

# Piloting a Web-based Practicum Support Tool: Associate Teachers' Perceived Benefits and Drawbacks

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*This pilot study explored how a small group of associate teachers responded to a web-based learning tool created specifically to support them in mentoring teacher candidates during the practicum component of an initial teacher education program in Southern Ontario, Canada. The learning tool's content drew from the teacher education literature, and its development was grounded in constructivist learning theory, web-based learning literature, and reflective practice. Associate teachers found the learning tool flexible, convenient, easy to use, and although they appreciated the non-directive nature of the learning tool, finding time to access and interact with the tool proved challenging. Associate teachers benefited from accessing and interacting with the learning tool, to varying degrees depending on their prior experiences, with improving feedback processes and practices, supporting teacher candidate planning processes, and facilitating teacher candidate induction emerging as three key areas of enhanced understanding and practice. Two key drawbacks of the learning tool included lack of human interaction, and sufficient time to interact with the learning tool more deeply.*

*Cette étude pilote s'est penchée sur la réaction d'un petit groupe d'enseignants associés travaillant dans le sud de l'Ontario, au Canada, face à un outil d'apprentissage électronique conçu spécifiquement pour les appuyer dans leur mentorat de stagiaires. Le contenu de l'outil d'apprentissage est tiré de publications sur la formation des enseignants, et son développement repose sur la théorie d'apprentissage constructiviste, la documentation d'apprentissage en ligne et la pratique réflexive. Les enseignants associés ont trouvé l'outil d'apprentissage souple, pratique et facile d'emploi. Ils ont apprécié la nature non directive de l'outil d'apprentissage, mais ont signalé qu'ils avaient éprouvé de la difficulté à trouver le temps d'accéder à l'outil et d'interagir avec celui-ci. Les enseignants associés ont profité de l'accès à l'outil et de l'interaction avec celui-ci, à divers degrés en fonction de leurs expériences préalables. Les trois domaines clés où les connaissances et la pratique se sont améliorées sont les suivants : de meilleurs pratiques et processus de rétroaction, un soutien accru aux processus de planification des étudiants en pédagogie et une intégration facilitée des étudiants en pédagogie. Deux inconvénients principaux de l'outil d'apprentissage se sont manifestés, notamment l'absence d'interaction humaine et un manque de temps pour interagir avec l'outil de façon plus étendue.*

## **Introduction**

### **Supporting the Associate Teacher**

Teacher candidates, or students enrolled in pre-service teacher education programs, perceive the field experience or practicum component of the programs as a critical, if not the most critical, aspect of pre-service teacher education programs. The associate or cooperating teacher—who is the classroom teacher who hosts and works with teacher candidates during the practicum—plays a fundamental role in the teacher candidate's growth and development as a teacher (Allen, 2003; Beck & Kosnik, 2000; Crocker & Dibbon, 2008; Darling-Hammond, 2006). It is somewhat troubling, however, that there appears to be a disconnect between pre-service teacher education institutions and practicum settings, specifically with associate teachers. In particular, there tends to be a lack of communication and collaboration between the pre-service teacher education programs and practicum settings (Allen, 2003; Crocker & Dibbon, 2008; Levine, 2006), and recommendations for increased informal and formal supports for associate to support them as they carry out this important role is stressed in the literature (Beck & Kosnik, 2000; Darling-Hammond, Hammerness, Grossman, Rust, & Shulman, 2005; Levine, 2006; Rippon & Martin, 2006; Sanders, 2005; Volante, 2006).

The benefits of providing informal supports such as regular onsite meetings, guided discussions, and visits with both the associate teacher and teacher candidate (Broad & Tessaro, 2010; Borko & Mayfield, 1995; Levine, 2006), or more formal supports such as courses or workshops (Coulon, 1991; McIntyre & Killian, 1987; Giebelhaus & Bowman, 2002; Veenman, Denessen, Gerrits & Kenter, 2001) have been well documented in the literature. For example, informal supports resulted in enhanced communications, collaboration, and partnerships between academic and practicum settings (Beck & Kosnik, 2000; Levine, 2006; Sanford & Hopper, 2000), provided a form of professional development for the associate teacher, and strengthened the overall practicum (Beck & Kosnik, 2000; Broad & Tessaro, 2010; Levine, 2006; Sanford & Hopper, 2000). More formal courses, workshops, and coaching programs also resulted in favourable outcomes, including positive enhancement of teacher candidate planning, classroom instruction (Giebelhaus & Bowman, 2002; McIntyre & Killian, 1987), reflective practice (Giebelhaus & Bowman, 2002; Ross, 2002; Veenman et al., 2001), general interaction and involvement with students (McIntyre & Killian, 1987), feedback processes (Coulon, 1991; Kent, 2001; McIntyre & Killian, 1987; Veenman et al., 2001), and developing autonomy (Veenman et al., 2001). Unfortunately, a lack of resources, including time, finances, willingness, and human capacity often prevent pre-service teacher educations from providing these critical partners with support and opportunities to learn about the important associate teacher role (Beck & Kosnik, 2000; Coulon, 1991; Hastings & Squire, 2002; Kahn, 2001; Kent, 2001; Ramanathan, & Wilkins-Canter, 1997; Veenman et al., 2001).

### **Purpose**

One alternative strategy to provide associate teachers with supports and learning opportunities regarding the critical role of the associate teacher is a web-based learning tool. At the time of this study, there are no other known learning tools for associate teachers; as such, this paper explores how associate teachers work with a pilot web-based learning tool created purposely to support them as they work with teacher candidates during the practicum. More specifically, this

paper examines the question: *What are associate teachers' perceived benefits and/or drawbacks in accessing and interacting with a web-based learning tool created specifically to support them as they carry out their role of associate teacher?*

### **Theoretical Frameworks**

The theoretical constructs that frame this paper also served as the foundation for the development of the actual learning tool. The two key theoretical positions regarding constructivist learning and reflection are summarized below.

#### **Constructivist Learning**

Many varying, complementary, and sometimes contradictory conceptions of constructivist learning populate the literature (Phillips & Soltis, 2004; Phye, 1997; Fosnot, 2005). This study draws primarily from the work of Jonassen, Hernanadez-Serrano, and Choi (2000), who describe constructivism as the merging of various learning theories such as situated learning, case-based reasoning, and activity theory to name a few. Jonassen et al. (2000) describe the construction of knowledge as an active process of meaning-making by the individual or "natural learner", who attempts to make sense of experiences based on a schema informed and influenced by prior experience, knowledge, and societal factors (p. 107).

Constructivists believe that meaning making (i.e., meaningful learning) involves, "willful, intentional, active, conscious, constructive practice that includes reciprocal intention-action-reflection cycles. Intentionality, activity, and reflection are essential to meaningful learning, especially in complex and new domains." (Jonassen et al, 2000, p. 111)

**Web-based learning tools.** This paper adopts the term "web-based learning tool" put forth by Kay, Knaack, and Petrarca (2009) as an alternative to the term "learning object", for which there remains a lack of consistency and consensus for a unified definition within the abundance of learning object literature (Downes, 2004; McGreal, 2004; Wiley, 2000). Web-based learning tools refer to "reusable, interactive web-based tools that support the learning of specific concepts by enhancing, amplifying, and guiding the cognitive processes of learners" (Kay & Knaack, 2005, p. 231). After the initial development, web-based learning tools are reusable by multiple users, and therefore are cost-effective (Downes, 2004; McGreal, 2004; Wiley, 2000). Web-based learning tools are also accessible over the Internet, making them flexible and convenient tools for user access, regardless of time or place (Downes, 2004). This combination of flexibility and accessibility allows users to control their learning processes (Kay & Knaack, 2005) by accessing and interacting with such learning tools based on their own individual needs (Downes, 2004).

By framing the design of the web-based learning tool within learning theory, a well-designed web-based learning tool has the potential to promote learning (Ally 2004a; McGreal, 2004; Wiley, 2000). Anderson and Elloumi (2004) maintain that constructivist online learning environments situate learning within real-life contexts that provide users with opportunities to apply knowledge to practical situations (Ally, 2004b). Ally (2004b) further stresses the need for users with potentially varying perspectives and experiences, to engage in activities that allow them to apply knowledge to practical situations, using collaboration, reflection, and critical thinking. To enhance knowledge construction, Jonassen et al. (2000) also suggest that online learning environments provide users with interactive activities, demonstrations, relevant

examples, simulations, feedback, reflective questions, and a variety of approaches in presenting material (i.e. text, visual, audio).

## **Reflection**

Reflection is an essential component of the learning process, and serves as another key construct that frames this work, drawn largely from the work of Donald Schön (1983, 1987), and John Dewey (1916, 1933). Dewey (1933) described reflective thinking as an "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends" (p. 6). When the "thinker" experienced a perplexing sort of situation, the individual worked through this "state of doubt, hesitation" via a series of thinking processes in order to resolve the state of puzzlement (Dewey, 1933, p. 9). Schön (1987) considered reflective practice a critical component in the growth of professionals. He coined the terms, "reflection-in" and "reflection-on action" to describe the processes essential to the "acquisition of artistry" within a professional's domain (p. 31).

### **The Associate Teacher Web-based Learning Tool (ATLT)**

Theoretical and research-based constructs served as the foundation for both the content of the Associate Teacher Learning Tool (ATLT) and the manner in which the content was organized within the tool. Constructivist learning and reflective theories, combined with the web-based nature of the learning tool, guided the ATLT's navigation, interactions, and design. This meant that the development and structure of the learning tool needed to consider the users' perceptions of the associate teacher role, the teacher candidate, and the practicum itself as a basis for knowledge construction. The ATLT incorporated strategies discussed in the previous section so that the classroom teachers would examine and reflect upon their understanding and practices as associate teachers, engage in problem solving activities, and critically consider the questions and content within the learning tool. Teacher education literature pertaining to associate teachers and practica informed the content of the learning tool including the copy or text, interactive activities, reflective questions, and videos. To summarize, the web-based learning tool consisted of:

- An administrator issued login requirement for users
- Forty-nine flash-based pages, organized around five key themes, synthesized from pre-service teacher education literature:
  - The associate teacher role (the importance of the associate teacher in teacher candidate learning; multifaceted elements of the associate teacher role);
  - Getting prepared (rationale and ideas for teacher candidate induction into school and classroom);
  - Planning (rationale and ideas for how associate teachers might assist teacher candidates in planning meaningful learning experiences for students);
  - Feedback (importance and characteristics of effective feedback, as well as examples of approaches to providing teacher candidates with effective feedback); and

- Praxis (the importance of the interplay of theory and practice in the learning to teach process).
- Opportunities for users to learn more about the critical associate teacher role, and how associate teachers might support teacher candidates via a variety of interactive learning activities including:
  - Video clips (using avatars and human actors) of:
    - Vignettes of common problems;
    - Testimonials from pre-service teacher education faculty, teacher candidates, and associate teachers (sharing experiences based on five themes of ATLT); and
    - Informational and/or procedural types of content.
  - Self-check activities such as:
    - Drag and drop;
    - Click and check;
    - Roll-overs; and
    - Concept attainment activities.
  - Reflective activities that involved:
    - Question prompts for consideration;
    - Responding to video clips, case studies (by filling in text fields);
    - Contributing ideas and suggestions (by filling in text fields);
    - Comparing and contrasting (by filling in text fields); and
    - Sharing ideas with others on external wiki discussion board.
- Components specific to the pre-service teacher education program where this research occurred (e.g., forms and contacts specific to the university);
- Broad and specific ideas that reflect a variety of best practices (as per the associate teacher and practicum literature); and
- Multiple perspectives that highlighted a variety of positions on the various themes and topics, rather than stressing one singular perspective of implementing the associate teacher role.

## **Methods**

### **Context**

This study occurred within a pre-service teacher education program at a university located in the Greater Toronto Area (GTA) during the first of three practicum placements of the program. The first practicum consisted of four weeks or 20 school days, and it occurred in two segments:

one week during the first week of school and the remaining three weeks in October.

### **Participants**

This study's target population consisted of approximately 270 associate teachers within 10 school boards in Southern Ontario. These K–8 classroom teachers hosted the 270 respective teacher candidates participating in the first practicum as part of the Bachelor of Education program requirements in the pre-service teacher education program. Depending on the school board, associate teacher requests are made via the central school board or via the school principal. Participant selection occurred via maximum variation purposive sampling (Merriam, 1998), to obtain and maximize a wide variety of participants reflecting the associate teacher population. Of the 91 invited associate teachers from the two school boards who host the most number of teacher candidates, 23 associate teachers initially agreed to use the web-based learning tool, and of those users, 14 associate teachers agreed to participate in semi-structured interviews. To contextualize the associate teachers' perspectives regarding the perceived benefits and challenges of engaging with the learning tool, some demographic data is now presented. There was considerable variability amongst the fourteen interview participants' experiences in the classroom, with their associate teacher experiences, and in their uses of web-based learning. As a group, the associate teachers had between two and twenty-eight years teaching experience and taught in K–6 classrooms at the time of the study. Their previous teaching experiences included special education, school board consultants, and teaching in the intermediate division (i.e., grades 7 and 8). Their experiences as associate teachers also varied in that three of them had never taken on the role, while the other eleven interview participants had previously served as associate teachers between one and twenty-six times.

### **Data Collection**

The twenty-three associate teachers received individual log in information one week before the teacher candidates arrived, and had access to the web-based learning tool until the end of the final segment of Field Experience I, totaling a nine-week access period. Associate teachers accessed the learning tool in any manner they chose during the nine-week access period. Fourteen of the twenty-three associate teachers accepted invitations to participate in semi-structured interviews which occurred within a two-week period following the completion of the practicum. Individual, audio recorded interviews ranged from 60 to 90 minutes in length, and occurred at locations that were convenient and comfortable for the interviewees (e.g., their classrooms before or after school).

### **Data Analysis**

To get a holistic sense of the interviews, early data analysis began with an initial reading of the transcribed interviews (Creswell, 2004; Patton, 2002). Although descriptive and interpretive codes (Miles & Huberman, 1994) arose in a somewhat inductive manner, the study's foundational theoretical constructs served as a flexible guide for marking portions of the text. Pattern-coding (Miles & Huberman, 1994) was then used to explore convergent and divergent topics (Patton, 2002), and the large number of preliminary descriptive and interpretive codes was reduced to a smaller number of broader categories and themes. Cognitive mapping and

qualitative data analysis software facilitated this multi-step data reduction process. To enhance reliability of the analysis, a colleague checked the codes for consistency and fit. Lastly, a matrix cross-categorized the multiple participant demographic data with the interview data as a way to organize, display, and aggregate results from the multiple participants (Yin, 2003).

## **Findings**

Key findings regarding associate teachers' perceived benefits and drawbacks in accessing and interacting with the ATLT are organized around 1) topics related to ATLT content and contexts within which the content areas were identified by participants; 2) nature of users; 3) learning tool components; and 4) limitations.

### **Topics Related to ATLT Content and Contexts within which Content Areas were Identified**

Associate teachers' responses to perceived benefits and drawbacks in accessing and interacting with the ATLT centred on four key content areas of the ATLT: 1) perceptions of the associate teacher role; 2) feedback processes and the importance of feedback; 3) planning processes and the importance of planning instructional experiences; and 4) inducting the teacher candidate into the classroom and school communities. The manner in which associate teachers referred to these four content areas, however, varied in scope and also revolved around four main contexts, including: 1) reflection of a particular content area; 2) reminder of a particular content area; 3) reinforcement of a particular content area; and 4) adoption and implementation of a particular content area. Table 1 cross categorizes ATLT content areas identified by associate teachers as beneficial to them with contexts within which the topic areas were also identified by associate teachers.

To organize and display the findings, the four key ATLT content areas identified by participants were cross-categorized with the four identified contexts. Table 1 displays a matrix of the ATLT content areas identified by the participants as beneficial, cross-categorized with the contexts within which the associate teachers discussed the identified ATLT content. The table also displays the total number of participants who perceived that accessing and interacting with the learning tool influenced one or more of the identified topic areas, as well as the total number of comments regarding that particular topic area. Some participants indicated multiple areas of learning, which explains the larger number of comments with respect to number of participants.

For example, as seen in Table 1, eleven associate teachers made comments related to the perceptions of the associate teacher role, but the manner in which they discussed the perceptions of the associate teacher role fell into one or more of the four contexts (as described above). Of the eleven associate teachers who specifically commented on their perceptions of their own role, four of them indicated that interacting with the ATLT prompted them to reflect more deeply on the importance of the associate teacher role in teacher candidate learning while in the associate teacher's classroom. Three of the participants mentioned that interacting with the tool served as a good reminder of the multifaceted components of their role. Five associate teachers indicated that they were pleased to see their ideas and practices related to the complexity of carrying out their responsibilities embedded within the ATLT, and that interacting with the learning tool positively reinforced their notions and activities. Lastly, three associate teachers stated that pre-ATLT-use, they did not consider their own role as associate as critical to

teacher candidate learning as they did after interacting with the ATLT. These participants reported new and more valued perceptions of their contributions as an associate teacher.

As seen on Table 1, the content area most referenced by associate teachers was related to the importance and characteristics of effective feedback, as well as examples of approaches to providing teacher candidates with effective feedback (twenty comments). This was followed by sixteen comments that specifically referenced planning processes and fifteen comments referencing teacher candidate induction and perceptions of the associate teacher role. The most widely referenced context within which content areas were mentioned had to do with adopting and implementing particular content areas (twenty-two comments). It is important to note, however, that eleven of the twenty-two context-related comments referenced adopting and implementing feedback processes. The next most widely referenced contexts within which ATLT content areas were mentioned was the reinforcement of practices related to topic areas (18 comments), followed by feedback about the ATLT reminding associate teachers, and prompting reflection on particular topics (fourteen and twelve comments, respectively).

Table 1

*ATLT Content and Contexts Identified by Associate Teachers' (Post ATLT-use) as Perceived Benefits*

Content Areas Identified by participants	Contexts Within Which Topic Areas were Identified by Participants: Interacting with the learning tool:				Total # of participants (out of 14) commenting on particular topic area:	Total # of comments regarding identified topic area:
	<i>Prompted reflection</i> on topic area:	<i>Reminded of</i> practices or knowledge related to topic area:	<i>Positively reinforced</i> practices or knowledge related to topic area:	<i>Prompted the adoption and implementation</i> of topic area:		
Perceptions of the associate teacher role	4	3	5	3	11	15
Feedback: processes and importance	4	2	3	11	13	20
Planning: processes and importance	1	6	5	4	11	16
Teacher candidate induction	3	3	5	4	11	15
Total # of comments regarding the action elicited by the learning tool	12	14	18	22	NA	NA



## **Nature of User**

Associate teachers specified the type of users they believed would most likely benefit from accessing and interacting with the ATLT. All fourteen participants indicated that any associate teacher would benefit from accessing and interacting with the learning tool, regardless of experience, depending on the individual associate teacher's needs. Ten of the participants perceived that new or first-time associate teachers would particularly benefit from engaging with the learning tool, and three suggested that associate teachers who did not have positive experiences as teacher candidates themselves should access and interact with the ATLT. Lastly, the majority of associate teachers indicated that teacher candidates and visiting faculty advisors would also benefit from such a learning tool. The following are examples of comments regarding recommended ATLT-users:

I think anyone who is an associate teacher should go through it. Because some people that I'd heard doing things that maybe they shouldn't have been having the candidates do. If they'd sort of have gone through the first section, I think they really would have understood where they were coming from, and not just laid on stuff. (AT11)

If you are brand new to being an AT, I think it would definitely go through all the things. Oh yeah, I gotta do this, I gotta do that...you know. (AT8)

## **Learning Tool Components**

As the interviews progressed, associate teachers often referred to various components or features and sections of the ATLT that prompted them to learn more, or reflect upon a topic. The components most frequently referenced in their interviews included videos, navigation, flexibility/convenience, resources, and the nature of the interactive activities. Each of the fourteen participants referred positively to one or more of the twenty-one video clips (i.e. vignettes, testimonials, procedural/informational) embedded throughout the ATLT within the context of their learning. The video clips most referenced included the videos created with avatars or computer generated actors. Examples of video-related comments regarding how the videos benefited the associate teachers include:

I would say reinforced, and just—and nice to get it from a video perspective as opposed to a book as well. (AT2)

Yeah, and the videos help... (AT7)

I found the videos really helpful. (AT15)

Ten of the associate teachers positively referenced the ATLT's navigational capabilities in their interviews, commenting on its accessibility in moving between various sections. Eight of the participants referenced the flexible and convenient nature of the learning tool. They welcomed the opportunity to access the ATLT around their own personal schedules, as long as they had an Internet connection. Examples of such comments made by associate teachers are included below:

I could do it sitting on my couch at home or anywhere I need it. And—and, I could access it and then go back to it two weeks later when I—you know; "Now it's time I have to start giving Cindy feedback. What does it say on there?" (AT12)

And uh, doing it in my pyjamas at home if I wanted to, or [laughter] You know? (AT17)

Associate teachers identified the praxis section, which highlighted the interplay of theory and practice within teaching and learning contexts of the ATLT as the least useful section, however, eight of the fourteen associate teachers felt strongly that the section remain in the ATLT for those users who might require or desire access to the theoretical and practical resources.

## **Limitations**

Participants reported a lack of time as main challenge of accessing and interacting with the learning tool. Eleven of the fourteen participants indicated that time constraints prevented them from accessing more sections of the learning tool and/or accessing the tool for a greater amount of time. Related to this issue of time, two associate teachers also commented on how challenging it would be to get associate teachers in general to engage with the tool, given the busy nature of classroom teachers and based on their experiences with other staff members, the perceived lack of understanding of their roles as associate teachers.

Yes, you give us the stuff but we don't have time to read it and it is pretty quick and easy... (AT1)

I don't know how you're going to get others to use it...they are kind of swamped and busy with everything that gets dumped on us. (AT6)

Participants also provided several suggestions for future versions of the learning tool, and in doing so, uncovered additional limitations. The most frequent suggestion had to do with human interaction. Associate teachers felt that teacher candidates, faculty advisors, and others involved with the practicum should also have access to the ATLT. They sought some type of medium to communicate with someone from the university in an easy and timely fashion depending on the associate teacher's needs. Participants additionally indicated that the ATLT should include some type of embedded discussion board so that they could connect with other associate teachers (or faculty advisors or other university liaison) for support, clarification, and advice.

## **Discussion**

The discussion centres on three themes: 1) the web-based nature of the learning tool; 2) reflective practice; and 3) enhanced understanding and practices.

### **Web-Based Nature of the Learning Tool**

Consistent with the literature, participants' perceived benefits regarding the web-based nature of the learning tool and its various components reflected it's being flexible, accessible, convenient, and easy-to-use (Ally, 2004a; Downes, 2004). The participants also demonstrated

that depending on their individual needs, they accessed and found some components of the learning tool more helpful than other components. The varying follow-up actions and new meaning making identified by the individual participants as seen in Table 1, demonstrates the individual nature of the perceived learning that occurred. This also reflects the constructivist nature of such a web-based learning tool (Jonassen et al, 2000), where users address their own personal needs (Downes, 2004), and guide their own individual learning (Kay & Knaack, 2005).

Although there was an asynchronous discussion board hosted outside of the learning tool on a wiki-based website, associate teachers still identified the lack of human interaction within the ATLT as a limitation. While the discussion board served as a mechanism for users to interact with one another, there were no interactions logged. Interviewees indicated that they either felt uncomfortable participating in an online discussion forum (even though it was password protected) or they felt that logging onto an additional site hyperlinked directly from the learning tool to interact with others was too cumbersome. The expressed desire for increased human interaction directly within the learning tool with members of the faculty of education as well as other associate teachers reflects the importance of relationships with and amongst practicum partners. Dillon and O'Connor (2010) identified such partnerships as necessary elements for successful field experiences. The revised version of the learning tool includes additional features to enhance digital interactions and communications amongst associate teachers, faculty advisors, faculty, and teacher candidates to encourage relationship building.

### **Reflective Practice**

As previously described, the learning tool incorporated interactivity by providing the associate teachers with various activities including embedded open-ended types of questions to consider or reconsider to promote reflection (Ally, 2004b). This provided associate teachers with opportunities to contemplate their professional knowledge (Schön, 1987) with respect to the topics based on the practicum literature contained within the learning tool. Eleven of the fourteen participants indicated that accessing and interacting with the learning tool prompted them to reflect upon, remember, or reinforce a particular concept. By engaging with the ATLT, most of the associate teachers indicated that it prompted them to reflect on both the importance of the associate teacher role, and its multifaceted components. Examples of such comments include:

Actually, I think what it made me do was it made me reflect on how I am as a teacher, how I plan; you know what I mean? To be honest my planning was more thorough this term than—and I mean—I don't mean the delivery of my lessons, but the—you know, the written reflection and the written planning that I did was more thorough because I took a look at, you know, what was, not necessarily expected, but what was being described on your tool. (AT12)

Like, you know, like, that you had the—that you had the opportunity to do this, because I did find this thought provoking. (AT14)

It just got me reflecting on how I did that a little bit more. Yeah. I don't know if it was the examples or really...I don't know what it was...but when I sat and read through that I thought yup that is something to think about. (AT1)

These are encouraging findings because reflection is essential for meaningful learning to occur (Jonassen et al., 2000), and from a professional perspective, reflective practice is critical for teacher development (Dewey, 1933; Schön, 1987), playing an important role in the professional's "acquisition of artistry" (Schön, 1987, p. 31). Because the actions identified by the associate teachers were based on their self-reported perceptions, the extent to which this actually occurred is unknown, and merits further exploration in future work.

### **Enhanced Understanding and Practices**

In addition to reflecting on the practicum and various aspects of the associate role, collectively, the associate teachers "turned...over in their mind" (Dewey, 1933, p.3) topics related to three key areas: 1) supporting teacher candidate planning processes; 2) teacher candidate induction practices; and 3) feedback practices and processes.

As seen in Table 1, most associate teachers reported that their strategies to support teacher candidate planning and induction did not change drastically. What is interesting, however, is that accessing and interacting with the ATLT did provide associate teachers with reminders and reinforcement of strategies to create a safe and supportive learning environment for the teacher candidate, and to support teacher candidate planning processes. Eleven of the fourteen participants commented specifically on teacher candidate induction as an area of personal learning, and four actually adopted new practices related to welcoming and inducting teacher candidates into the classroom and school with the purpose of creating a safe learning environment for the teacher candidate. The associate teachers' reference to the provision of planning and support is hopeful in that Darling-Hammond et al. (2005) describe the ideal practicum placement as one where

... student teachers are supported by purposeful coaching from an expert cooperating teacher in the same teaching field who offers modeling, co-planning, frequent feedback, repeated opportunities to practice, and reflection upon practice while the student teacher gradually takes on more responsibility" (Darling-Hammond et al., 2005, p. 409)

Another promising finding is how the majority of the associate teachers indicated that their engagement with the learning tool significantly influenced their practices relating to feedback. Eleven of the fourteen associate teachers reported they actually incorporated new/different attributes of feedback (i.e., collaborative, constructive, frequent, specific), and/or implemented new/different strategies to structure the feedback (as seen on the learning tool). This is especially important considering that the perceived influence on feedback was reported by associate teachers who had a varying number of years of teaching experience, from first-time associate teachers to associate teachers with many years of previous experience working with teacher candidates.

This is also encouraging because exemplary practicum components of strong pre-service teacher education programs included the provision of ongoing and constructive feedback practices (Feiman-Nemser, 2001; Darling-Hammond & Baratz-Snowden, 2007; Levine, 2006). The provision of ongoing, constructive, and collaborative feedback, is one of the critical components of the associate teacher role (Beck & Kosnik 2002; Borko & Mayfield, 1995; Darling-Hammond et al, 2005; Giebelhaus & Bowman, 2002; Hobson, 2002), and recommendations to improve the role included increased observations and provision of feedback to teacher

candidates (Borko & Mayfield, 1995). Lastly, the associate teachers' perceptions that the ATLT significantly influenced their feedback-related practices is consistent with outcomes from previous work where formal and/or informal supports were provided for associate teachers, and resulting in enhanced feedback processes by associate teachers (Coulon, 1991; Giebelhaus & Bowman, 2002; Kent, 2001; McIntyre & Killian, 1987; Veenman et al., 2001). A comparison of the various support structures from previous training programs lies outside of this paper's scope, however, the emphasis on feedback related processes and practices from earlier work is consistent with this study.

Each of the 14 interviewed associate teachers expressed that the learning tool might enhance understanding and/or practices of a variety of associate teachers regardless of experience. This was somewhat unexpected, since not all of the associate teachers adopted or implemented new and/or different practices or perceptions. It does, however, reflect the associate teachers' perceptions regarding the individual nature of learning, and their awareness of learners' varying needs in general.

### **Conclusions and Future Research**

This pilot study explored associate teachers' perceived benefits and/or drawbacks in accessing and interacting with a web-based learning tool created specifically to support them as associate teachers. Three main conclusions can be drawn from this work, and are now presented with implications for future research.

#### **Bridging the Disconnect**

The web-based learning tool might have helped address or partially bridge the well documented disconnect between the pre-service teacher education programs and the practicum with respect to communication and collaboration between pre-service teacher education program and associate teachers' enacting this role. The benefits identified by participants regarding perceptions of the associate teacher role, feedback processes, planning processes, and teacher candidate induction demonstrated how to varying degrees, associate teachers either reflected upon, were reminded of, or felt positively reinforced about these topics central to a successful practicum. The self-reported adoption of new knowledge and/or practices after interacting with the learning tool is especially hopeful, in that this implies that associate teachers connected the theoretical, or research-based content of the learning tool with their practices. The self-reported common areas of new learning warrant further exploration in future research regarding how the self-reported learning influences teacher candidate learning and growth during the practicum.

A key challenge for future research will more than likely be related to getting associate teachers to access and interact with the learning tool. The fact that only 23 out of 91 associate teachers volunteered to participate in this study is not very encouraging, and the participants who self-selected to participate may not be representative of the broader associate teacher population. The 14 interviewed participants themselves identified time as a key limitation in interacting with the learning tool, and two participants also indicated how challenging it would be to get other associate teachers to log on to the site. Exploration of underlying reasons for associate teacher resistance or lack of willingness or capacity to interact with a support tool is also worthy of deeper exploration.

## **Professional Development for Teachers**

It appears that the ATLT provided a flexible form of support and professional development for associate teachers, to varying extents, based on their individual needs. It was clear that participants would have preferred an increased human component or presence of other associate teachers or representatives from the pre-service teacher education program. Furthermore, participants' feedback regarding making the learning tool available to other members of the practicum, including faculty advisors and teacher candidates, could potentially allow for deeper exploration of perspectives and enhanced understanding of the complexity of the associate teacher role, and teaching and learning in general. Based on these findings, a revised version of this tool has been developed; and funded by the Canadian Social Sciences and Humanities Research Council for knowledge mobilization purposes. The revised tool is accessible to anyone with an interest in pre-service practica, and additional research regarding how associate teachers, faculty advisors, instructors, administrators, and teacher candidates use and respond to the revised learning tool is currently underway.

## **Digital May Be the Way to go, But it's not a Panacea**

Lastly, this study demonstrated positive outcomes in supporting associate teachers in their critical role as they work with teacher candidates via a digital learning tool, however, implementation of digital learning tools should not be considered a panacea to supporting associate teachers as they carry out their critical role. As seen in this study, the benefits of creating digital learning experiences included flexibility and convenience, however, faculties of education considering online supports for practicum partners need to also critically consider the limitations of a digital approach. For example, resource-strapped faculties of education need to carefully consider how web-based support is delivered. Simply placing a handbook or 'dumping' content on a website does not necessarily enhance associate teachers' learning. As noted by several online learning scholars, instructional components of a learning object or tool must be carefully considered, otherwise the learning tool is simply a tool filled with content (Ally 2004a; McGreal, 2004; Wiley, 2000). "Instructional design theory, or instructional strategies and criteria for their application, must play a large role in the application of learning objects if they are to succeed in facilitating learning" (Wiley, 2000, p. 9). Creating learning tools with research and theory based content and structure requires resources and skilled personnel, which may be a challenging constraint when implementing such tools in faculties of education.

Based on the findings of this pilot study, it appears that a web-based learning tool, grounded in a theoretical framework of constructivist learning theory, reflection, web-based learning literature, and research-based practicum literature, may serve as a flexible and convenient way to provide support and professional development to associate teachers. This is indeed promising, and warrants deeper investigation with a revised version of the learning tool, a more diverse group of users, and greater number of participants, to explore more deeply the potential to support practicum partners and outcomes within a web-based context.

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