Reflecting on Literacy Practices: Using Reflective Strategies in Online Discussion and Written Reflective Summaries

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Abstract

Within the context of an undergraduate literacy methods course, preservice teachers received opportunities to read engaging and meaningful text that challenged their thinking (McVee, Baldassarre, & Bailey, 2004) and respond to specific prompts through an online dialogue discussion and written reflective summaries. This article describes the process these preservice teachers engaged in as they discussed and reflected on their experiences in a language arts class. In the online dialogue, the preservice teachers engaged in reflective strategies that included clarifying, enhancing, providing evidence, challenging, and different thinking. As they dialogued and wrote reflective summaries, these students deepened their comprehension of literacy instruction and enhanced their meta-cognitive awareness of instructional practice as teachers of literacy. (Keywords: reflective practice, online dialogue, literacy practices)

One of the most important ways to encourage reflection is to give students a chance to think critically about their learning experiences, talk about them, listen to and consider others' perspectives, and write about their experiences and perceptions (Beed, Ridgeway, Brownlie, & Kalnina, 2003). Providing opportunities for reflection is essential for deepening learning experiences. This article describes the process that two groups of preservice teachers engaged in as they discussed and reflected on their experiences in a language arts class. Within the context of an undergraduate literacy methods course, preservice teachers received opportunities to read engaging and meaningful text that challenged their thinking (McVee, Baldassarre, & Bailey, 2004) and respond to specific prompts that the instructor constructed through an online dialogue discussion and written reflective summaries.

The discussion board served as an online community that students used to engage in deep thinking about literacy instruction. There is evidence to support online communities as strong forums for student learning that may be even more effective than the traditional talk that can be found in classrooms (Grisham & Wosley, 2006).

As the preservice teachers engaged in the online dialogue, they also engaged in a number of reflective strategies. Through the use of qualitative inductive methodology, the strategies of clarifying, enhancing, providing evidence, challenging, and different thinking emerged as we engaged in a systematic approach to arrive at these conceptual categories from within the data. These concepts were related to each other and provided a theoretical explanation of the actions of the preservice teachers in this study. We discovered that the preservice teachers engaged in these strategies repeatedly, which ultimately served to deepen their comprehension of literacy instruction and enhanced their metacognitive awareness of instructional practice as teachers of literacy.

Literature Review

As far back as 1933, Dewey introduced the concept of reflection; he considered it to be an active and deliberative cognitive process that involves sequences of interconnected ideas that take into account underlying beliefs and knowledge (Hatton & Smith, 1995). Dewey introduced the premise that teachers should be encouraged to become thoughtful and alert students of education, and argued that teachers should continue to grow in reflection (Dewey, 1916). When preservice teachers participate in the actual experience of teaching and reflecting on their experiences, there is likely to be a connection between theory and practice. Learning experiences are structured to follow the learner's zone of proximal development (Vygotsky, 1978); responsibility and challenge are added gradually as the learner is ready. Schon (1983, 1987) expanded Dewey's notion of reflection and argued that the truly reflective practitioner must augment technical expertise with personal insights and artistry. He referred to professional artistry as "the kinds of competence that practitioners sometimes display in unique, uncertain, and conflicted situations of practice" (Schon, 1987, p. 22).

Calderhead (1993) and others explored the nature of reflective practice. They found that reflective teaching encourages teachers to analyze, discuss, and evaluate practice, all of which are part of professional development. Teachers, through reflection, can become aware of their intuitive knowledge and engage in problem solving that helps to strengthen teaching ability (Vacca,

Vacca, & Bruneau, 1997) and promotes professional growth. Loughran (2002) asserted, "reflection is effective when it leads the teacher to make meaning from the situation in ways that enhance understanding so that he/she comes to see and understand the practice setting from a variety of viewpoints" (p. 36).

Teacher education programs continue to promote reflective practice, and the literature reiterates that preservice programs are practicing reflective strategies. Richardson and Morgan (2003) assert that reflection can help us think critically about what we have learned and have yet to learn, make us more likely to use the knowledge, and result in new thought becoming the basis for further action. Writing is commonly used to promote thought through reflections. As preservice teachers shape their experiences through written journals, they are able to make these experiences sharper. In one study of 31 preservice teachers, Lee (2007) found that response journals provided concrete opportunities for preservice teachers to routinely participate in reflective thinking and were extremely beneficial in teacher preparation.

Internet communication, or writing online, is among the new literacies that have evolved in today's technological world. According to the International Reading Association (2009), Internet communication technologies (ICTs) are contributing widely to the ways that students learn. ICTs have begun to be understood as "new literacies" (International Reading Association, 2009). ICTs within new literacies promote collaboration and engage students in online communities where the collaborative nature of reading, writing, and thinking is increased (Leu, Kinzer, Coiro, & Cammack, 2004). As writing leads to explicitness, online dialogues act as the portal for student writing and engages students in thoughtful communication with others in which they must analyze and synthesize their own thoughts and experiences in the context of the online community. The complexities required of students who engage in online communication promote reflection about content. According to Wilson and Stacey (2004), new literacies have changed the face of collaboration. ICTs provide a common space for individuals to collectively interact and synthesize meaning. Stacey (1999) found that during small-group interactions, students were able to learn effectively from a distance. This occurred because students processed collaboratively, shared multiple perspectives, and got feedback for their thoughts in small groups.

Some studies have begun to explore the impact that ICTs might have on preservice teacher learning. Stiller and Philleo (2003) conducted a study with 63 preservice teachers on the use of blogs to promote reflection in coursework. Findings indicated that the use of blogs promoted depth of reflection and that reflections were more analytic and evaluative when compared with reflections from previous semesters. Similarly, Harland and Wondra (2011) reported in a study comparing 67 preservice teachers' blog reflections to traditional final paper reflections that blog reflections produced far greater depth of reflection. These results were based on coding of individual student-written reflections and blog reflections about clinical experiences during several undergraduate curriculum and instruction courses. The depth of reflection promoted by blogging that these studies reported shows great promise for combining technology and reflection as a way for preservice teachers to engage in critical thought about curriculum and instruction and to promote ongoing professional development within and beyond teacher preparation programs.

Method

Context

I gathered the data for this study from a required undergraduate literacy course. The course, titled Language, Literacy, and Linguistic Diversity, is the first of two required literacy courses in a teacher preparation program at a midsized Northeastern university. This course was designed to introduce the developing teacher to reading instruction and the development of a reading /writing community. The 20 students were divided into groups of 4. Initially students did not know each other well, if at all. We selected two groups for this study: Group A and Group B. Each individual discussion group was composed of four students. Brewer and Klein (2005) pointed out that the use of small-group methods in asynchronous online discussions helps to reduce anonymity and isolation in online groups. Each group had members that represented each of the different education majors offered at the university: early-childhood, elementary, and special education/elementary. Combining students from different education majors allowed the participants to be more likely to see literacy from various perspectives and to come to understand socio-psycholinguistic literacy theory. We chose groups A and B as representative data because the patterns deduced in this dialogue were representative of the data found in all of the groups. In addition, we selected groups A and B because, though all of the participants were reflective in their thinking, these two groups showed the most substantive responses overall. We chose these two groups because of the wealth of data collected from the groups, and upon examination, these two groups represented the variability that existed among all of the groups. We also assigned the students pseudonyms to protect confidentiality.

Procedures

The students had to participate five times by responding to five prompts (see Table 1) throughout the semester on an online dialogue discussion board. Each student had to respond to each prompt in the online discussions that were conducted throughout the 14-week semester. The instructor posted a prompt to guide each discussion, and the students were assigned to read specific pages of the course text prior to entering the dialogue. As the students engaged in the online dialogue, they were required to synthesize the course readings and reflections about the literacy practices they were observing during their field experience. Each prompt ran for a 10-day period of time, during which

Table 1. Literacy Prompts Used to Guide Discussion

1. How does learning take place when an adult scaffolds in mindful ways that consider a reader's specific need?
2. Make a list of ways you could scaffold individual students during their reading. As a group, come to a consensus and number these in order of importance—that is, from one that would predictably produce the best results to one that may not produce many results.
3. The goal for readers is to be more automatic and accurate at using graphophonic cues as well as additional cueing systems interactively. How can you help struggling readers who are fluent and who read for meaning?
4. How do teachers develop in young children a disposition for comprehension? In other words, how do teachers develop internal stimulation in children that enables them to tune in to the meaning of the text and to thoughtfully consider its connections to their world?
5. Part of children connecting with literature involves considering links between their own experiences and those of the characters and personalities about whom they are reading. Your role as a teacher is to promote thoughtful exploration of book content. How do you, the teacher, scaffold children through comprehension strategies and book content? Be specific.

students could respond at any time. The students took turns writing a final reflective summary that was to concisely summarize the online dialogue discussion. The summarizer was responsible for sending the summary to all members of the group.

Coding of Reflective Strategies

For this study, qualitative data collection and content analysis (Patton, 1990) were ongoing. Through the constant revisitation of data, we compared and contrasted similarities and differences between and among the two groups, and revised and generated qualitative categories (Dey, 1993). We analyzed the data within and across the two groups of students using thematic analysis. Through constant comparative analysis (Lincoln & Guba, 1985), we related the data to ideas to compare student responses to content. We then revised this substantive coding, and two authors revised it through iterative coding, comparison of codes, and revision of codes until we achieved agreement and identified strategies. We reread the initial data set three times to confirm or disconfirm the evidence of the preliminary identified patterns. We then enriched, expanded, contracted, or collapsed the initial patterns. Through this "axial coding" process (Strauss & Corbin, 1998), we were able to better refine the categories. We specifically used process coding (Saldaña, 2009), which requires using gerunds exclusively to represent action in the data. Process coding, according to Saldaña (2009), happens simultaneously with initial coding and axial coding and is appropriate as the sole coding method for small-scale research projects. We named and defined the codes according to the inherent actions in the reflective discourse.

The patterns coded in the online discussion threads and written reflective summaries revealed the use of five distinct strategies that preservice teachers seemingly used to deepen their understanding of literacy content. For the purposes of this study, the strategies are defined as ways that participants engaged in reflection within the online discussion to help themselves and each other understand particular literacy topics. These strategies emerged from the data as we coded the five discussions that were structured as responses to the online dialogues that the instructor initiated. The use of the strategies enabled the participants to help each other to think critically and reflectively within the discussion and to construct deeper meaning about the literacy content they were learning.

The five strategies that were coded in the reflections were: clarifying, enhancing, providing evidence, challenging, and different thinking. Each of these strategies is defined specifically below:

- **Clarifying:** Problem solving, explaining, getting the group to better understand
- **Enhancing:** Broadening each other's thinking
- **Providing evidence:** Referring to the text, class lecture, articles, field placement experiences, and personal experiences; examples include book walks, text walks, retells, establishing prior knowledge, activating prior knowledge, schema, predictions, questions, KWL, connections, thematic webs, mapping, mental images
- **Challenging:** Challenging each other to reconsider their statements
- **Different thinking:** Thinking outside the box, other ideas considered

These strategies emerged from the data as themes across the five discussions that were structured as responses to the online dialogues that the instructor initiated. The use of these five strategies enabled the participants to help each other to think critically and reflectively within the discussion and to construct deeper meaning about the literacy content they were learning.

Trustworthiness

The aim of trustworthiness in a qualitative study is to support the argument that the inquiry's findings are "worth paying attention to" (Lincoln & Guba, 1985, p. 290). To keep the trustworthiness of this study and maintain validity in the data, the authors followed Johnson's (1997) criteria for descriptive and interpretive validity by maintaining factual accuracy of the preservice teachers' accounts, and by understanding and reporting their viewpoints, thoughts, and reflections as they were reported. We maintained credibility also by establishing the truth value of the data by adequately identifying and verifying the recurrent patterns in the data (Krefting, 1991). We believe that the findings are applicable and transferable, whereas the strategies that the preservice teachers used can be applied to other literacy settings (Krefting, 1991). While we did not meet the technical definition of triangulation (Lincoln & Guba, 1985), we provided the data gathered from the online dialogues and written reflective summaries.

Findings

Table 2 (p. 42) demonstrates the number of times the preservice teachers used the reflective strategies in response

Table 2. Number of Times Preservice Teachers Used Reflective Strategies

Strategy	Prompt 1	Prompt 2	Prompt 3	Prompt 4	Prompt 5
Group A: Noel, Candace, Jenny, Crista					
Clarifying	6	6	11	14	7
Enhancing	3	3	0	8	6
Evidence	7	5	9	16	5
Different Thinking	0	1	0	0	0
Challenge	3	8	9	7	0
Group B: Carla, Sandra, Kellie, Tammy					
Clarifying	8	9	11	30	1
Enhancing	6	0	1	10	0
Evidence	15	18	19	20	20
Different Thinking	1	0	1	0	0
Challenge	4	5	3	6	1

to the five prompts on the online dialogue discussions and written reflections. Data revealed that there were several more "clarifying" and "evidence" reflections than there were "challenging" reflections. One possibility for the increase in the number of clarifying statements might be that participants became more articulate and knowledgeable about reading theory as the course progressed and better knew what was required of them for responding to each prompt. It was easier for participants in both groups to clarify and provide evidence in their discussion than it was to enhance each other's statements. Group B responded more than Group A in the number of times they used the strategies. This may be reflective of the participants' experiences with the course texts and field experiences.

In Groups A and B, the data revealed that only a few instances of different thinking emerged. Different thinking was not widespread. Although there was not a great deal of evidence on different thinking, the few reflections were strong in challenging students to come to think differently about literacy.

Clarifying

In Group A, we found examples of clarifying where the students engaged in problem solving, explaining, and getting the group to better understand. In a discussion about reading groups, Noel discusses strengths and weaknesses of students but is unsure of how this all works:

> The one problem with reading groups is that we have to divide the kids in a way that will benefit them all. Teachers have to know the strengths and weaknesses of all the kids. For example I would put Colin together in the same group as Mary because Mary questions and visualizes her reading quite well. While Colin could use her help because he just retells what happens in the story and doesn't think beyond the scope of the passage.

Crista takes what Noel has said and clarifies and extends his thinking about how to go beyond reading groups and puts the focus on appropriate texts:

> So it sounds like we are saying that teachers should strive to find text that all students will be interested in, and then go back and highlight different points throughout the book that students will be able to relate to. Having a quality text that is enjoyable for students to read with the whole class or silently is the first step I think in getting students to comprehend the text.

In a discussion about reading texts, Sandra (Group B) clarifies in the online dialogue:

> We have been discussing the importance of appropriate texts. I think we need to clarify that this means that the texts that are being read are supportive texts. Supportive texts create comfort for the child while he/she is learning to read. The text can't be too easy or the child will not learn, and it cannot be too difficult or the child will give up too easily. We need to use texts that will challenge the child to a certain extent.

After a long discussion and tossing around the language of appropriate texts, Sandra concretely clarifies and further defines what appropriate texts could mean in the teaching of reading.

In this same prompt about scaffolding for student learning, Sandra clarifies reading experience:

> In order for a child to receive a successful reading experience, they need to learn how to use the three cuing systems together (semantics, syntax, and graphophonics). Without this, the child will most likely be trying to sound out the word and may not really understand what is going on in the text. With these three systems, they will understand meaning, grammar and sound and symbol relationships. In learning this, the child will understand when language is or isn't making sense and that they need to skip over

> the word they don't know, read to the end of the sentence, go back to that word and try to find words that make sense and if it begins with the same sound as the word in question.

At the close of a prompt on strategies, Tammy states, "At first, I was very unclear as to what this discussion board prompt was asking us to do and how we were going to complete it. But now I understand everything…thanks ladies!"

The reflections above clearly show how the students used the strategy of clarifying as they discussed different issues related to literacy, such as the reading groups, reading texts, and scaffolding.

Enhancing

The strategy of enhancing involves the students contributing to broadening each other's understanding of literacy concepts. For example, Group B had been discussing comprehension. Kellie reflects, "Another important piece I feel we have not yet touched upon within our discussion is a child's knowledge of text structure, in helping them comprehend meaningful texts." Group B then moves to a discussion of schema defining it and its importance as a comprehension strategy. Kellie draws Group B's attention back to text structures:

> By drawing attention to different text structures that are seen in group, independent, shared, and guided reading sessions, children will become more internally stimulated/aware of this helpful strategy/tool that children can use to express their comprehension of a story.

The group picks up this discussion, and then Kellie summarizes for the group:

> We have discussed thus far that active reading, knowledge of content, and text structure are all aspects that can help one tap into meaning.... Questioning students about what they feel the story could be about simply by the cover and title of the story, or asking students questions about how familiar they are with the topic of a story which is about to be read … both can help students have a jump start on the meaning of a text and better understand what they are about to read.

These sample entries provide examples of how the group members enhanced each other's thinking through reflection.

Providing Evidence

The students connected their personal thinking and overall group discussion by providing evidence from course materials and experiences. Sometimes students connected what they saw in the field experiences with what was said in the course or with actual text readings. Sandra (Group B) writes, "My fieldwork teacher had me do a running record for one of my students because she was unsure what level the child was at. We definitely need to know what level the child is at because we don't want to have an extremely difficult book or a too easy book because the child won't learn anything." In a discussion on comprehension strategies, Group B has many, many references to the Owocki book and particular pages and actual quotes from the text itself.

These preservice teachers frequently referred to prior experiences and connected it to their course reading, class discussions, and online dialogue. Tammy (Group B) connects to her prior experiences: "I can remember as a student having my reading teacher ask me what I thought about what could possibly happen in the story. She did book walks with me and then would ask when right about the point where she would stop, she would ask me what I thought would happen in the rest of the story. This would help me incorporate my prior knowledge as well as make me want to read to the story to find out if I was right." Other times they connected things in the text to things said in class. Sandra writes in reference to prior knowledge, "This kind of goes along with what we were talking about in class today. We need to leave the children with a question to drive them into the text. Here we can have the students come up with predictions and questions. Finally, after they've read the book silently, they can come back as a group and discuss what they've learned."

Students were actually able to debrief what they were doing themselves on the online dialogue board. Carla (Group B) writes, "Kellie I think that when it comes to comprehension we ourselves are doing some of the things you said to make meaning and form understanding of the work we have from class. Just in these posts alone we make connections, evaluate, and visualize the context of our discussions and what we have read."

Challenging

In Group A, we found examples of challenging where students challenged each other to reconsider their statements. In a discussion about taking turns reading aloud, Candace challenges Noel as she reiterates, "So since we both think that it is not useful, why don't we just keep if off of our list because it really doesn't serve any purpose." Noel then challenges, "The only reason why I wanted to keep it in there is because in the directions it said that towards the bottom of the list we should have the things that won't work as well. But I am all about taking it off the list. I have one more thought though! You guys are probably saying, well, I just think that comprehension should be moved up higher. What do you think?" Students often challenged each other's views by simply asking questions to counteract what the other person believed or sharing their thoughts.

Different Thinking

In several examples, the participants moved from simply challenging to clarifying and moving to thinking differently. This example is a discussion on the use of phonics and involved participants in Group A, Candace, Noel, and Jenny. Candace stated:

> I remember in first grade that phonics was really stressed in learning how to read.… Phonics is actually the main thing that I do remember about reading in first grade, but I am not sure how helpful it really was. Phonics is an integral part of reading.

Jenny challenged Candace's statement and pointed out:

> Cole [author of text] points out that phonics is only a small part of children learning how to read. One cuing system is not going to make any child a fluent reader or a reader for meaning.

Noel challenged Candace to think differently about phonics, stating:

> I do agree with you though Candace that students may start to rely on one cuing system more than another, but this is only when they are taught the systems one at a time rather than simultaneously.

After more dialoguing, Candace stated:

> What I mean is that if the kids don't even know how to recognize words or sound them out it is almost impossible to also use the other cuing systems.

Noel then counteracts:

> I agree that every kid learns differently like you have mentioned, but I don't think we should be teaching the cuing systems one at a time.

Candace then stated:

> I am feeling a little stuck…. Yes, I do think that a child would be prone to use the cuing system that they learned first because they most likely feel the most comfortable with it. I do think it is important for children to be taught all of the cuing systems at once so that they could use the ones that work best for them. In most cases, there will be more than one cuing system that works well for a child and it is important that they are aware of all of the options.

This piece of written dialogue clearly demonstrates the student's use of "different thinking" strategies to challenge her peer to think differently about a literacy issue that is important to her.

On the same dialogue discussion on phonics, the members of Group B also challenged each other. Kellie has just returned from her field experience and made an entry on the online dialogue board. Kellie was challenging and questioning what she witnessed in her field experience and asks her group to help her make some sense of this:

> It's funny that we are talking about this subject (phonics) because in my fieldwork today we were working on beginning sounds of words, in particular finding words in sentences that begin with two consonant sounds like "that," "she," and "stories." It reminded me of the handout we read about the third grader Kris and I almost wonder if this exercise (in the fieldwork) could cause the children to focus a little too closely on if a word begins with two consonants or a vowel and a consonant. When I came into the classroom the kids were all sitting around the rug facing the easel that the teacher was writing on and they were all raising their hands saying words that only started with "st" and "sp." After this the teacher went to the class book and read a page from it, asking the students to find words that begin with two consonant letters, and highlighted the ones they found together. Once this large group discussion was over, she then had the kids break into their mini groups and do this same exercise with a brand new book that they had never read before. I do feel this possibly could have been a good exercise in recognizing the differences between vowels and consonants, but at the same time I felt it focused far too much at a part of the word that does not help much in understanding. Maybe someone else can see a positive to this exercise I witnessed in class today from my description of it. If a child is on their way to reading fluently, why suddenly make them notice if a word starts with two consonants and possibly bog them up on recognizing such a thing while they read. Let me know what you think.

Carla responded:

> As a teacher one way that I would work on different reading strategies with my kids would be to put post-it notes over words in books to get children to make predictions about what the word that was covered could be based on what they read. If, as a class or small group, you made a list of what the possible words could be, you could show them the first letter of that word and then look at the list of predicted words. This would be working on graphophonics because you're showing them to make guesses and then make those guesses work with the structure of a word.

Tammy followed up with:

> I saw Dr. B [the course instructor] do the post-it note lesson with the first graders in my field experience. They seemed to get a good grasp of the graphophonics by skipping the word they don't know and reading to the end of the sentence and then coming back to it. Seeing what makes sense and would fit in that space and has the same first letter. Like I said the kids were all able to apply the steps that Dr. B went over with them. I think that as professionals we need to help the kids practice many different applications of all the different cuing systems.

Kellie returns with more comments:

> Comprehension is a huge piece of reading fluently for meaning

> because if you don't understand what you are reading then how can meaning ever be attached to the words one is attempting to read.

In the group reflective summary for this piece, Sandra (the summarizer) writes:

> Kellie had an experience in her fieldwork class where the teacher worked with the students locating words that began with two consonants. There was nothing with meaning of the word, just finding the word with the right letters. We agreed that this definitely doesn't help the child with knowing what the word is or what it means. It's just showing the teacher that the child can find two consonant letters together. Kellie was having problems with what she saw in her field experience. It seemed to break with her understanding of literacy theory.

Kellie challenged her dialogue group to help her process this experience. The group members all contributed their understandings of literacy theory and the role of phonics. The whole group came to think of reading as a focus on meaning and realizing that phonics was only one part of reading.

Different thinking was not prevalent as a strategy in the online dialogue discussion. It is our view that it was because the dialogue usually included a lengthy conversation where each student had to specifically make their thinking visible. At times, it was almost a stream-of-consciousness writing, where the student was attempting to problem solve and clarify her own thinking and questioning her peers to help her transform her thinking.

Discussion

The findings of this study indicate that the preservice teachers used specific reflective strategies during online dialogue to deepen their understanding of literacy instruction and issues related to literacy instruction. The instructor's prompts and the online discussion forum acted as a portal for these students to engage in critical reflection about course content in a supportive online community. Similar to other ICT studies conducted with preservice teachers, these findings demonstrate that online forums, such as dialogues and blogs, help to promote depth of reflection (Harland & Wondra, 2011; Stiller & Philleo, 2003) and bridge the gap between key literacy ideas and actual instructional practice (Harland & Wondra, 2011).

The preservice teachers in this study used more clarifying and providing evidence strategies than strategies that required them to challenge or to provide different thinking. These strategies stood out to researchers as having the potential to strongly influence the way students came to understand and interpret content knowledge over the course of the semester. Collective knowledge building in this community of learners acted as a scaffold, enabling the participants to develop a more critical and deeper level of literacy understanding (Brown & Campione, 1990). Reflective strategies, such as the ones used in the online dialogue, provided preservice teachers with a strong platform for understanding content through scaffolding, asking challenging questions, and problem solving.

Constructively providing opportunities for students to interact with course content in the online forum helped to scaffold their active meaning construction about the literacy development of young children. This example of constructivist-based learning (Bruner, 1990) is defined as meaning making, rooted in the context of the situation (Brown, Collins, & Duguid, 1989), whereby individuals construct their knowledge of, and give meaning to, the external world (Duffy & Jonassen, 1992; Jonassen, Peck & Wilson, 1999; Schunk, 2000). In this learner-centered environment (McCombs, 2001), learners constructed their knowledge through active participation in the educational process and "not just responding to stimuli, as in the behavorist rubric, but engaging, grappling, and seeking to make sense of things" (Perkins, 1992, p. 49).

An important aspect of constructivism is collaboration. Our research suggests that in online discussions, learners are reviewing, critiquing, and testing each other's ideas and engaging in collaborative knowledge building (Scardamalia & Bereiter, 1994). Communities of practice (Lave & Wenger, 1991; Wenger, 1998) form from these collaborations, and as such, these communities of practice serve preservice teachers well as a mechanism for both strengthening understanding of content knowledge and reflective practice (Wenger, 1998).

Implications

Based on our findings, online discussions as a regular supplement to in-class learning supports teacher candidates as they develop the knowledge and skills needed to enhance literacy development in diverse learners. Our research suggests that the negotiated and collaborative knowledge building of online discussion offers a potentially productive route to enhance professional teacher preparation in literacy. The rich experiences for constructive meaning making promote a deeper and more concrete understanding of literacy. Specifically, providing opportunities to clarify thinking and provide evidence for thinking in the context of online dialogues appears to support a platform for reflective practice with preservice teachers.

The strategies in this study can be categorized within the framework of reflective thinking that range from practical to critical reflections. Critical reflection is seen as the process of analyzing, reconsidering, and questioning experiences within the broad context of issues (Murray & Kujundzic, 2005). Moon (2001) suggests that a deeper level of learning can occur when we engage and become connected to the practices of reflection and the outcomes of that reflection.

In sum, the learning communities in this study used the online discussion to build collaborative knowledge of literacy, share multiple experiences and informed views of literacy, learn the language of literacy theory, and validate every individual's understanding of literacy. We strongly believe future teachers will

greatly benefit from using the reflective strategies of clarifying, enhancing, providing evidence, thinking differently, and challenging thinking in online communities of practice to establish deeper understanding of theory and practice.

The ultimate goal of teacher education is to transform theory into practice. This study attempted to demonstrate that using online discussion can improve preservice teachers' ability to reflect about literacy theories and their implementation in the field. This study specifically demonstrated that the online dialogue supported preservice teachers in understanding and redefining literacy teaching practices, and in doing so, they developed deeper understandings and better understood literacy instruction overall.

We believe that by using structured online discussions, we will be better able to assess what preservice teachers know and can do and how they grapple with contradictions and challenges in teaching literacy. As teacher educators, we can better address strengths and weaknesses, and we will promote critical reflective practice among preservice teachers.

Author Notes

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