

AUTHORING PROFESSIONAL IDENTITY: PRE-SERVICE TEACHERS AND WAYS OF KNOWING

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ABSTRACT. Education programs increasingly emphasize the development of strong core beliefs and values to support professional judgment for pre-service teacher practice. The ability to critically integrate multiple perspectives is an expected foundation for the pedagogical decisions and professional responsibilities pre-service teachers carry out. This article details research undertaken to investigate pre-service teachers' ways of knowing as they progress through a Bachelor of Education program. Findings from semi-structured interviews are discussed in terms of supporting pre-service teacher intellectual development in teacher education programs so that a professional teacher identity is encouraged.

ÊTRE AUTEUR DE SON IDENTITÉ PROFESSIONNELLE : LES ENSEIGNANTS EN FORMATION INITIALE ET LES MODES DE CONNAISSANCE

RÉSUMÉ. Les programmes d'éducation accordent de plus en plus d'importance au développement de valeurs solides pour soutenir le jugement professionnel dans la pratique des enseignants en formation initiale (préservice). La capacité d'intégrer de manière critique plusieurs perspectives est considérée comme une fondation attendue pour les décisions pédagogiques et les responsabilités professionnelles assumées par les enseignants préservice. Cet article détaille une recherche menée afin d'examiner les modes de connaissance des enseignants préservice au fur et à mesure de leur progression dans un programme de baccalauréat en éducation. Les résultats des entrevues semi-structurées sont discutés en matière de soutien au développement intellectuel des enseignants préservice dans les programmes de formation des enseignants, de manière à favoriser l'émergence d'une identité professionnelle enseignante.

Teachers engage in practice not just with their knowledge of content, but also with their being: who they are, how they see themselves as teachers, how they relate to others, and how they identify themselves within the profession. Developing a teacher identity is central to the practices, competencies, and dispositions that teachers bring to their classroom (Walkington, 2005). Much has been written

about the importance of cultivating beliefs and values in shaping teacher identity (Britzman, 2003; Clandinin, 2019; Clandinin et al., 2009). Research has further suggested that identity actually helps to shape pre-service teachers' instructional practice in the classroom and professional knowledge development (Beijaard et al., 2004; Connelly & Clandinin, 1999). Winslade (2002) usefully describes teacher identity as the fostering of *self-descriptions* within the social and cultural norms of a particular context, while Flores and Day (2006) note the complex negotiation between self and context in developing and sustaining teacher identity.

Most teacher education programs are organized to encourage and support pre-service teachers' understanding of the profession through engagement in coursework on campus and practicum experiences in classroom settings. Pre-service teachers are thus afforded an opportunity to develop their beliefs and knowledge about the roles and responsibilities of educators, from both theoretical and practical perspectives, as well as to make connections among the two. Nieto (2003) affirms that teacher identity is deeply woven into teacher practice, thus justifying its presence in a program of study. Yet often this focus (on teacher identity) is precisely what is missing, as the push to develop pre-service teachers' competencies in curricula, discipline specializations, and pedagogical strategies take precedence. In Canada, little research has been carried out on pre-service teachers' ways of knowing and how pre-service teachers' epistemological beliefs and developing values are shaped by participation in teacher education programs. This paper aims to contribute to addressing that gap in the literature.

Social constructivist theories in teaching support pedagogical approaches that reflect deep understanding and higher order thinking (Windschitl, 2002). While "it is important that pre-service teachers have an understanding of constructivist teaching practices" (Walker et al., 2012, p. 24), it is also essential that their beliefs support these pedagogical approaches and strategies. Understanding pre-service teachers' personal epistemology through the lens of self-descriptions (Winslade, 2002), drawing on the work of Baxter Magolda, is the focus of this article.

The purpose of the research on which this article is based was to investigate the emerging teacher identity of pre-service teachers as they progressed through their program of study and practicum experiences during their first year in a 2-year after-degree program. It explores what pre-service teachers came to know about their own learning and their prevalent patterns of intellectual development – in other words, their *ways of knowing* (Baxter Magolda, 1992).

THEORETICAL FRAMEWORK

Ways of knowing and epistemological beliefs

Research has shown students (pre-service teachers are first and foremost students) vary in the beliefs that they hold about knowledge and that their epistemological beliefs affect the ways in which they learn and make judgements (Baxter Magolda,

1992; Belenky et al., 1986; Perry, 1970). Proponents of an epistemological development paradigm see personal epistemologies as developing over time (Belenky et al., 1986; Perry, 1970). Pintrich (as cited in Walker et al., 2012) has explained that “individuals move from a simple to a complex evidence-based way of knowing, commonly referred to in the literature as naïve to sophisticated beliefs” (p. 25). An understanding of student development theory can assist teacher educators in addressing student needs and facilitating worthwhile and engaging learning environments; such an understanding “is at the heart of effective educational practice” (Baxter Magolda, 1992, p. 1).

I bring renewed attention to Baxter Magolda’s work because I believe her insights into ways of knowing can offer a valuable framework for understanding pre-service teachers’ knowledge about their own learning and their emerging teacher identity. Baxter Magolda’s (1992) investigation into student intellectual development built upon and synthesized the earlier work of Perry and Belenky et al. Perry (1970) located variations in beliefs in stages of development, while Belenky et al. (1986) focused on ways of knowing, and especially women’s ways of knowing. Baxter Magolda’s study was based on a longitudinal investigation of men and women as they progressed through an undergraduate degree program. She tracked their personal epistemological beliefs as patterns in ways of knowing.

Baxter Magolda (1992) emphasized the social constructivist nature of researching ways of knowing. She explained that students’ ways of seeing the world encounter those held by their professors and their peers: “The meaning that students make of these experiences depends partially on their original view of the world, partially on the other views they encounter, and partially on the context in which the experience takes place” (Baxter Magolda, 1992, p. 20). Baxter Magolda (1992, 2007) further proposed that individuals’ perspectives of the world are entwined with how they view themselves. Applying these concepts, pre-service teachers’ sense of identity and their knowledge about teaching are shaped by “arrays of social positioning, experiences, and resources to enact their professional selves in particular ways” (Sexton, 2008, p. 75). Baxter Magolda (1992) suggested that the learner’s ability to reflect on their beliefs and to arrive at their own conclusions are essential to developing a strong sense of self.

Baxter Magolda identified four ways of knowing, each with a core set of assumptions about knowledge, with all four being epistemic assumptions. The four ways of knowing are: *absolute knowing*, *transitional knowing*, *independent knowing*, and *contextual knowing* (Baxter Magolda, 1992).

A brief description of the four patterns follows.

Absolute knowing

Baxter Magolda described absolute knowing as knowledge that is certain and unchanging. Students tend to believe that instructors have all the answers and that they acquire knowledge from them. Students believe peers do not possess

any knowledge other than that obtained from the instructor. Students regard the role of evaluation as a process by which they demonstrate their understanding of content to the instructor.

Transitional knowing

Transitional knowing is characterized as understanding that some knowledge is certain and some uncertain. Students recognize discrepancies among experts in uncertain areas of knowledge. A voice of authority can be questioned. Students may consider their perspectives to be as valid as those of their instructors. Peers are perceived as helpful, and the exchange of ideas is valued. A student's investment in learning is dependent on personal perceptions of how useful it will be in their future.

Independent knowing

Independent knowing is defined by uncertainty and openness. Students have their own beliefs and think content through for themselves. The role of instructors is to be supportive of individual perspectives and to encourage independent thinking. Students see their peers as important sources of knowledge.

Contextual knowing

Contextual knowing requires students to make judgments based on evidence in a particular situation. Instructors promote applying new knowledge. There is an emphasis on discussion of perspectives, thinking problems through, and integrating multiple perspectives. Students genuinely value and critically reflect on points of view shared by peers.

Ways of knowing and identity

For the purposes of the present study, *teacher identity* was defined as an ongoing construction emerging through pre-service teachers' interpretation and reinterpretation of their experiences within a professional community of practice. The understanding that pre-service teachers have of how they learn, their learning experiences with others (peers and instructors), learning in the practicum environment, and their emerging beliefs about teaching are viewed through the lens of their epistemological beliefs as framed within patterns of intellectual development – patterns aligned with those theorized by Baxter Magolda.

METHODOLOGY

The present study was framed within an interpretive, social constructivist approach. Constructivists believe that “knowledge and truth are created, not discovered by mind” (Schwandt, 1998, p. 236), thus allowing for a pluralistic and malleable reality. The emphasis is on individuals' ongoing, collective generation of meaning as shaped by a particular context.

Research context and questions

The study was carried out within a teacher education program at a large research institution. The Bachelor of Education (BEd) program stresses subject matter knowledge, pedagogical skills, and the development of good judgment in practice. Students may enter a 2-year after-degree program or a 5-year concurrent program. The pre-service teachers in this study were enrolled in the 2-year after-degree program which offered a total of 20 weeks of practicum experiences incrementally increased from the first to the second year.

In most teacher education programs, theory and practice are viewed as tightly interwoven so that students will come to understand that both live in classroom settings. Pre-service teachers nevertheless view learning skills during their practicum as far more important than applying theory; the practicum entails direct contact with classroom management and their own teaching performance (Bainbridge, 2011). This remained an ongoing tension for pre-service teachers as they moved through the program.

Two research questions guided the present study:

1. How might aspects of on-campus and practicum experiences shape a strong pre-service teacher identity?
2. What beliefs do pre-service teachers have about the teaching profession?

Pre-service teachers participated in four cohort-based practicum experiences, each of which was organized as a course with specific outcomes, reflective writing assignments, and formative and summative assessments. Pre-service teachers were further supported by a practicum curriculum, mentoring by a partner teacher, and support from the university instructors. Of a purposeful variation sample of 19 elementary and secondary pre-service teachers, seven pre-service teachers (five women and two men) agreed to participate. The participants were placed in elementary school, junior high school, and senior high school classrooms. They reflected on their understandings of their course work and practicum experiences at the conclusion of their first year in a BEd after-degree program (by which time they had completed their second practicum experience). Each participant was assigned a pseudonym and are referred to as such in this article.

Data collection

The qualitative research involved semi-structured interviews with pre-service teachers, gathered at the end of the first year of their program. Interview questions were adapted from Baxter Magolda's (1992) questionnaire protocol. Individual interviews lasted approximately 1 hour and 30 minutes and resulted in 166 pages of transcripts. To ensure accuracy, the transcribed interviews were sent to participants for member checking (Denzin & Lincoln, 2005). An iterative and thematic analysis of the transcripts followed.

Baxter-Magolda's research on the development of intellectual thinking provided the patterns for interpreting participant responses. In her study, Baxter Magolda (1992) identified one of four predominant patterns (a way of knowing) for each student in each of five knowledge domains. Those five domains were: role of the learner, role of peers in learning, role of the instructor in learning, evaluation, and the nature of knowledge. She then identified an overall pattern of ways of knowing for the student based on an average of the domain ratings. Because her study included a large number of participants (101 undergraduate students), she was also able to establish patterns across the group. In the present study, with a much smaller number of participants (seven), I focused on locating the pre-service teachers' understandings of their experiences within Baxter Magolda's four ways of knowing across five domains, accommodated to the context of a teacher education program. These five accommodated domains were: the role of the self as learner, the role of peers in learning, the role of instructors in learning, the role of practicum experiences in learning, and beliefs about teaching. Within each of these domains, I identified a predominant way of knowing for each student.

A participant profile was initially created for each pre-service teacher, which provided a context for ascribing meaning to their comments. The analysis then focused on their experiences by grouping and comparing their quotes. A brief background of each of the pre-service teachers in this study first provides a context for a deeper understanding of their individual comments.

Pre-service teachers and school contexts

The first participant, "Amy," enrolled in the BEd program directly after completing a degree in psychology. She was placed in an elementary classroom setting during her second practicum. "Anne," the second participant, took some business courses and then enrolled in an undergraduate degree in humanities. After completing her degree, Anne worked briefly before applying to the BEd program. She was also placed in an elementary classroom. "Emily" received an undergraduate degree in kinesiology, playing volleyball on several university teams. She worked several years before enrolling in the Bachelor of Education program. Emily was placed in a junior high school classroom. "Evan" had an undergraduate degree in history and was placed in a junior high school classroom with a teacher who mainly taught humanities. "Luke" completed a degree in political science and environmental science. He was in the army reserve and then travelled before enrolling in the BEd program. He was placed in a senior high school classroom. "Nathan" began university studying science but re-discovered a passion for music and graduated with a music degree before entering the BEd program. He was placed in a junior high school setting with a teacher in the music department. The seventh participant, "Nora," moved directly to the BEd program after her first degree in physical education. She was placed with a junior high school teacher during her second practicum.

FINDINGS AND INTERPRETATIONS

Pre-service teachers' ways of knowing

Pre-service teachers' ways of knowing were identified within five domains: role as a learner, role of peers in learning, role of instructors in learning, role of practicum experiences, and beliefs about teaching. If a particular domain was not allocated any of the ways of knowing, then there was a lack of data to support an allocation (i.e., the pattern was found to not be evident in the pre-service teachers' comments). Table 1 summarizes the allocation of ways of knowing within each domain for each of the pre-service teachers.

TABLE 1. *Pre-service teacher ways of knowing within each domain*

Student	Domain				
	Role of self as learner	Role of peers	Role of instructor	Practicum experiences	Beliefs about teaching
Amy	A	T	I	I	I
Anne	I	T	C	C	C
Emily	C	I	-	C	C
Evan	I	T	I	I	I
Luke	C	T	C	C	C
Nathan	I	I	I	C	C
Nora	A/T	A	A/T	T	T

NOTE. Ways of knowing: A = Absolute, T = Transitional, I = Independent, C = Contextual

Pre-service teachers' epistemological beliefs were not always consistent across the five domains, reflecting the fluid nature of movement from one way of knowing to another. Individually, these pre-service teachers did not regard all aspects of their learning, nor the role of those who supported them in their learning, in the same way of knowing. This finding echoes Schommer's (1994) and Lucas and Tan's (2013) conclusions that epistemological beliefs are multidimensional and may develop unevenly over time. The movement between ways of knowing illuminates the intellectual development of pre-service teachers as they progress through a teacher education program.

Research has provided some evidence that personal epistemologies influence both learning and teaching in pre-service teachers. For example, Naylor et al. (2015) found that as "pre-service teachers learnt to teach and were learners themselves, they saw metacognitive similarities between their learning styles and their teaching styles" (p. 130). Similarly, Walker et al.'s (2012) research pointed to a link between pre-service teachers' personal epistemologies and their comfort with accommodating multiple perspectives. Pre-service teachers who hold more

sophisticated, or more complex, evidence-based personal epistemologies are likely to have meaningful approaches to their own learning and to have teaching practices which engage students in meaningful learning (Walker et al., 2012). Additionally, pre-service teachers' views about what comprises effective teaching in literacy was found to be linked to their personal epistemologies by Yadav and Koehler (as cited in Walker et al., 2012, p. 26). This evidence suggests that teacher educators who wish to promote deep and complex approaches to learning could determine pre-service teachers' epistemological beliefs early in the program.

In the following section, themes that emerged from the data analysis are discussed: the variation of perceptions of the role of self and others in learning as well as the participants' sophisticated beliefs about teaching.

Theme: Variation of the perceptions of roles of self and others in learning

Pre-service teachers exhibited a range of understandings in terms of the roles that self, peers, and instructors had in their learning (Baxter Magolda's knowledge domains); pre-service teachers indicated they did not regard the role they played, nor the role that others played, in their own learning in terms of consistent ways of knowing. Such a finding can also be supported by the research of Palmer and Marra (2004), who tentatively concluded that student epistemologies may not be consistent across knowledge domains. Six of the seven pre-service teachers in the present study expressed perspectives that fell within a variety of ways of knowing for three of the relevant domains: role of self as learner, role of peers, and role of instructor. For example, Amy believed her learning was a straightforward transaction. In her classes, she focused on obtaining the requisite information:

I learn best when I'm engaged and I can follow you and you've got my attention. Yes, I'm a big note taker, I'm a big hard copy person and I'm a highlighter ... I go home and I type the notes, because for me that's how – you know, I can't fully give my attention in class because sometimes I'm jotting down notes and I'm trying to listen.

Amy emphasized obtaining and identifying important information and recording it in class, reflecting an absolute way of knowing. However, she used her notes to later help her recall important points, as she saw herself as needing to understand, not just acquire, the information, thus drawing on a way of knowing that was more transitional. Her approach to learning relied on her instructors as sources for new knowledge. When asked about the role of her peers in her learning, Amy acknowledged the helpful role they played:

You can bounce ideas off one another and ask did you watch this, or what do you think of this or and I really like being able to bounce things off people and know that you are going through the same things.

This comment represents a transitional view. Amy appreciated the active exchange of ideas; she believed that she understood material better after hearing her classmates' perspectives.

Similarly, Nora demonstrated a blend of absolute and transitional ways of knowing in describing the role played by herself and others in her learning:

I think I learn through watching and then doing myself; I think I probably learned more in my first practicum than I learned ... in the two years of the program. My partner teacher had enough faith in me that he just let me go ... he let me try and if something failed, we would talk about it after.

Nora's preference for watching her partner teacher teach, and then teaching herself, suggested a gradual assuming of responsibility for classroom learning experiences. A conversation reflecting on her teaching took place with her partner teacher only if something did not go according to her plan. Nora added, "Some things worked that I didn't think would work and so the opportunity to try was really important." These comments represented the transitional way of knowing, one in which students focused on acquiring and then understanding and applying knowledge. Although taking a somewhat active role in applying what she has learned from her partner teacher, Nora remained reliant on the authority of her partner teacher in framing her teaching practice.

In commenting on how she viewed the role of her classmates in her learning, Nora displayed an absolute way of knowing as she appeared to consider her classmates as peers, but not as sources of learning or support for developing a deeper understanding of topics:

I think they did [contribute to my learning] a little bit but I wouldn't say a lot. ... The classes were so big ... It wasn't really until I was in my specialization that I started to feel like I was really connecting with people. ... But I wouldn't say that they really contributed greatly to my overall learning experience.

Nora relied on her own investment in learning and acknowledged that she found her first year in the teacher education program lonely: "I think I struggled a little bit more to make connections with people." Large classes made it more difficult for her to connect to her peers. As pre-service teachers encounter a variety of beliefs and have new learning experiences with others, their ways of knowing may also change and evolve over time.

Theme: Sophisticated beliefs about teaching

Baxter Magolda (1992) states that students make "a discovery that will make independent knowing possible" and will shift their focus to thinking for themselves (p. 137). Teacher educators hope to promote "active learning and disciplined inquiry that leads to the intellectual empowerment of students" (Boyer as cited in Baxter Magolda, 1992, p. 269). A notable feature of the data, as seen in Table 1, is the prevalence of independent and contextual ways of knowing identified by the participants in the beliefs about teaching domain. An independent way of knowing in this domain was displayed by two pre-service teachers and a contextual way of knowing by four pre-service teachers. The core assumptions underlying an independent way of knowing are that knowledge is uncertain and

open to many interpretations. The variety of viewpoints shared by others then becomes a legitimate source of knowledge. Thinking for oneself is an approach to knowledge that characterizes independent knowing. This feature remained true for contextual knowing as well, although a contextual knower must also “consider the ideas of others and the relationship of his [sic] point of view to others” (Baxter Magolda, 1992, p. 69). Core assumptions for the contextual way of knowing are that knowledge may be uncertain, but some views are more valid than others. Exchanging ideas with others helps individuals to evaluate and integrate new understanding.

The practicum experience provided an opportunity for the pre-service teachers to make new discoveries about the teaching profession. New understanding is encouraged in a school environment where professional experiences – such as lesson planning, instruction, assessment, and classroom management – are part of the practicum. Pre-service teachers are presented with new learning contexts when they are assigned to a classroom with a particular grade level and partner teacher. The learning context changes daily, and pre-service teachers must respond along with the classroom teacher to the individual needs of their learners. When responding to questions about their beliefs and understanding related to teaching, two of the pre-service teachers responded in a manner that reflected an independent way of knowing. For instance, Evan indicated the following:

I want to be a teacher who knows what he is teaching, who the students consider a friend but also an authority ... somebody who they're responsible to instead of us just being peers. I'd like to think that I'd be a teacher who could, who any student could come to with issues.

Evan was developing a vision of his teaching practice based on navigating the duality of the teacher as a friend and an authority figure. His thinking fell within the independent way of knowing, but his vision was still developing; he was not yet voicing a consolidated perspective of a teacher identity. Additionally, his focus was on the self and less on student needs. Likewise, Amy expressed beliefs about teaching that reflected an independent way of knowing:

I definitely have some good models of a good teacher and who I kind of want to be, and I don't want to be exactly like them, but there are parts of them that I do want to be like ... somebody that is willing to adapt and be open to spontaneity I think is good.

Amy was also balancing perspectives; she had a sense of her own strengths as a teacher but was aware that other models could offer her valuable reference points.

Four of the pre-service teachers (when responding to questions related to beliefs about teaching) displayed a more complex and assured understanding reflected by a contextual way of knowing. One of those teachers, Nathan, described the freedom he felt in the classroom when he was given the opportunity to teach band class on his own:

I was relaxed and could do what I wanted. I had a plan; I was in my zone as far as improvising and taking what the students wanted [into consideration] and just having fun with the students. ... The classes tended to go well.

Nathan explained that his classes often went more smoothly when his partner teacher did not interrupt the flow of his lesson: “I would follow [my lesson plan] and she would say that I followed it too closely and that I needed to improvise more, then if I improvised too much, she would say, go the other way.” Nathan acknowledged that his partner teacher’s judgment of his performance, though, could have been more specific: “She gave me the point form notes ... but did not talk about how I could improve overall.”

Similarly, Emily appreciated the opportunity to demonstrate her skills in teaching physical education in her practicum: “I was proud of myself for completing the practicum and getting some of those harsh comments that can be part of the experience ... but I know I will succeed.” The practicum experience allowed both Nathan and Emily to develop their own perspectives and think through the problems that were part of the teaching experiences in their classrooms. Not all partner teachers are supportive mentors in the ways that teacher educators would wish them to be for pre-service teachers. Knowing that his partner teacher did “not really care that much that I was there in her class” created challenges for Nathan. Nathan was required to consider the ideas and practices of his partner teacher and the relationship of his point of view to hers. Contextual knowers think through problems and integrate and apply new knowledge. Thinking critically about the context of his practicum allowed Nathan to begin to develop and make use of pedagogical approaches that reflected his strengths. Emily’s partner teacher was less involved in guiding her work. The partner teacher’s feedback was not consistent or always clear, but she stated that he also gave her many opportunities to teach using her own judgement. Emily stated, “He trusted me and he let me approach the classes in my own way.” Emily developed a level of confidence that allowed her to take up her role successfully as a pre-service teacher. She perceived that she was learning about the teaching role and was growing as a result of her partner teacher’s more hands-off approach.

Nathan described his beliefs about teaching this way:

Good teaching is thoroughly planned and has purpose with everything ... It also has room for improvisation. It’s only planned in its basic structure, but not every little thing is planned. Teaching is patient, and teaching is selfless.

Nathan’s practicum experience told him that preparation is important, but he left space for unplanned experiences. He was developing his own views and voice; he expressed confidence in how to organize a teacher’s role and responsibilities, but there was also an underlying acknowledgement of the unpredictable aspects of teaching.

Luke remarked on his understanding of teaching: “You have to be authentic. You have to embody it.” He articulated the importance of self-reflection for synthesizing new experiences, saying the following:

I think it looks like overcoming barriers ... You know, there is a little bit of push and pull and a little bit of tug and then you reach a new level of understanding or a new way of looking at something. Uhm, I think good teaching looks like those moments in action affecting each other and I think it, it doesn't look static, it looks dynamic.

Anne, whose beliefs about teaching also fell in the contextual way of knowing, described her responsibility as an emerging teacher to “figure out who you are as a person and as a learner before you can really establish yourself as a teacher.” She continued:

Teaching is meeting your students' needs ... it's very context specific, so I guess just being able to take each day by day and of course you are going to have your strategies that work for you and build on those ... it depends on the students definitely.

Anne recognized the needs of her students in a specific classroom context as being important to how she approached her teaching. Anne's statements demonstrated the voice that she was developing about her teaching practice.

Storylines

In her research, Baxter Magolda (1992) found underlying “story lines” (p. 191), or threads, that ran through the collective stories of her students. These story lines were more general than the patterns of ways of knowing she identified. The story lines provided an opportunity for the reader to find possible parallels between the specific experiences of her participants and students at other institutions. Lucas and Tan (2013) also discovered evidence of story lines in their study of the experiences of business and accounting students. In the research presented in this article, I found two story lines evident across the pre-service teachers' accounts.

Storyline: Valuing practicum experiences

Pre-service teachers tend to value their practicum experiences, viewing these experiences as dynamic and beneficial for their growth as teachers (Bainbridge, 2011). The practicum experience often gives pre-service teachers models of effective teaching practices and ways of building relationships with students; this hands-on experience allows them to experience a variety of classroom settings and to begin to develop their professional identity. Comments from six of the pre-service teachers in this study fell into the independent or contextual way of knowing when speaking about the practicum and the significant role they believe it played in their growth as a pre-service teacher. Only one student displayed a transitional way of knowing.

Evan's comments reflected the independent way of knowing in this domain. He reported that the practicum experience was unsettling in some ways. He was still uncertain about the nature of teaching but had considered his efforts carefully: "I honestly have a hard time separating teacher from teaching. I don't, I don't know if teaching as the act or teacher as person is more important." During his practicum experience, Evan wrestled with what to believe about teaching and how to define his teaching approach. Similarly, Amy grappled with her orientation to teaching during her practicum. She described her biggest challenge with her students as needing "to shift my thinking from how I would think to how they are going to think ... I struggle with that from time to time."

Pre-service teachers' comments in the contextual way of knowing acknowledged that partner teachers have an active role to play in acknowledging their efficacy as budding educators. Emily appreciated the ways in which her partner teacher contributed to her learning in the practicum, but also recognized her own individual identity as a pre-service teacher. Her partner teacher demonstrated how to develop relationships with students and how to manage large classes. Emily noted that she "learned a lot from her partner teacher, but I will never be him." Anne's comments on her practicum experiences related to her growing confidence: "It made me more confident ... I think that the interactions with the students were meaningful and I took a lot out of it, and I think they did too." Nathan reported that his partner teacher was a "very competent music teacher," but she "didn't seem to have a lot of energy or a particular desire in coaching me and mentoring me through the process." Emily and Anne described their practicum experience in positive terms, acknowledging areas of growth, while Nathan identified a specific challenge that was part of his experience, commenting that his practicum context was not always a positive one for him. However, his other comments indicated he still felt a sense of professional growth from his experience.

Nora's comments reflected the transitional way of knowing, mirroring the value placed on the practicum experience by others. Nora stated, "I definitely learned the most in my practicums ... I think that the field experiences are more powerful." She further added that "maybe it's terrible to say this, but I don't even remember some of my classes." These statements revealed her preference for the practical learning gained in the field. When asked to describe the role of the practicum in her learning, Nora explained how the way in which her partner teacher approached his teaching had influenced her perspective:

Yeah, I think just watching him in the last practicum taught me a lot – areas I want to be like and some areas that I don't want to be like ... I mean, there were things that I didn't necessarily agree with. I keep them to myself ... it is his class.

Nora was aware that she could choose her teaching strategies; however, she was not ready yet to act fully on these beliefs. The element of teacher authority is an

aspect of the practicum that pre-service teachers navigate with varying degrees of comfort. The relationship between the partner teacher and the pre-service teacher is usually key to a successful practicum experience (Danyluk et al., 2020). If the partner teacher does not provide emotional support, collaboration, flexibility, and a manageable workload to the pre-service teacher, then the pre-service teacher's opportunities for professional growth become limited (Beck & Kosnik, 2002).

Practicum experiences gave these pre-service teachers opportunities that allowed them to wrestle with complex issues that supported them in moving towards more mature epistemological beliefs. The real-life context of the classroom was a powerful learning environment that asked the pre-service teachers to imagine their own way of being in the classroom. As they progressed through practicum experiences, they experienced growing autonomy and increased responsibility. These are usually welcomed aspects of the pre-service teacher experience (Naylor et al., 2015), but they can also contribute to vulnerability. The expectations placed upon the pre-service teacher to develop relationships with both students and teachers, to fit within the school community, and to unpack the curricular outcomes of programs of study all require much effort and a sense of self-efficacy. A strong sense of professional self can blossom in these circumstances, but supportive contexts are essential to this growth (Dam & Bloom, 2006).

Storyline: Developing personal voice and teacher identity

In the second storyline, the pre-service teachers demonstrated the development of a professional stance towards teaching and learning. Brownlee et al. (2001) note that epistemological beliefs, which “are considered to filter all knowledge and beliefs, may influence beliefs about learning and teaching in specific learning situations and therefore, how a person is likely to approach learning/teaching in particular contexts” (p. 250). Similarly, Nickel and Zimmer (2019) state that “TCs [Teacher Candidates] who are able to align their practice with [their] beliefs are likely to feel a strong sense of self-efficacy” (p. 146). As the pre-service teachers moved to more sophisticated ways of knowing, their sense of self as teacher became less tentative and idealized and more nuanced and grounded.

Four of the pre-service teachers revealed their teacher identity through belief statements (about teaching) in the contextual way of knowing. Comments from Emily, Luke, and Anne reflected how they saw themselves as emerging teachers. Emily described her views on her teaching identity this way: “I haven’t had enough experience to know ... have I got a grasp on my own professional identity? I don’t think so ... I’m not sure of the type of teacher I’m going to be yet.” Emily described the uncertainty she felt about her teaching identity. Her image of herself as a teacher – or, as described by Darling-Hammond and Bransford, her “vision of professional practice” (as cited in Darling-Hammond, 2006, p. 304) – was still uncertain. Emily acknowledged that experience will help her define this identity for her. Her openness to “perspectives and a little bit more insight” from other teachers reflected her contextual way of knowing.

Luke remarked on his understanding of himself as a teacher, “You have to show up as yourself and discover your style ... your essence. And it needs to come from a place inside, not from a book.” Luke’s comments suggested a recognition of the importance of self-understanding and reflection. Clandinin’s (1992) work offers insights into Luke’s teacher identity development, suggesting that a teacher’s personal practical knowledge rests on past experiences, present thinking, and future plans thinking: “It is the kind of knowledge carved out of, and shaped by, situations; knowledge that is constructed and reconstructed as we live our stories and retell and relive them through the process of reflection” (p. 125).

Anne revealed a strong sense of self in comments about her emerging teacher identity:

You want to know who your students are, you want to bring that out, and you want that to shine through, their interests and everything in their own work. It would be kind of hypocritical if you are making them work on discovering who they are as people and who they are going to be in this life if you haven’t kind of reflected on that yourself.

Anne’s comments also pointed to the importance of self-knowledge. She further commented that as a pre-service teacher,

you’re negotiating a few identities. It’s with the students ‘cause you are trying to find your place with them, but you are also figuring out where you stand with your partner teacher, and also where you fit into school life.

Anne identified the complexities of integrating the multiple roles of teacher. Connelly and Clandinin (1999) suggest that “different identities can show up to be reshaped and take on new life in different landscape settings” (p. 95).

Baxter Magolda’s (1992) research has recognized the importance of learner identity in developing epistemological beliefs. She explained that how one makes meaning of knowledge, views oneself in relation to others, and perceives one’s identity contribute to an ability to speak and decide for oneself. Baxter Magolda (2007) uses the term “self-authorship” (p. 69) to describe this shift to an internal voice that guides individual beliefs and values. In the present study, the pre-service teachers’ comments reflected a growing ability to think for themselves; this capacity became the foundation for their emerging professional voice and teacher identity.

DISCUSSION

My purpose in examining the perspectives of pre-service teachers in this study has been to draw out useful connections between Baxter Magolda’s ways of knowing and pre-service teacher patterns of intellectual development. Pre-service teacher identity can be illuminated through this lens of pre-service teacher epistemologies. While pre-service teachers in the present study displayed a range

of ways of knowing across the five domains, the majority of pre-service teacher comments fell into the independent and contextual patterns.

In her work, Baxter Magolda (1992) identified one overarching pattern for the students. In the present research, I acknowledge the fluid and dynamic nature of their responses within and across knowledge domains. This approach allowed the contextual attributes of each pre-service teacher to be discerned. In this way, my study has aimed to contribute to a deepening understanding of how Baxter Magolda's ways of knowing framework may be utilized in ways that recognize the complexity of knowledge construction.

Pre-service teachers primarily want to practice their teaching skills in a supportive practicum setting (Ulvik & Smith, 2011); the significance of this finding has been explored elsewhere (Hastings, 2010; Turunen & Tuovila, 2012). The pre-service teachers in the present study viewed the practicum experience as a powerful and engaging site of learning. The ability to integrate a variety of perspectives and to decide on appropriate approaches in diverse classroom settings is a necessary skill for classroom teachers. Brownlee (2001) noted that the progression towards more sophisticated ways of knowing is important for classroom teachers who are increasingly teaching in "pluralistic educational contexts where interactions with a variety of students, colleagues and parents require flexibility and reasoned interpretations" (p. 288).

While many pre-service teachers (generally) have said that the practicum experience is the most consequential for them in learning to teach, Adoniou has concluded "that teacher preparation was most effective when there was alignment and collaboration between universities, practicum, and schools" (as cited in Naylor et al., 2015, p. 131). None of the pre-service teachers in the present study mentioned the role of university field instructors in contributing to their learning in the practicum experience; the role of the university field instructor seemed vague in their minds. One suggestion for change is to rework the field instructor role to that of mentor (rather than evaluator); thus, university coursework could be connected in new ways to the practicum experience. A context in which partner teacher and university field instructor both support the pre-service teacher as emerging teacher educators could help to build connections between theory and practice and offer a more cohesive pre-service teacher experience.

Intellectual development is not just a process of maturation (Chickering & Reisser, 1993), but a multi-dimensional and context-sensitive process. In the present study, the variety of ways of knowing suggests that teacher educators should be concerned with providing opportunities to activate and extend the understandings of pre-service teachers regarding the complex nature of teaching. Naylor et al. (2015) recommend that teacher educators take advantage of the background experiences that pre-service teachers bring to the program. When "teacher educators apply strategies for activating pre-service teachers' backgrounds and assumptions so that reflection and critical analysis of the effects of holding

such views can be identified” (Naylor et al., 2015, p. 130), preconceived ideas about teaching can be investigated and challenged.

Similarly, Ellis (2010) concludes that teacher education programs need to plan for and recognize the agency of pre-service teachers in the varied educational settings in which they find themselves. Teacher educators who model problematizing and reflecting critically on personal epistemological beliefs can promote the development of more sophisticated epistemological beliefs (Brownlee et al., 2009; Walker et al., 2012). Such practices would be best supported by a clear program philosophy that articulates the focus and goals for the teacher education program, accompanied by greater collaboration between teacher education instructors and classroom teachers.

CONCLUSIONS

The small-scale study that was the basis of this article aimed to contribute to an understanding of the personal epistemologies of pre-service teachers. I recognize that institutional contexts for students vary, and that the perspectives of pre-service teachers are context-bound and constructed in particular educational settings. Pre-service teachers who participated in the present study may have been more comfortable and confident in their pre-service teacher role. There may have been others who were more anxious about sharing their emerging beliefs and values about teaching. These pre-service teachers’ voices did not comprise part of this group. Further research that captures a greater range of pre-service teacher experiences and perspectives would be beneficial.

The findings indicated that an understanding of pre-service teachers’ personal epistemologies, as framed through patterns of intellectual development or ways of knowing, can offer important insights into how they view their learning contexts and themselves as emerging teachers. Developing more sophisticated personal epistemologies can promote meaningful approaches to teaching while developing teacher identity reflects on teacher practice. When identity development is part of a teacher education program (Beauchamp & Thomas, 2009; Gallchóir et al., 2018), it can provide pre-service teachers with opportunities to integrate their understanding of learning and teaching and deepen a vision of themselves as educators. Integrating personal epistemologies as an explicit pedagogical approach in teacher education programs — along with greater collaboration between university and practicum sites of learning, and the integration of mentoring roles — are both highly recommended.

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