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Article abstract

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Self-Assessment of Professional Growth Through Reflective Portfolios

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Key words: *Reflection, portfolios, self-assessment*

Abstract: *This study aims to discern how teacher candidates develop reflective capacity by self-assessing their portfolios. While the goal was to help first-year teacher candidates assess their progress toward achieving provincial teaching competencies, many called attention to the interconnections between their academic artifacts and their personal profiles. This led the researcher to refine the focus of the portfolio to the emergence of professional identity and developing structures to support this type of self-awareness.*

Titre: Autoévaluation de la croissance professionnelle à l'aide de portfolios réflexifs

Mots clés: *réflexivité, portfolios, auto-évaluation*

Résumé: *Cette étude vise à trouver comment les futurs enseignants développent la capacité de réflexion par l'auto-évaluation sur leurs portfolios. Bien que le but était d'aider les enseignants en première année de formation à évaluer leurs progrès vers la réalisation des compétences provinciales, plusieurs d'entre eux ont attiré l'attention des chercheurs sur les liens entre leurs artéfacts universitaires et leurs profils personnels. Ce développement a conduit les chercheurs à affiner la finalité du portfolio pour soutenir l'émergence d'une identité professionnelle et au développement des structures pour soutenir cette forme de connaissance de soi.*

Introduction

This practitioner-focused research aimed to discern how teacher candidates developed reflective capacity by self-assessing their portfolios. The goal was to help first year teacher candidates to assess their progress towards provincial teaching competencies. By doing so, I anticipated that candidates would set a purpose and enter subsequent courses with a sense of direction that would help them to seek the knowledge and specific skills they need ffor both their practicum and their careers. Through better understanding their learning, I hoped to better frame the portfolio tasks and enhance future reflection.

The provincial competencies proved to be an effective framework for self-assessment and in most cases helped the teacher candidates to develop metacognitive awareness of their own learning growth and needs. However, many also called attention to the interconnections between their academic artifacts and their personal profiles. This led the researcher to refine future portfolio research to examine the emergence of professional identity and developing structures to support this type of self-awareness.

The literature review that follows analyzes the characteristics of rich reflection and presents research on the effective use of pre-service teacher portfolios. This research will be used to analyze the quality of reflection evident in the teacher candidates' portfolio self-assessments. I also apply the portfolio research to inform our institution's portfolio development.

1.   Literature Review

1.1   Defining Reflection

The research literature on reflection in teacher education often traces its roots to Dewey's (1933) definition of reflection as the "active, persistent and careful consideration of any belief or supposed form of knowledge in light of the grounds that support it and the further conclusions towards which it tends" (p. 9). Experiences may provide incidental learning but the representation of ideas is a source of learning as one sorts out ideas in writing and moves from undeveloped intuition to reflection (Moon, 2004). Through deliberative reflection upon school experiences, the experiences themselves become richer:

> In discovery of the detailed connections of our activities and what happens in consequence…experience is made explicit....Hence the quality of the experience changes; the change is so significant that we may call this type of experience reflective—that is, reflective par excellence. (Dewey, 1944, p. 170)

Through journals, portfolios and other reflective exercises, teacher candidates can represent their learning in school experiences in ways that are personal and meaningful. Unlike Aristotle's notion of *techne*—routine production or operation—reflection is more closely related to *phronesis*, not only achieving an end such as student learning but carefully considering how to best achieve that end and the legitimacy or importance of that end.

Effective reflection is also described as a type of "deep learning" which requires teacher candidates to move beyond surface level interpretations of school events to a deep understanding. There are numerous frameworks that describe depths of reflection, usually derived from the practical work of analyzing samples of reflective writing. Van Manen (1977) proposed three levels based on the work of Habermas. The first, technical writing, aims to efficiently and effectively achieve particular ends (*techne*). The second, practical reflection, examines the goals and assumptions of the situation and analyzes it. The third, critical reflection, asks the reflector to critique the moral and ethical implications of the situation being described. Hatton and Smith (1994) identify similar levels; the first, descriptive writing, is not reflective at all but simply reports events. The second, descriptive reflection, provides reasons drawn from personal judgment or research literature. The third, dialogic, "is a form of discourse with oneself, an exploration of possible reasons" (p. 41). Critical, the fourth level, involves the reflectors in accounting for the broader social context in giving reasons for their judgments. Jay and Johnson (2002) describe comparable levels as descriptive, comparative, and critical. For Bain, Packer, Ballantyne and Mills (1999), teacher candidates functioning at the highest levels of reflection draw

"an original conclusion from their experience, extract general principles, formulate a personal theory of teaching or take a position on an issue…and plan their own further learning on the basis of their reflections" (p. 60). In all these frameworks, deep reflection involves looking critically at the situation and considering the broader context before deciding upon one's own position or future action.

These higher forms of reflection are sometimes referred to as reflexive thought. Taylor and White (in Moon, 2004) suggest that while reflection might apply theory to practice (e.g., apply child development theory to better understand a child), "reflexivity suggests that we interrogate these previously taken-for-granted assumptions" (p. 96). Such reflexivity is often invited by situations that are puzzling and encourage the reflector to reside in a state of doubt and perplexity before reaching a conclusion (Loughran, 2002). Reflection on these dilemmas can help illuminate assumptions so the reflector can see the situation more broadly. "Reflection is effective when it leads the teacher to make meaning from the situation in ways that enhance understanding so that she or he comes to see and understand the practice setting from a variety of viewpoints" (Loughran, 2002, p. 36) rather than defensively rationalizing his or her practice.

Such defensive rationalization of practice is precisely what teacher educators who promote reflexivity hope to prevent. A teacher who self-protectively blames her students for their poor performance or who clings to ineffective or even inappropriate practices has not developed the reflexivity to consider other perspectives and perhaps even her own competing emotions. Reflexivity is therefore closely connected to self-awareness: "If I can form a helping relationship to myself—if I can be sensitively aware of and acceptant toward my own feelings–then the likelihood is great that I can form a helping relationship toward another" (Rogers in Warin, Maddock, Pell and Hargreaves, 2006, p. 234). While there is no guarantee that a reflexive practitioner is a better professional, the defensive teacher described here is surely handicapped in her ability to meet her students' needs.

The teacher candidates in the current study were seldom involved in teaching formal lessons or self-assessing their own teaching practice. However, they were assessing their own growing knowledge and learning needs. They were beginning to question their beliefs and values as they learned to "understand the practice setting from a variety of viewpoints" (Loughran, 2002, p. 36).

1.2   Portfolios as a Reflective Tool

Portfolios have become a commonplace reflective tool in teacher education because they provide for "the development of a professional habit of reflection and a concrete representation of the process of reflection" (Berrill & Addison, 2010, p. 1179). However, the degree to which portfolios ultimately contribute to reflection may depend on many factors. In an overview of portfolios in teacher education in the United States, Zeichner and Wray (2001) surveyed the various conditions under which portfolios are constructed across the United States. There are various purposes for portfolios including learning portfolios used by teacher candidates to document their growth as teachers, credential portfolios used to assess the degree to which the teacher candidates have achieved proficiency in required teaching standards, and showcase portfolios used to highlight the teacher candidates' best work for employment purposes. They observed that portfolios might also vary in the degree of autonomy the teacher candidate has for selecting artifacts, the organization of the artifacts, the degree of support the teacher candidates receive in constructing the portfolios and the degree to which they interact with others about the construction of the final product. Proponents of portfolios argue that they "encourage student teachers to think more deeply about their teaching and about subject matter content, to become more conscious of the theories and assumptions that guide their practices, and to develop a greater desire to engage in collaborative dialogues about teaching" (p. 614). Zeichner and Wray counter that teacher educators and researchers must move beyond the rather simplistic conclusion that portfolios promote greater reflection to consider more carefully

> what is the nature and quality of reflection that is promoted under different conditions of portfolio use and what is the specific quality of the assessments that one can make of teaching with the aid of teaching portfolios under particular conditions (p. 620).

In the decade since Zeichner and Wray's challenge, various researchers have responded to their call and have identified some of the conditions that seem to promote the highest quality reflection. Many agree that portfolios intended to demonstrate achievement of standards or competencies to accrediting bodies often undermine teacher reflection because teacher candidates provide desired responses, not critically reflective ones. However, if the portfolio is regarded as a formative assignment, competencies can provide a useful framework for teacher candidates–a set of goals to strive toward as they reflect upon their own growing competence. A discussion of this research follows.

Beck, Livne and Bear (2005) compared pre-service and beginning teachers' self-ratings of their professional development in summative and formative portfolios. Both types of portfolios required teachers to assess their achievement of teaching standards including reflective skill, understanding of assessment, backwards planning, analyzing student work and teacher peer collaboration. The summative portfolio was relatively prescriptive in asking the teacher to document specific aspects of lessons with little opportunity to reflect upon learning that was not related to these prescribed aspects. The formative portfolios followed a few different formats but generally were more narrative in format,

requiring the teachers to tell a story about their interactions with learners and their instructional effectiveness. The research suggests that the formative portfolios contribute more to overall teacher development, particularly self-discovery and reflection, than the summative portfolio. They conclude, "Our position is that the promise of the portfolio consists of fostering a powerful habit of mind, reflection, which will better enable teachers to make sense of and introduce effective change into their classroom" (Beck et al, 2005, p. 226). The challenge with the summative portfolio may have been its overly prescriptive nature, not only that the purpose was summative. It should be noted that in this research, both summative and formative portfolios were framed by teaching standards but the aim of the former was to prove competence while the aim in the latter was to reflect upon growth towards those standards.

To defend the use of teaching competencies in portfolios, Berrill and Addison (2010) draw upon Wenger's notion of "shared repertoires of practice." "Membership in a community of practice translates into an identity as a form of competence…From a sociocultural historical perspective, the identity construction involves gaining understanding of and facility with the repertoires, or competencies of the professional teaching community" (p. 1180).

Through school placements and university courses, teacher candidates are introduced to these repertoires of practice. The reflective comments in the portfolio serve to articulate this identity for individuals. In Berrill and Addison's research, the teacher candidates' perceptions of portfolios were mixed. While some agreed that the portfolio helped them to articulate their beliefs and think critically about their teaching identity, others felt the guidelines were too constraining, leading teacher candidates to create the "right" answer rather than their genuine responses. The researchers worry that imposed competencies may cause the teacher candidates to lose sight of the beliefs that inform their teaching practices–those beliefs that are often articulated in reflective exercises.

> When candidates perceive that demonstration of imposed competencies is the most important factor for program completion or entry to the profession, they often lose sight of deeper issues related to formation of their teaching identities and of ways that they enact their beliefs through their teaching practices (p. 1178).

Even when the competencies are not being externally assessed, teacher candidates may perceive them as more important than the reflexive questioning of taken-for-granted assumptions.

Insufficient understanding of standards language may undermine reflection. Chung and Kim's (2010) participants framed their artifacts in terms of the standards but often lacked an understanding of the theoretical rationale for the standards, so they were then viewed as a set of generic skills. This standards jargon led them to what VanManen refers to as technical "how-to" reflection rather than "critical examination of the beliefs, values and assumptions that guide the teacher's practice" (p. 372).

Orland-Barak (2005) suggests that deep reflection occurs when portfolios are developed collaboratively. Product portfolios, collaboratively developed, were designed to show the teachers' understanding of the new curriculum with artifacts showcasing lesson plans according to the new curriculum, observations of the teachers using the new curriculum, and reflections on this process. Teachers claimed that constructing a portfolio was meaningful for them but they seldom analyzed what they were actually learning. The researcher was disappointed to note that most reflections when analyzed according to Hatton and Smith's (1994) levels were primarily descriptive reflection. "They exhibited few critical reflective accounts of the conflicts that these innovative practices might bring to their practice or of the meanings that they had made out of them" (p. 33). She contends that the limited reflection may demonstrate the teachers' "perceived sense of duty … to portray a favourable image of the innovations dictated from above" (p. 38). Only 20% of entries were written at a dialogical level and most of these were group reflections on the team's learning in the product portfolios where the teachers "stepped back from the events/actions to reflect on their experience, using qualities of judgments and possible alternatives for explaining the conditions that shape the success of innovative practices" (p. 36). Interestingly, these deep reflections occurred in collaborative settings where the reflection was improved by the "infrastructure of engagement" (Wenger in Orland-Barak, 2005, p. 39). This reinforces Rodgers' identified benefits of collaborative reflection: "affirmation of the value of one's experience, seeing things anew when others offer alternative meanings, and support to engage in the process of inquiry" (in Orland-Barak, p. 39). While most teacher education portfolios are likely to be individual creations reflecting the specific experiences of the individual teacher candidate, Orland-Barak's research highlights the importance of collaborating with peers to consider alternate interpretations and deepen reflections about the significance of the artifacts.

If the structure of summative portfolios often undermines authentic reflection, it is also possible to err on the other extreme and provide too little structure. Without a clear purpose, there is a risk that the portfolio will degenerate into little more than a scrapbook with only vague educational value. Darling-Hammond and Bransford (2005) caution, "A lack of clarity about purposes can result in a portfolio that is merely a collection of everything a student teacher completed in his or her program. Such a portfolio tells evaluators 'everything and nothing at the same time'" (p. 426). Portfolios organized around standards can help pre-service teachers develop a conceptual framework about teaching–a

set of goals by which they can document and reflect upon their growth towards those goals. In a study by Wetzel and Strudler (2006) teacher candidates generally valued the use of standards to assess their own work because it helped them see their progress. Williams, Davis, Metcalf and Cunningham (2003) recommend beginning a portfolio early in the teacher candidates' program to create awareness of the goals of the teacher education program at the beginning of their studies.

Portfolios that are used to externally assess competency for certification processes may serve a purpose for those certification bodies but the research suggests they are not particularly conducive to teacher reflection and growth. I argue that building a formative portfolio around a set of competencies provides a type of "liberating constraint" (Davis, Luce-Kapler, Sumara, 2000, p. 87)–enough constraint to provide a conceptual framework but plenty of liberty to select the artifacts that help demonstrate growth in those competencies. It is important that the teacher candidates retain as much choice as possible; if they select the artifacts, they are better able to choose those artifacts that are personally meaningful and better able to reflect upon the impact of those artifacts on their learning. If they select a variety of artifacts but have no organizing framework or identified goals, it becomes difficult to reflect deeply on their professional growth.

Since the teacher candidates in the current study are in the first year of their four-year Bachelor of Education program, it is important that our faculty articulate expectations that are appropriate for first-year teacher candidates, not only the goals for teacher certification at the end of the degree. According to the Association of American Colleges and Universities (Chen and Light, 2010), portfolio assessment should require:

- Progressively more sophisticated expectations as students move from entry level to culminating work
- A shared set of expectations for learning across courses so that these can then contribute to programmatic evaluation
- A careful articulation of those expectations that lead the students to make judgments about their own strengths and areas for growth and plan future learning (p. v)

Framing the portfolio assignment using the provincial "knowledge, skills and attributes" (KSAs) of a teacher (Alberta Education, 1997) has provided a framework for us to evaluate our program and develop a "shared set of expectations"–ideas that are first introduced, later applied and eventually "mastered" (to the degree that any teaching competency can be truly mastered). We believe this is leading teacher candidates to effectively "make judgments about their own strengths and areas for growth and plan their future learning." We are hopeful that candidates will set purposes and enter subsequent courses with a clear sense of direction that will help them to seek the knowledge and specific skills they will need for both practicum and for their careers.

1.3   Background to the Study

Participants included 32 of the 54 teacher candidates in two first-year foundations courses. The data for the study included candidates' self-assessments of their portfolio submitted as part of the portfolio assignment. The course required 30 hours of field experience in local schools and these school experiences helped to generate the artifacts in their portfolios along with assignments developed in this course and other education courses (e.g., research papers, journal entries, lesson plans, and school artifacts). To prepare the teacher candidates for the portfolio, a template was created with the following sections:

- Home page and introduction
- Philosophy of education statement
- Resume (revised with the support of Career Services)
- Personal profile (non-academic experiences that have shaped the candidate as a prospective teacher)
- Learning - artifacts grouped according to the knowledge, skills and attributes (KSAs) of a teacher required for certification by Alberta Education
  - Planning for Learning
  - Facilitating Learning
  - Assessment
  - Classroom Environment
  - Professional Responsibilities
- Reflective self-assessment responding to the following questions:
  - What specific *strengths* did the e-portfolio help you clarify? For as many of the KSA expectations as possible, identify arti-

facts/reflections that effectively demonstrate your understanding.

- o What *areas for growth* did the e-portfolio help you identify? For as many of the KSA expectations as possible identify specific goals that will help you to direct your learning in future semesters. What do you need to learn in order to be a certified teacher in Alberta?
- o How do you think creating an e-portfolio and self-assessing your own learning will *contribute to your growth as a teacher*, if at all? Why?

The template identified some potential assignments and artifacts that could be used as evidence but teacher candidates had the freedom to choose those that they deemed most illustrative. It also included some sample reflective statements to model the use of reflective captions.

2.   Methodology and Data Analysis

The research is a form of practitioner inquiry (Cochran-Smith, Barnatt, Friedman, & Pine, 2009) undertaken by a teacher educator. It involved a systematic qualitative inquiry into the features of reflective writing to better understand the learning of teacher candidates and to inform future practice in the teacher education program. Teacher candidates volunteered to participate in the research project but the researcher did not know who was participating until the end of the semester in order to comply with the expectations of the Human Research Ethics Board.

The only part of the portfolio included in the data analysis was the teacher candidates' reflective responses to the self-assessment questions. Data was thematically coded using a modified form of Hatton and Smith's (1994) levels of reflection. The first level, *descriptive reflection*, included self-assessment statements that articulated a general awareness of their learning and needs but with little comparison to the provincial KSAs to frame their self-assessment. By Hatton and Smith's definition, the second level termed *dialogic reflection* includes "a type of discourse with oneself, an exploration of possible reasons" (p. 41). In these examples, the teacher candidates used the KSAs to inform a dialogue about their own growth and learning needs, providing specific artifacts and reasons to support their reflection. While the dialogic reflections sometimes had a perfunctory quality, dutifully checking through each KSA, the *critical reflections* (the third level) showed teacher candidates experienced some unexpected surprises and genuine insights about themselves. Not only did they identify future goals, they seem to understand the importance of these goals. Those candidates writing critical reflections were beginning to articulate who they are as teachers, which has led to future research on the emergence of professional identity that will be discussed more fully. To code the data, I initially read the data penciling in observations and then added colour codes on subsequent readings. Next I summarized these examples using one large sheet for each level of reflection so I could see how the examples in each category corresponded and diverged. The results below detail this summary with illustrative teacher candidate quotes. The reflective self-assessment excerpts are labelled with the data code assigned to each individual (e.g., M4).

3.   Results

3.1   Descriptive Reflection
Teacher candidates whose portfolio self-assessments were coded as descriptive typically wrote very little. Their simple statements claimed *that* they learned but not *what* or *how* they learned. These reflections read like platitudes, general descriptions written for the instructor's benefit but with little personal investment or insight. They explained that the portfolio helped them to examine the KSAs and identify strengths and areas for growth but they did not identify what those strengths and areas for growth were. In responding to the final question about the importance of the portfolio, they said that self-assessment and reflection were important for professional growth but they didn't articulate *how* self-assessment and reflection contributed to their own growth. The prompt questions clearly required specific details ("for as many of the KSA expectations as possible, identify artifacts/reflections that effectively demonstrate your understanding" and "…for as many KSAs as possible, identify specific goals that will help you to direct your learning") but these teacher candidates did not refer to these specifics.

Fortunately, these limited reflections characterized less than ten percent of the reflections. Two illustrative examples follow:

- *The e-portfolio helped me to clarify the things I have accomplished towards my goals in education. It also showed me that I have done a lot of hard work that I should be proud of. Learning is constant and I will have much more to add to my reflections and portfolio as my education continues. (M3)*

- *The e-portfolio greatly helped me to better understand my strengths and the experiences I have gone through that can be beneficial to my prospective career as a teacher. It also helped me to create my educational philosoph*y *and better understand the KSAs and what I can offer that qualify as KSAs. (T14)*

3.2 Dialogic Reflection

The purpose of the portfolio and particularly of the self-assessment was to help first-year teacher candidates assess their progress towards provincial teaching competencies. This purpose was achieved with most of the teacher candidates; they learned to self-assess and *dialogue* with themselves about the standards they are aspiring to achieve. This prompted some thoughtful reflection as they looked back on their learning. Most teacher candidates selected a few notable KSAs where they had clear strengths or weaknesses but some listed virtually every KSA in either the strengths or growth category and pointed to specific learning or gaps to support their self-assessment. I include numerous examples in this theme because the majority of reflections were dialogic–neither simple description nor critical reflection.

Lesson planning was commonly mentioned as both a strength and an area for growth. Reflecting upon their planning artifacts helped the teacher candidates to recognize their growing understanding of the provincial curriculum and how this understanding is a first step towards the eventual goal of knowing "c) how to use these documents to inform and direct their planning, instruction and assessment of student progress" (Alberta Education, 1997). However, they also recognized how much they have to learn about instructional strategies and the challenges of planning for students with varying levels of achievement. Many now have a keener sense of what they need to gain from their third-year programs of study courses in order to be able to plan like a professional teacher.

- *I've been able to really look at the curriculum and programs of study in order to get a first hand look at what outcomes are expected of students in each grade level (c), whereas before, I was never really made aware of how and what I will need to cover as an educator. (M13)*

- *The portfolio helped me understand how important the curriculum is in learning! It also surprised me how broad it was, and allowed me to be as creative as possible as long as specific outcomes were made. I need to learn how to incorporate more than one outcome into certain learning activities, but incorporate them in a fun and engaging way for students so I'm not just scraping the surface with students. (T4)*

Because this is a first-year course, teacher candidates generally did not teach lessons in their field placements. However, they were frequently asked to assist struggling students and learned much about meeting the needs of diverse learners. Journal entries on this topic provided teacher candidates with the opportunity to reflect upon the complexity of doing so and these entries were frequently included as portfolio artifacts. Furthermore, many included their research papers on specific learning challenges and commented on how they learned much about meeting the needs of individuals through that research. They experienced firsthand the challenges of accommodating all students' needs in a busy classroom and many recognize that they need to learn strategies to address these challenges. Numerous teacher candidates pointed to Universal Design for Learning as a topic they want to learn more about to help them with differentiated instruction.

The primary artifact used to demonstrate understanding of assessment was the rubrics the teacher candidates created as part of their lesson planning assignments. However, many teacher candidates also included artifacts drawn from their field experiences such as tests they graded or rubrics and checklists they saw applied. Several like M4 quoted below reflected upon the importance of involving students in self-assessment based upon their experiences in schools:

- *The final strength is probably my assessment example, which is a short story I helped a student edit. I believe it represents my ability to help students become independent, and in control of their own assessment. (M4)*

She clearly embraced the shift to "assessment for learning" emphasized in the course. In identifying areas for growth, teacher candidates identified that they have "only part of the picture" and require broader knowledge to assess student learning and also to use these assessments to inform instruction.

- *I still need to work on how to give back clear, concise feedback to students that will help them learn and grow in the future. Every student is different, with their own unique needs. I would like to learn how to adapt and accommodate assessment practices to take into account*

the different learning needs and styles of students. (T6)

This excerpt and others like it indicate some theoretical awareness of the purposes of formative assessment. They recognized the importance of using assessment data for early intervention, to foster student metacognition and self-regulated learning, and to use performance assessments for those who do not communicate well in writing. They are taking a broad view of assessment as a means to not only evaluate but to empower learners.

Because teacher candidates were required to write one journal entry about the classroom environment, they typically referenced their journal entries with respect to this KSA. Some teacher candidates also included a photo of their classroom placements and discussed the key qualities in the teacher or classroom elements that they felt contributed to the effectiveness or, in some cases, the ineffectiveness of the classroom environment. Classroom management is one of the major challenges for many new teachers; the teacher candidates identified some of the questions and concerns they have about successfully managing a classroom and setting a tone that is productive for learning and for maintaining children's dignity. In is noteworthy that in selecting illustrative quotes, there were significantly more areas for growth identified than areas of strength. Teacher candidates made some cursory observations about their strengths in understanding classroom environments but many more shared the apprehension described by T5:

- *Right now I am just looking at the physical environment, like desks and reading areas, but I think need to wrap my head around the idea that it involves a lot more than just that. It involves the rules that create a safe and comforting place for the students [and that] also allow for minimal disruptions to occur. I know that the classroom has to feel like a welcoming environment for everyone and the students need to feel comfortable being able to answer questions or say what is on their mind. The problem is that I am not sure exactly how to do this. There are a few strategies that I have picked up over the course of the semester like creating the rules as a class and making sure that the students understand why those rules are there, but that alone will not work. My goal is to start talking to the teachers I know and meet about how they manage their classroom and how they deal with disruptions or children who need a bit more attention. I then plan on observing whether or not I feel their methods really work for the students and what kind of environment they are creating. (T5)*

The reflective self-assessment cited here shows this teacher candidate is willing to acknowledge her perplexity about this aspect of teaching and to proceed with a receptive mind into future experiences. It is promising that she and others noted the broader principle of creating a safe environment rather than technical management or control.

As faculty, we can remind teacher candidates of the value of engaging parents in their children's learning but it is not until they experience practical ways to do this that they begin to understand its potential. In the section of the portfolio entitled "Professional Responsibilities" this teacher candidate illustrated some of the strategies her teacher used and described her learning here:

- *also saw how important it is to engage parents in the learning process and found ways to make parents. At all times parents were encouraged to sign up to volunteer in the classroom (i). After seeing the success of encouraging parents to volunteer on a regular basis it is something I'd like to implement in my future classroom.* T1

Self-assessment clearly helped this teacher candidate to identify specific approaches that she wants to use in her practice.

While teacher candidates early in their degree may lack the specific knowledge of how to achieve particular outcomes, their self-assessments show that they are beginning to reflectively consider what ends they have for students and why it might be important to, for example, engage learners in "reasoned, meaningful, and incrementally progressive learning opportunities for students" and to move beyond "scraping the surface" (T4). It may be premature to expect first-year teacher education students to reflexively consider their taken-for-granted assumptions about curriculum and arguably they are looking for technical ways to efficiently achieve particular ends (Van Manen, 1977). However, these self-assessments suggest they are also "extract(ing) general principles" and "plan(ning) their own further learning on the basis of their reflections" (Bain et al, 1999, p. 60)–indicators of deep reflection.

3.3   *Critical Reflection and Professional Identity*
Like dialogic reflections, critical reflections drew on the KSAs to identify specific learning and future goals. However, these reflections showed some surprise or personal insight about themselves or the importance of these goals. Admittedly, some of the reflections coded as dialogic could also be indicators of critical reflection such as T5's worry about creating a safe learning environment. Perhaps the data code

selected is less important than the significance of the learning actually experienced by the teacher candidate and that is not always easily discerned.

This first group of reflections focuses on insights about instruction and assessment. For this teacher candidate, analyzing learning artifacts collected over time helped her recognize her instructional impact.

- *While working in the classroom I kept in mind that I also needed to take pictures of things that I helped out with. This guided me to look deeper into experiences and reflect on what I had learned. For example the pictures of the one student's journal entries. I typically helped her with her writing when I was at the school. This just became a routine and I didn't think much of it after a while. When I began to collect artifacts of my learning I thought about taking some pictures of entries I had helped her with. As I began to do that I realized the improvements she had been making since the beginning of the year. This helped me discover that I had helped to facilitate her learning. (T7)*

Another identified her own limitations in math and spelling and the need to develop in these areas during university so she can help students learn effectively and "prevent anxiety brought on by doubt in my ability" (M5). It takes courage to articulate one's limitations but the portfolio goal-setting helped her to articulate this goal and reflect upon the way her anxiety might impact her future students. One teacher candidate was astounded by the learning differences in her kindergarten classroom but this helped her to recognize how important it is to assess in ways that don't necessarily depend on writing because all children deserve a chance to "show that they know." This insight may be lost when working with older children who have some writing ability but may also benefit from the opportunity to be assessed orally.

- *Just looking at writing samples from students—as shown above, there are students who can write their letters and write clear sentences with no difficulty. Conversely, there are other students who still cannot differentiate between letters and numbers yet… I feel that during activities, it's important to talk to students about what they are doing—because in some cases, they may be unable to communicate learning through writing, but may be fully capable of explaining it orally. This kind of performance based learning is crucial for students of such a young age, because in my (limited) experience, it seems that these students are eager to show that they know the answers, however it becomes frustrating and disengaging when they don't have the literacy skills to write what they'd like to say. (M13)*

Finally, one teacher candidate articulated her more fully developed appreciation of formative assessment techniques gleaned by assessing her own role in children's development.

- *Through working with students on these "sight reading" activities I was able to see first hand just how effective it is to assess a student's work with that particular student present. If the student is able to see their own progress, this is extremely motivating for them and my encouragement only adds to their self confidence. (T3)*

As faculty we may lecture about the importance of formative assessment but in comparing her school experience to the KSAs, this teacher candidate internalized this important insight.

Numerous teacher candidates commented on how their prior involvement in various activities facilitated the development of relationships with coaches, mentors and teachers. Many enter the teaching profession with an aim to have a positive impact upon others but the portfolio helped these teacher candidates to identify how others have impacted them!

- *g) students' needs for physical, social, cultural, and psychological security: The e-portfolio helped me reflect on physical, social, cultural, and psychological activities I have partaken in in the last few years. It is amazing how much these activities changed me and helped to mold me to the student I am today. I believe having a good balance of all these "securities" in the classroom really helps a student to learn about who they are and helps them to become who they want to be. h) respecting students' human dignity: Relationships are important throughout life. Now that I reflect on all the relationships I made, just with the activities I included in my portfolio, it amazes me how large my network of "people I know" and "friends" actually is! Having a good network of people that can help you through anything is extremely important and I believe needs to be developed throughout a child's education. T4*

This teacher candidate demonstrated an understanding of how important her own biography is in shaping her as a teacher; biography is an

important aspect of professional identity, a topic that we will explore more fully in the following paragraphs.

> *The ability to see "everything as interconnected and not fragmented" (T7) was one of most exciting outcomes of the portfolio. The portfolio artifacts (including personal non-academic experiences) each required a reflective caption that identified how the artifact was important for the individual as a prospective teacher. This helped the teacher candidates to see the wealth of experience they bring to the classroom, "things (they are) passionate about, things (they are) proud of, and things that make (them) who (they are)" (T9).*

- *Creating my portfolio has allowed me to reflect on my experiences in a very interesting way. Looking at my artifacts in one document gave me the chance to make connections that I had not previously noticed, and helped me to see what some of my strengths are. For example, looking back on the paper I wrote about alphabet books gave me a chance to think about the knowledge that I have acquired about children's literature, both from my English course and my 3 and a half years of work at Calgary Public Library. This knowledge will be useful to me when I am looking for books to use in my classroom, whether for independent reading, research, or bridges in lessons. (T8)*

- *I never really thought about the ways my personal life contributed to how I will be as a teacher. While writing the personal experience portion, I thought deeply about the experiences in my life that have helped shaped me and how they can be related to experiences in the classroom. I work at (a salon) and I have realized that there are parallels between what I believe in the work environment and in my teaching philosophy. I believe in educating people, and providing them with knowledge so that they can make their own educated decisions. As I reflected on that, I learned a little more about myself as a teacher. (M12)*

Many commented on the value of bringing all their experiences together in one document and how much it shaped their view of themselves as prospective teachers – their professional identity. They wrote about their passion for particular subjects including math, physical education, social studies and the arts and how this might increase their eventual marketability. Others wrote about the power of their mentor teacher's feedback for shaping their view of themselves as teachers.

According to Hammerness, Darling-Hammond, & Bransford (2005), professional identity is considered to be a key factor in the motivation, effectiveness, and retention of teachers.

> *Developing an identity as a teacher is an important part of securing teachers' commitment to their work and adherence to professional norms…the identities teachers develop shape their dispositions, where they place their effort, whether and how they seek out professional development opportunities, and what obligations they see as intrinsic to their role.* (p. 383-384)

Teacher candidates who are aware of their strengths and the unique contributions they can make to the profession are better able to target their own professional growth to those priorities they value (Beauchamp & Thomas, 2009).

As previously noted, Dewey (1944) suggests that discovering connections between activities actually changes the quality of the experience. For teacher candidate T8, seeing the relationship between her library work experience, children's literature course, and her school placement helped her identify her own growing understanding of children's literature. This same candidate also saw the relationship between ideas when the portfolio led her to compare two separate journal reflections about the classroom environment. One could argue that identifying such interconnections helps teacher candidates to take broader perspectives on topics like classroom environment, something Loughran (2002) considers important for reflection.

## 4.	Discussion and Implications

As we consider the various levels of reflection analyzed in the portfolios–descriptive, dialogic, and critical–we can conclude that for most teacher candidates the portfolio prompted reflection. As described in the depiction of the dialogic and critical themes, they identified future goals and often articulated the importance of these goals. They regularly drew "original conclusion(s) from their experience, extract(ed) general principles, formulate(d) a personal theory of teaching or (took) a position on an issue… and plan(ned) their own further learning on the basis of their reflections" (Bain et al, 1999, p. 60).

The portfolio format using provincial teaching standards seemed to bring focus to the portfolio without constraining the creators. It helped them to familiarize themselves with the language that teachers use in creating their own professional growth plans and identify how these

standards could inform their future development. When the teacher candidates move into formal practicum in years three and four of the degree, the portfolio will be used to house their own teaching artifacts with reflective captions that show how these demonstrate their competencies in the teaching standards. At this point, they may feel more self-protective and less willing to identify learning goals. We will have to be mindful of Berrill and Addison's (2010) caution that imposed competencies may cause candidates to "lose sight of deeper issues related to formation of their teaching identities and of ways that they enact their beliefs through their teaching practices" (p. 1178).

The surprising prevalence of reflective comments related to "interconnections" has led the faculty to a new focus for our portfolio research–the emergence of professional identity. Rather than simply analyzing how the teacher candidates are self-assessing, we are now analyzing portfolios with an aim to discern how professional identity emerges throughout the degree program.

To further develop an understanding of professional identity, the philosophy statement is now part of the data being considered alongside the self-assessments because these statements usually articulate the beliefs that inform practice. Furthermore, the final self-assessment questions have been revised in response to the research on professional identity: *Compare your artifacts to your teaching philosophy. How do the portfolio artifacts reflect your beliefs and the type of teacher you want to be? What do you still want to learn or practice to better align your teaching philosophy with your practice?*

Korthagen (2004) argues that teacher education often emphasizes the formal knowledge that is required for teaching (e.g., content or pedagogical knowledge) but should focus more upon identity: "becoming conscious of one's own 'personal practical knowledge'" (Clandinin in Korthagen, 2004, p. 81). He presents a model with concentric circles moving from mission at the core, out to identity, beliefs, competencies, and finally behavior with a bi-directional arrow from behavior out to the environment. Teacher education and teacher practice tends to focus on the outer layers–teachers' behavior and competencies and how these interact with the environment. Teachers, particularly teacher candidates, tend to focus on how to deal with the challenges in their classroom and developing the competencies to manage those challenges. Less often considered are the beliefs that may influence their behavior (e.g., a reluctance to be firm with misbehavior if I believe this may undermine the teacher-student relationship) and identity (e.g., what kind of teacher do I really want to be?). At the core is mission–"what is deep inside us that moves us to do what we do" (p. 85). These three central circles have clear influences upon teacher candidates' behavior but they are often less conscious of their influence; reflective exercises such as a well-designed portfolio assignment can draw candidates back to the beliefs, identity and mission that influence their practice. Such exercises often create "an awareness of the tension between an ideal and inhibiting beliefs, feelings and images" (p. 92) that may be at the root of a teaching challenge. Although many teacher candidates showed keen reflective insights about their own professional identity, others primarily listed their learning and goals. Much of the research on portfolios suggests that the framing of the task, particularly the reflective prompts, can have a significant impact on the quality of reflections. I am hopeful that the revised final self-assessment question regarding alignment between teaching philosophy and practice will better prompt this deep reflection.

Furthermore, the prompt for the teacher candidates' philosophy statement has been adjusted to incorporate a personal teaching metaphor. Leavy, McSorley, and Boté (2007) suggest that metaphors "provide insights into ideas that are not explicit or consciously held…(and) tease out connections which might not be made use of by direct questions" (p. 1220). If reflexivity requires examining taken-for-granted assumptions, this task may help candidates to recognize and challenge their assumptions. In their study, Leavy et al (2007) categorized the teacher candidates' metaphors as mainly behaviourist or constructivist. They identified a clear shift during the program from behaviourist metaphors that depicted teaching as a transfer of information to constructivist metaphors that focused on the activity of the learners in building understanding. This suggests that the metaphor construction was a helpful exercise for drawing out their beliefs and that the teacher education curriculum was effective in challenging those beliefs.

Warin et al (2006) suggest that prompts that invite cognitive dissonance are powerful for prompting deep reflection. If their practices do not match professed beliefs, teacher candidates may "activate a richer narrative of self which then functions to accommodate … mismatches between existing and preferred selves" (p. 237). For example, if teacher candidates claim to value inquiry-based learning and student-centered teaching but their lesson plans and teaching artifacts reflect closed tasks with little opportunity for differentiated instruction, there is a clear gap between their "existing and preferred selves." The reflective prompt we have added in the self-assessment invites teacher candidates to consider "*What do you still want to learn or practice to better align your teaching philosophy with your practice?*" In some cases they might lack an understanding about how to actualize those ideals, particularly if they have not seen such approaches modeled in schools or in their university classrooms. This may prompt them to seek professional development opportunities to close this gap.

It is important to note that these teacher candidates are in the first year of a four-year Bachelor of Education program. The objectives of the foundational course are to develop familiarity with the language of education and the issues facing schools. Teacher candidates are

typically not yet expected to reflect upon their own practice but rather to reflect upon their own worldviews and the ideals that they want to inform their practice. Research on teacher efficacy (Lamote & Engels, 2010) suggests that self-efficacy tends to plummet after the first practicum when teacher candidates recognize the challenges of teaching firsthand and are then more likely to develop the defensiveness and rationalizations that Loughran (2002) describes as running counter to reflection. Perhaps our teacher candidates were frank in their self-criticism because they are early in their program; they know they have plenty of time to progress towards these competencies. They may be self-protective and inclined to provide desirable responses when their program completion date nears and they are expected to be more competent. Our goal is to develop reflective habits of mind in the foundation courses so the teacher candidates are better prepared to question themselves when their sense of efficacy is challenged. We must be diligent in urging lifelong learning and the importance of continually reflecting upon practice.

Furthermore, formative assessment from both professors and peers undertaken in a supportive environment can help deepen reflections (Orland-Barak, 2005) and support reflective practice. While the teacher candidates offered feedback to each other at their first checkpoint (including mainly teaching philosophy and personal profile), there was no structured opportunity to do so later in the process when teacher candidates wrote reflective captions on their learning artifacts and their final self-assessment. Some peer collaboration at this stage of the portfolio could help bring the critical eye that Orland-Barak observed in her candidates.

The long term vision of the program portfolio is for teacher candidates to view themselves as teacher inquirers who align with Hattie's (2009) description of exemplary teachers: "They question themselves, they worry about which students are not making appropriate progress, they seek evidence of successes and gaps and they seek help when they need it in their teaching" (p. 261). Fox, White & Kidd (2011) analyzed the portfolio reflections of practicing teachers studying in a Masters program to discern the degree to which the teachers viewed themselves as reflective inquirers of their classroom practice. Levels of reflection ranged from awareness of classroom issues to collecting and analyzing student data to determine needs, taking action, and eventually seeing the implications of their inquiry beyond the classroom. While their study examines practicing teachers rather than teacher candidates, it shows how analysis of classroom practice can lead teachers "to view themselves as teacher-researchers capable of affecting changes that influenced teaching and learning in their classrooms and beyond" (p. 162). To help achieve similar goals, our teacher candidates will participate in a capstone course in the final year of study that will involve a practitioner inquiry research project undertaken in their final practicum alongside their mentor teachers. The goal is to foster inquiry skills so that they enter the profession prepared to see themselves as teacher researchers, capable of documenting student learning and their own professional growth.

To return to Zeichner and Wray's (2001) question, portfolios can indeed be powerful reflective tools depending upon the implementation conditions. Framing portfolios according to provincial competencies can provide a clear sense of the goals to which teacher candidates should aspire provided the portfolio invites reflection upon growth in these competencies and not only evidence of "completion." Provocative prompts can help teacher candidates narrate their own teaching stories, identify their values, question themselves, develop critical self-awareness, and goals for future learning. This reflective self-awareness can be enhanced through peer and instructor feedback that illuminates alternative perspectives and prevents the slide into defensive rationalizations or hopelessness.

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