to get to know our students and be intentional about how we are meeting them in the classroom.

Here, Reagan states that teachers have a responsibility to get "to know our students" so that "we can meet their needs." She then repeated that "it's really important…to get to know our students and be intentional about how we are meeting them in the classroom." The repetition and use of the verb 'meet' support our interpretation that Reagan viewed an interpersonal relationship with students as a tool that supported pedagogical goals: By getting to know their students, teachers can better design and execute lessons plans that support the pedagogical goals of teaching the content.

Learning about students so that I can make use of their knowledge in my lessons

The fourth level of relational teaching was characterized in Interview III by one resident's description of a responsibility to learn about their students in order to rely on them to teach important ideas. Sam claimed:

> Here that's about making sure that when I when I'm talking to them and I'm asking them questions, I'm not making any assumptions about what they know or what they do not know. But, instead, giving them a chance, like because I might be like, "Hey, how does a car combustion reaction work?" And I might think, "Well, I do not know if anyone's going to know that." But like five kids may because they are really into cars. So, um it's about making sure that when in this lesson, what I would do is kind of make sure that I may not have to be the one to explain that. I may let the students explain and let them have that time. And that also goes with creating a safe space because I'm taking a step back and letting the students fill the space with their voices.

Here, Sam provided a hypothetical example that students who are "really into cars" might be able to teach other students about internal combustion. Sam illustrated the point that students are often knowledgeable about topics that might be part of lessons and that if a teacher knows that, then "I may let the students explain and let them have that time… I'm taking a step back and letting the students fill the space with their voices." We interpreted this as Sam claiming to want to give students space to be experts and de-center the teacher in the room, and that knowing students' interests would make that possible. This would then benefit both the teacher and their students. We note that Sam is the only teacher who claimed this to be important, but it is aligned with the ideas of Culturally Sustaining Pedagogy, which the institution attempts to convey, thus we felt it meaningful to include as a potential category.

Supporting students' emotional well-being

Most of the comments about relational teaching focused on academic benefits, yet two teachers also described socio-emotional benefits that could result from such teaching. We could interpret Levels 1 and 2 as possibly including socio-emotional benefits, but the residents did not explicitly name them as such. Thus, we interpreted this as a different type of benefit. During the third interview, April claimed:

> Creating an environment where they feel safe that they could talk to me right… I do like to check in so make sure they are good… I think helps with creating an environment where they feel like they can talk to me.

Here, April specifically referenced regular conversations with students to create meaningful opportunities for them to indicate when "anyone's not doing okay" so that April can then "stop this lesson and we have a talk if that's needed." April thus expressly prioritizes students' social and emotional wellbeing over academic goals. Curiously, both of the participants who made comments about supporting well-being were Spanish teachers. We suggest further research to explore this phenomenon.

Real-world connections

It was of little surprise to find that participants emphasized the importance of making real world connections in their teaching. Indeed, a primary aim of the TR program is to prepare preservice teachers to design lessons that foster two kinds of real-world connections: those that aid students in understanding the value of a lesson on their lives outside school (e.g., "lesson-out connections"), and those that draw on students' lived experience as an instructional resources (e.g., "life-in connections"). We devised a more detailed taxonomy that captured development within the lesson-out and life-in dichotomy based on the ways that the participants described real-world connections. First, by reading all text that was coded as real-world connections, then by exploring the rationale that participants offered for the importance of the connections, we found clear distinctions in the ways that participants discussed the values of real-world connections for their classrooms:

1. Real-world connections are a means of motivating students by adding a context that I believe is of interest to them.
2. Real-world connections help students to better remember ideas.
3. Real-world connections help me, as a teacher, illustrate and explicate the content to better support student understanding.
4. Real-world connections are a useful evaluation tool (e.g., students can be evaluated as to whether they can accomplish a task they might encounter outside of school).
5. Real-world connections allow me, as a teacher, to show how content (especially science) can explain the world. My goal is that my students can understand the world using the habits of my discipline.
6. Being able to engage in and with the world is the goal of education and I use my subject to help students become able to do so. Students are the active agents in engaging with the world.

Our analysis suggests that there was a developmental trajectory in the extent to which the residents developed the lesson-out connections and in how they imagined drawing on their students' experience as a resource. We found this trajectory to be absent from residents' discussion of life-in connections; Thus, the salient trajectory categories are detailed in the Lesson-Out Connections section, but not the Life-In Connections section. We will conclude this section with a discussion of two ideas we found conspicuously missing in residents' interviews.

Lesson-out connections

In their initial interviews, the residents talked about the importance of lesson-out connections by claiming they led to benefits, though the nature of such benefits was relatively unspecified. Sam, for example, praised a former tutor when asked about influential former teachers on whom they wanted to model their practice because the tutor made lesson-out connections: "[He] connected things to the real world for me. I feel like I've acknowledged that [that's] the best way to connect with our students." That connection was not always linked to the content of the discipline as Sam made clear:

> He was very good at putting things in perspective about life. And I think that part of being a teacher is being able to tell your students like "okay, take a deep breath and think about how this connects to like the real world and think about how what you are doing is good or bad for your health." So like you know, are you working so much that you are over stressing yourself? Like are you taking time out and giving yourself time?

Aligned with categories 1 and 2, Sam claimed that making these kind of connections fosters understanding and increases motivation:

> One of the things I've learned from being a student myself and now teaching is if you connect it to something that's real for them, something that they understand, they remember things better. They understand things better. And they are more curious.

Though vaguely or superficially described in initial interviews, residents recognized the potential power of using real-world connections in their lessons. For example, in Interview II, Gina explained the category 5 approach she took in her lesson:

> I put in words like people that I thought that they would know just like I thought it would be more fun, or just more interesting for them than like if I was just made up like, oh, Sally got sick with this like it's just a little bit more interesting not necessarily like oh this directly relates to your life…I think the way that I like to make it more relevant to their lives, I'd like to put it in the context of a lot of things in the context of [the city].

In contrast, in Interviews III and IV, residents were generally much more explicit about their approach to fostering lesson-out connections. Leanne provided a striking category 5 example:

> I made a four-day mini-unit for about the periodic table. And you know, each day is a lesson plan. So I had four lesson plans I'm going to be looking at the first days, which is the launch day

of you know, the PBI [Project Based Instruction] unit. So it's about the periodic table. There was a standard that is um you know about patterns of electrons and energy levels and then three… standards which were about periodic table, but the objectives were the first one students will be able to utilize the structure of the periodic table in order to analyze the patterns and behaviors in their element. And students will be able to relate their element to a real-world scenario in order to communicate its applications in everyday life. So it's very real world meets periodic table.

Further, by her final interview, C.O. articulated that not all real-world connections are of the same value, echoing the nuances of categories 1, 3, and 5:

I think maybe being explicit to the students when you need to, about how this would be useful to them in the future. But also trying to incorporate, or at least thinking of why it could be useful for them now. A good way of mixing them. But I think just not focusing only on why it would be useful, because then they, a lot of them will not feel any sort of like a sense of urgency and trying to understand it if they do not think they need to until they are older.

Sam, who we cited earlier, also made an important distinction between real-world connections in general and those that are culturally relevant, in the same vein as category 6:

I also think that part of that subject matter and part of that why needs to include the social heritage and the culture of the students, so that they can understand how the subject matter can be connected to their lives. And sometimes it can be a little bit easier like if you are teaching history courses, it can be more easily connected to the outside world, in some ways, but like and specifically to culture. But I think that we should make sure that in all subject matters, that's a bridge that's important.

In short, over the course of their interviews, residents seemed to develop a more nuanced understanding of lesson-out connections and a more specific understanding of how they could be made.

Despite this development, the final interview was also characterized by an uncritical belief in the transfer of knowledge as Gina revealed:

Yeah, I think that that is a good way to kind of divide it up, that there's like explicit knowledge versus more like actual skills, being able to do something. And I think that, again, those skills are hopefully something that can be kind of transferred across just their everyday lives. Something that I really tried to focus on in my class is critical thinking and not just taking something at face value and assuming oh well this must be correct because whatever reason, not like looking further into it. And that's something that's definitely not applicable to science. Even something as simple as like reading the news it's become, I feel like, so much more difficult. It's harder to discern what is truth and what is not, because there's so many, there's just so much misinformation out there.

Life-in connections

We did not see a similar development in the residents' understanding of life-in connections as we only saw two residents make meaningful life-in connections. The residents who claimed to draw on life-in connections recognized the value of drawing on students' interest as a motivator. Leanne explained:

I'm like, curating it to their likes and you know wants and like what they want to learn and like really seeing themselves in it like we had a fun time honestly brainstorming for a wild card because some students are like I'm not interested in any of it, and I'm like, I literally was like, tell me what you like. And they were like, I like to cook. And I'm like, perfect. You know, nuclear and irradiating food like in agriculture.

Here Leanne seemed to view identifying and making connections to students' pre-existing interests as central to a teacher's responsibilities. However, she did not explore how students' pre-existing knowledge or skills can be used as instructional resources.

Instead of recognizing and building on individual or cultural resources, the residents tended to make instructional moves to mitigate what they perceive as a lack of resources. Mercedes, who was preparing to teach Spanish, for example, critiqued drawing on the expectation of previous or future travel as a real-world connection:

But say you are not traveling right now. You know, it's kind of like a disconnect like not necessarily applicable to what you are, what you are actually doing, if that makes sense. So kids that aren't traveling might be like "If I'm never going to go to Spanish speaking country, why do I have to learn Spanish?" But I want them to be able to get more out of the class, you know, to see the utility in language in general and then value Spanish and value what we are doing.

To foster this implicit valuing of learning Spanish, separate from assumptions of future travel, Mercedes talked about elaborate plans to embed the study of Spanish into her future classes' work on developing a community garden or recycling project.

In short, our analysis suggests that as residents moved through their residency, they tended to increasingly recognize the importance of making lesson-out connections, not only as a motivator (Category 1), but also as a way to demonstrate the value of the content knowledge they were teaching (Category 5). They also tended to articulate a belief that their teaching would unproblematically transfer to students' everyday lives. They saw life-in connections as a crucially important source of motivation but did not seem to recognize the extent to which their students' individual or cultural knowledge could be an instructional resource they could build upon in their teaching.

To close the discussion of pillars, we noted a pair of conspicuously missing ideas. This study took place during an academic year in which all represented schools began with remote schooling, with some transitioning to a hybrid model during the year. While the participants made multiple claims about the differences between in-person and online instruction, relatively little was said about the Covid-19 pandemic and its impact on students, their families, and their communities. We found this striking given the focus on relational teaching and the desire the participants expressed for getting to know their students as people. While not explicit, we recall that April created

purposeful check-ins with students, to "make sure they are good so if anyone's not doing okay… we have a talk if that's needed." We hypothesized several reasons that the participants did not make Covid-19 an explicit part of the conversation, such as that by that point in the pandemic, it was assumed. Similarly, the interview protocol also did not address Covid-19 and its impacts on students or the participants, and thus we may not have created this opening.

The other idea we found conspicuously missing was the specific context of the participants' teaching. Their schools were located in an urban setting in which the majority of students were non-White (with variation by school placement in terms of the majority or plurality race and ethnicity). Given that many of the participants were White and from a suburban background, the lack of claims about difference with their students in terms of background, life experience, and schooling is at the least curious, especially in light of the strong focus on the development, and sometimes leveraging, of interpersonal relationships with students. This may also be a feature of the data that results from the interview structure—during the first interview, we explicitly asked participants to consider how the practices of a prior, influential teacher would transfer across contexts. This may have led them to think about pillars as practices that are robust enough in terms of their efficacy to be 'good teaching' regardless of context. Clearly, this merits further exploration.

Influences

In addition to coding for the residents' pillars of practice, we were also interested in ascertaining the influences that grounded those pillars. We identified the source of influence of the residents' pillars in more than half of the content units we coded (Table 4). Understandably, the influences that residents claimed for their beliefs and actions changed across the four interviews.

The frequency counts in the columns enumerate the subset of code applications of each type within each interview (e.g., 38 of the 205 Influence code applications in the first interview were specifically related to the residents' [University] coursework). We could have expected the residents' frequent mention of their [University] coursework as an influence because, at the time of Interview I, they had already completed two classes, one of which was about classroom management, while they had done very little teaching. Interview II typically occurred in late December or early January after a semester of classroom teaching for residents, which explains their increased rate of influence from mentorship. Seeing the increased rate of influence

due to school curriculum and knowledge and beliefs about students in Interview III, we noted that, in this interview, residents were asked to provide and describe a lesson that they had recently taught that illustrated important aspects of their practice. Thus, we conclude that this line of inquiry had a significant effect on the influences that the residents described. From Interview IV, which was conducted at the end of the residents' year-long teaching residency, we noted the high rate of influence attributed to teaching experience during residency. Across the four interviews, we noted that residents cited their [University] coursework, mentorship, and their residency's school curriculum most frequently as sources of influence.

Our analysis suggested a developmental trajectory for the source of influence: We found that the residents moved from displaying relatively unquestioning acquiescence to sources of authority—their mentors and their coursework as evidence by their much more frequent mention—to exhibiting thoughtful control of the knowledge they employed in explaining their methods and goals. This trajectory was marked by an increasing assertion of their teacherly identities as evidenced by their drawing increasingly on their teaching experiences and the knowledge they gained from those experiences, and their claims regarding what they learned from their coursework as tools for reflection rather than dictates to be followed.

Reagan provided a case in point. During her first interview, she explained one of her pillars this way:

> High expectations, that was something that we talked about a lot during summer institute and over the summer is holding those high expectations for students. I think in the classroom management course we talked a lot about the expectations that we set for kids and how we communicate them. And that's something that I think we are trying to do better in my mentor teacher's classroom is like clearly saying those expectations and holding kids to them like regarding due dates and their performance on assignments. Like holding them up to the expectations that we have. So, we definitely talked about it a lot in our classes and it's something that we are actively trying to improve on in our classroom.

We interpreted Reagan's claims as indicating that her practice of providing explicit expectations and positive reinforcement was taken directly from her summer course. Reagan said, "We definitely talked about it a lot in the [university] classes and it's something that we are actively trying to improve." We interpreted this to mean that Reagan was uncritically attempting to carry out the practices described and

TABLE 4 Frequency of sources of influence.

Influence	Interview I n = 205	Interview II n = 111	Interview III n = 157	Interview IV n = 129	Total n = 602
[University] coursework	38 (18.5%)	27 (24.3%)	22 (14.0%)	26 (20.2%)	113 (18.8%)
Mentorship	25 (12.2%)	18 (16.2%)	13 (8.3%)	19 (14.7%)	75 (12.5%)
School curriculum	0 (0.0%)	2 (1.8%)	55 (35.0%)	10 (7.8%)	67 (11.1%)
Knowledge and beliefs about students	1 (0.5%)	4 (3.6%)	24 (15.3%)	9 (7.0%)	38 (6.3%)
Teaching experience during residency	7 (3.4%)	13 (11.7%)	2 (1.3%)	20 (15.5%)	42 (7.0%)

promoted in her coursework. In contrast, in Interview IV, Reagan claimed:

> There was actually a TR workshop. There was a principal that one of his major points was giving students choice in how they demonstrate their understanding and I had been playing around with some different, with some innovative assessments—with some things that were not cookie cutter. But just allowing them to choose, like trusting them, trusting that students know how to demonstrate their knowledge and know how to demonstrate to show you the best ways for them. So that was something that he said that really stuck with me. And I think I tried to play around with a little bit more give them a little bit more flexibility toward the end of the year and it turned out extremely well. I was so impressed by what they came up with that like it was a no brainer to include that going forward.

Here we interpreted Reagan as claiming control of the ideas and practices that she was taking in as messages and how they were enacted in her classroom. In particular, she twice used the phrase "I had been playing around" to describe her attempts to enact a version of this practice. We interpreted this phrase to mean that she was changing the ways that she was enacting the practice of giving students a choice while staying true to the goals. In doing so, we suggested that she took authority of the form of her practice. Moreover, we noted the contrast with the first interview where Reagan was using "we" to describe the activities and practices in the classroom and then her use of "I" to describe activities and practices in Interview IV. We suggested that this linguistic change indicated increased ownership of the classroom, breaking away from her mentor's practice.

C.O. showed similar patterns across interviews. In Interview I, she was explicit about learning from her mentor, saying, "I think I've been learning a lot from my mentor…. And I've been seeing more what works for her" and then described specific techniques that she was learning. In Interview II, C.O. used "our" and "we" to describe the courses and classroom:

> Our attendance has been pretty well in our classes. While we have three different types of classes we have sheltered so the English language learners. Those class, they have poor attendance in there, but those that do come are consistent. So, the ones, the students that do not come, they just have not really been here since the beginning of the year. We have two block periods. So those meet our meeting for like 70 min every other day.

Similarly, during Interview III, C.O. described classroom goals and practices as collaborative between her and her mentor, saying:

> I think what we try to do, and when I say we, I mean, my mentor and I, is we try to introduce new topics, with some sort of real world connection. Or if it's not, if it's not a real world example, it might be like, real world analogy.

That is, during both Interviews II and III, C.O. appeared to share ownership of the classroom and processes with her mentor, both via her use of we/our and the way that she described practices as shared. In contrast, during Interview IV, she had control over her classroom practice and was willing and able to adapt both what she learned in

her [university] classes and from outside resources. We present a lengthy excerpt to illustrate the complexity of her claims and ownership:

> C.O.: I think in my teaching this year, I kind of strayed away from how I was taught.…. I feel like I tried to teach chemistry this year as kind of a more guided inquiry style. And I feel like that kind of changed me. I feel like that kind of made chemistry become instead of rote memorization, it kind of became a process. And with that process, I think students could learn how to kind of use the same thinking style but to approach different problems in different areas with the sort of process.
>
> Interviewer: One of the things we know from teacher education research, is that the dominant influence on the way teachers typically teach is the way that they were taught. But you made a break. How were you able to do that?
>
> C.O.: I think it was just my…coursework that obviously showed the research behind why, why you should not teach that way but also like encouraged us to use different models than how I was taught. Like using the 5E model and also took the project-based instruction course. So, I think in my classes where I had to develop lesson plans, they had to be a certain way. So, I had to stray away from how I was taught. And then also my mentor was very opposed to using direct instruction unless it was like absolutely necessary, like in the more math heavy part of chemistry. So, I think it was the influence of my education courses and my mentor kind of made me realize there's a different way of doing things.
>
> Interviewer: It sounds as though from what you just said that there was that you saw compatibility between your coursework, the non-[university] resources that you drew on, and your mentor. Is that, is that true? Were there, did you see them as being in support of each other or, in contrast to each other?
>
> C.O.: I think I would say they were in support of each other. A lot of the times I did not like using the 5E model because I felt like it was kind of strict. But it definitely provides like a good framework for how to set up the lesson.

C.O. first claimed "this year I kind of strayed away from how I was taught," explaining that she tried to teach via guided inquiry and that this changed what it meant her students might learn about chemistry. She claimed that the way she was taught promoted memorization, while her new pedagogical practice meant that students "learn how to kind of use the same thinking style but to approach different problems in different areas with the sort of process." When asked why she made this break with how she learned, C.O. specifically named her coursework which "obviously showed the research behind why, why you should not teach that way" and provided models and techniques, like the 5E lesson plan, that supported a guided-inquiry approach. In addition, C.O. noted that "my mentor was very opposed to using direct instruction." That is, her [university] courses and her classroom experience "were in support of each other." At the same time, we noted that C.O. specifically claimed that "A lot of the times I did not like using the 5E model because I felt like it was kind of strict. But it definitely provides like a good framework for how to set up the lesson." This was a complex claim, but we interpreted her as saying that the tool was a useful means of thinking about classroom structure, but she had grown beyond strictly following the structure and had sufficient

control over her planning and practice to enact a version of the model that she had modified.

In short, the frequency counts in Table 4 suggest and the cases of Reagan and C.O. illustrate, residents tended to begin the residency relying on the authority of their coursework and mentors to develop sufficient control over their practice—taking and adapting the ideas and practices from both their coursework and mentors and making them their own. However, as they gained more in-classroom experience through their residency, the residents claimed increasing authority over their practice.

Discussion

Our year-long investigation of the beliefs of the residents bears out Pajares' (1992) claim and responds to Fives et al.' (2015) call for nuance as it helped us develop a refined understanding of two of the major elements of teacher beliefs and goals, as well as understand the influences that affected our residents' movement toward those goals.

Prior research suggests that before student teaching, preservice teachers have an idealistic image of a teacher that focuses on caring and listening, but is not well-thought out (Levin, 2014; Perry et al., 1992). They focus on the individual relationships with students, but not actions that support their development. Levin (2014) also argued that elements of teacher beliefs and their sources change over time. We saw similar trajectories in terms of the residents' focus on relationships and the reasons that they provide for their beliefs. First, our residents began their programs with a belief in the importance of making real-world connections and of relational teaching, which is consistent with a student-centered approach. However, their understanding of how to enact their goals tended to be quite superficial. To the residents, interpersonal relationships, initially, meant making themselves available to their students. Making real-world connections meant little more than setting making surface references to their city or asserting that the lesson would be useful outside of school. Through the course of the program, they tended to develop a more sophisticated understanding of what relational teaching entails, moving from seeing it simply as teachers making themselves available to their students to seeing it as teachers learning what students know so that they can make use of their knowledge during lessons. They also tended to develop a belief in the importance of making lesson-out connections not only as a motivator, but also as a way to demonstrate the value of the content they were trying to teach. They also began to see life-in connections as a crucially important source of motivation but did not seem to recognize the extent to which their students' individual or cultural knowledge could be an instructional resource they could build upon in their teaching.

Second, contrary to the conventional narrative of how teacher residency programs change residents' initial orientations, we found that the program appeared to help residents refine their initial orientations, rather than challenge them. This helped us to better understand the developmental trajectory of the beliefs the program hoped to inculcate. The section of the College's website directed to mentor teachers makes this claim:

> The mentor teacher plays a critical role as the student teacher's model and mentor and has great influence over the student teacher's learning experience. Student teachers tend to adopt the practices of their mentor teachers, sometimes without question, assuming that they have no choice.

In early interviews, the critical role of mentor teachers was manifest. Mentor teachers were the most cited influence when residents explained a lesson plan that epitomized their practice, and the interviews were marked with explanations of "what *we* did." Generally, this aligns with prior research on influences on preservice teachers' beliefs, that coursework and the mentor teacher are the primary contributors, thus underscoring the importance of mentorship in teacher preparation. In contrast, in Interviews III and IV, residents displayed more agency, explaining "what *I* did," rather than "what *we* did." This linguistic shift highlights the ownership participants' felt empowered to claim following their increased teaching experience along with senior teachers' mentorship. In these later interviews, residents drew increasingly on their teaching experiences and the knowledge they gained from those experiences. Furthermore, the residents made claims regarding what they learned from their coursework as tools for reflection rather than dictates to be followed. That is, by the second half of their residency experience, the participants were making claims about the sources of their beliefs and practices (i.e., experience) that were more aligned with what prior research has reported about veteran teachers (Hong, 2010; Perry et al., 1992). In short, the residency experience appears to have fostered the development of the residents' beliefs to bring them more in line with those of more experienced teachers. The student teachers developed more nuanced ways of thinking about relational teaching and real-world connections than is typical and moved more quickly to rely on their own expertise to justify their thinking. More research is needed to explore how to apportion the reasons for this accelerated developmental trajectory between various aspects of the program design as one possible means to further impact and accelerate teacher training.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Author contributions

KB: Formal analysis, Writing – original draft, Writing – review & editing. MW: Formal analysis, Writing – original draft, Writing – review & editing. TF-C: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Supervision, Writing – original draft, Writing – review & editing. MS: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Supervision, Writing – original draft, Writing – review & editing. CC: Data curation, Investigation, Writing – original draft, Writing – review & editing. SK: Data curation, Investigation, Writing – original draft, Writing – review & editing. EW: Data curation, Investigation, Writing – original draft, Writing – review & editing.

Funding

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

The author(s) declare that no Generative AI was used in the creation of this manuscript.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

References

Benavides, D. M. D. (2013). The way student-teachers construct their identity at school. *HOW* 20, 36–50.

Braun, V., and Clarke, V. (2006). Using thematic analysis in psychology. *Qual. Res. Psychol.* 3, 77–101. doi: 10.1191/1478088706qp063oa

Chant, R. H., Heafner, T. L., and Bennett, K. R. (2004). Connecting personal theorizing and action research to preservice teacher development. *Teach. Educ. Q.* 31, 25–42.

Charmaz, K., and Belgrave, L. L. (2012). "Qualitative interviewing and grounded theory analysis" in The SAGE handbook of interview research: The complexity of the craft. eds. J. F. Gubrium, J. A. Holstein, A. B. Marvasti and K. D. McKinney. *2nd Edn* (Thousand Oaks: SAGE Publications), 347–365.

Clark, C. M., and Peterson, P. L. (1986). "Teachers' thought processes" in Handbook of research on teaching. ed. M. C. Wittrock. *3rd* ed (New York: Macmillan), 255–296.

Fives, H., and Buehl, M. M. (2008). What do teachers believe? Developing a framework for examining beliefs about teachers' knowledge and ability. *Contemp. Educ. Psychol.* 33, 134–176. doi: 10.1016/j.cedpsych.2008.01.001

Fives, H., Lacatena, N., and Gerard, L. (2015). "Teachers' beliefs about teaching (and learning)" in The international handbook of research on teachers' beliefs. eds. H. Fives and M. Gill (New York: Routledge), 249–265.

Guest, G., Bunce, A., and Johnson, L. (2006). How many interviews are enough? *Field Methods* 18, 59–82. doi: 10.1177/1525822x05279903

Hong, J. Y. (2010). Pre-service and beginning teachers' professional identity and its relation to dropping out of the profession. *Teach. Teach. Educ.* 26, 1530–1543. doi: 10.1016/j.tate.2010.06.003

Kagan, D. M. (1992). Professional growth among preservice and beginning teachers. *Rev. Educ. Res.* 62, 129–169. doi: 10.3102/00346543062002129

Korthagen, F. A. J. (2004). In search of the essence of a good teacher: towards a more holistic approach in teacher education. *Teach. Teach. Educ.* 20, 77–97. doi: 10.1016/j.tate.2003.10.002

Levin, B. B. (2014). "The development of teachers' beliefs" in International handbook of research on teachers' beliefs. eds. H. Fives and M. G. Gill (New York: Routledge), 48–65.

Levin, B. B., and He, Y. (2008). Investigating the content and sources of preservice teachers' personal practical theories (PPTs). *J. Teach. Educ.* 59, 55–68. doi: 10.1177/0022487107310749

Levin, B. B., He, Y., and Alen, M. H. (2010). What do they believe now? A cross-sectional longitudinal follow-up study of teachers' beliefs in action. Paper presented at the annual meeting of the American Educational Research Association, Denver, CO, April 2010.

Levin, B. B., He, Y., and Allen, M. H. (2013). Teacher beliefs in action: a cross-sectional, longitudinal follow-up study of Teachers' personal practical theories. *Teach. Educ.* 48, 201–217. doi: 10.1080/08878730.2013.796029

Luft, J. A., and Roehrig, G. H. (2007). Capturing science teachers' epistemological beliefs: the development of the teacher beliefs interview. *Electron. J. Sci. Educ.* 11, 38–63.

Macías Villegas, D. F., Hernández Varona, W., and Gutiérrez Sánchez, A. (2020). Student teachers' identity construction: a socially-constructed narrative in a second language teacher education program. *Teach. Teach. Educ.* 91, 103055–103010. doi: 10.1016/j.tate.2020.103055

Miles, M. B., Huberman, A. M., and Saldaña, J. (2013). Qualitative data analysis: A methods sourcebook. *3rd Edn.* Los Angeles: Sage Publications.

Mockler, N. (2011). Beyond "what works": understanding teacher identity as a practical and political tool. *Teach. Teach.* 17, 517–528. doi: 10.1080/13540602.2011.602059

Morgan, D. L. (2014). Pragmatism as a paradigm for social research. *Qual. Inq.* 20, 1045–1053. doi: 10.1177/1077800413513733

Pajares, M. F. (1992). Teachers' beliefs and educational research: cleaning up a messy construct. *Rev. Educ. Res.* 62, 307–332. doi: 10.3102/00346543062003307

Perry, C. M., Perry, C. M., and Rog, J. A. (1992). Preservice and inservice teachers' beliefs about effective teaching and the sources of those beliefs. *Teach. Educ. Q.* 19, 49–59.

Samaca Bohorquez, Y. (2012). On rethinking our classrooms: a critical pedagogy view. *HOW* 19, 194–208.

van Lankveld, T., Schoonenboom, J., Volman, M., Croiset, G., and Beishuizen, J. (2017). Developing a teacher identity in the university context: a systematic review of the literature. *High. Educ. Res. Dev.* 36, 325–342. doi: 10.1080/07294360.2016.1208154

Veugelers, W., and Vedder, P. (2003). Values in teaching. *Teach. Teach.* 9, 377–389. doi: 10.1080/1354060032000097262

Zembylas, M., and Chubbuck, S. M. (2015). "The intersection of identity, beliefs, and politics in conceptualizing "teacher identity"" in International handbook of research on teachers' beliefs. eds. H. Fives and M. G. Gill (New York: Routledge), 173–190.