

Using a wiki to facilitate an online professional learning community for induction and mentoring teachers

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Abstract The purpose of this case study was to report on the use of a wiki as a tool for conducting online professional learning communities (OLCs) with 26 induction and mentor teachers. Data sources include teachers' wiki postings and teacher interviews. Results indicate that: (a) Web 2.0 tools may be most effective in OLCs when the social features are utilized in addition to the features that enable task completion; (b) Using Web 2.0 tools restrictively, and without consideration of their affordances, may inhibit the success of OLCs; (c) Online learning communities for induction teachers may be most effective when supplemented with face-to-face discussion; and (d) A task-driven environment in OLCs can encourage professional dialogue and reflection, but may make induction teachers feel isolated and unsupported.

Keywords Wiki · Online learning community · Professional development

1 Introduction

The emergence of Web 2.0 has changed the affordances and opportunities of online environments and the potential of the Internet for teaching and learning. Web 2.0 is a term that “refers to a perceived second-generation of Web-based services—such as social networking sties, wikis, communications tools, and folksonomies—that emphasize online collaboration and sharing among users” (Peltier-Davis, 2009, p.18). Web 2.0 offers possibilities for information sharing, collaboration, and social networking that are unrivaled in our history. Both teachers and students can benefit

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from Web 2.0 learning opportunities (Ferdig 2007). The collaboration and sharing opportunities offered through wikis, for example, have the potential to connect teachers in ways that encourage them to deepen their professional knowledge, offer support to one another, to mentor and be mentored, and to engage in professional dialogue. These affordances may be of particular benefit to induction teachers, a group that has historically reported feeling isolated and alone in their teaching (Illingworth, 2004).

Online Learning Communities (OLCs), which are potentially more dynamic and diverse than ever through the use of Web. 2.0 tools, have been proposed as a method of mentoring to combat the previously prevalent model of isolated teaching that induction teachers often experience (NCTAF, 2005). Although mentoring models have been introduced into many teacher induction programs, research demonstrates that traditional one-to-one mentoring models between expert and novice teachers are not sufficient for retaining teachers and helping them develop into effective practitioners (NCTAF, 2005). Thus OLCs mediated through Web 2.0 tools may have potential for engaging and supporting induction teachers in ways that have not been previously afforded through traditional mentoring models or through OLCs conducted in the more restrictive Web 1.0 environment.

The study reported here is an example of how a Midwestern United States school district chose to implement Online Learning Communities (OLCs) for its induction teachers, utilizing a Web 2.0 application to facilitate the OLC. This district wanted to both utilize the power of Web 2.0 and try a unique approach to professional development for induction teachers. Web 2.0 tools naturally lend themselves to online learning communities because of their inherently collaborative nature. The online discussion platform utilized in this study is a wiki, a type of Web 2.0 tool, which Knobel and Lankshear (2009) aptly described as a “collection of webpages whose content is typically organized around a specific purpose or topic,” where “content can be collaboratively written, added to, deleted, and modified by users” (p. 631). Thus the purpose of this study was to determine how induction teachers respond to using a wiki within online learning communities (OLCs) to better understand the role(s) of Web 2.0 tools in professional development for induction teachers. Although digital technologies are not always used effectively it is important to recognize their potential for teaching and learning. We believe that the teacher induction model examined in the current study not only has the potential to support new teachers’ induction into the classroom, but may also provide induction and mentor teachers practice with, and a model for, utilizing new technologies.

2 Context of the study

The following three bodies of literature were critical for shaping and conducting this study: the utilization of Web 2.0 technologies for learning and teaching, online learning communities, and induction teacher professional development. Literature analysis provides a rationale for the current study as well as a theoretical lens for analyzing the experiences of novice teachers within online learning communities.

2.1 Wikis

Although wikis have not been adopted in education as readily as blogs, most likely due to a higher learning curve, they have been used successfully in various educational settings (Knobel & Lankshear, 2009). Wikis provide users with a space to not only discuss topics relevant to the purpose or topic of the space but to also add hyperlinks, video, audio, and graphics to support various pieces of information or opinions offered. Relevant to our study, wikis are sometimes used to support teachers professionally (Samarawickrema et al. 2010). Features of wikis that may be beneficial to professional development include the opportunities they provide for reflection, identity construction, and collaboration (Samarawickrema et al., 2010).

2.1.1 Reflection

Reflection is a critical component of effective teaching, and teachers should form an awareness of their methods and classroom environment through reflection to best gauge how to meet students' needs and strengthen their teaching practices (Hung 2008). The asynchronous nature of wiki responses creates a method and forum for teachers to engage in in-depth reflection about various aspects of their classrooms, including curriculum, class management, and other teacher concerns and the level of reflection occurring in online discussion has been shown more effective than discussion occurring in traditional learning environments (Hawkes & Romiszowski, 2001). Teacher reflection can serve as a significant component in professional development and may provide teachers with a strategy to explore their own ideas and knowledge (Hung 2008). Web 2.0 tools, such as wikis, require users to actively engage in and construct their own knowledge through examination of connections and relationships to other users' comments and ideas. In this reflective process, users create new information that can be shared with other users (Maloney, 2007), which is a valuable and critical component of using wikis in professional development (Samarawickrema et al., 2010). Furthermore, because of the wikis' collaborative structure, the process of reflection has been expanded to include other professionals' thoughts and feedback (Maloney, 2007), which may benefit teachers, particularly in their induction years of teaching.

2.1.2 Collaboration

Through collaboration using wikis, teachers are able to share important strategy knowledge and provide immediate and specific feedback to other teachers (Albion, 2008). Arguably, this can occur in face-to-face professional development sessions as well, but research has shown that the anonymous and asynchronous aspects of wiki collaboration allow users to respond more critically and directly than they would in more traditional professional development sessions (Ajayi, 2009), and teachers do not have to be in the same physical location to share through a wiki. Additionally, the collaborative aspect of using Web 2.0 technologies, like wikis, is ongoing and not limited to one professional development session. Professionals may respond to the wiki at their convenience creating a continuous, less restrictive collaborative community. In light of this less restrictive framework of collaboration and

community building, users or professionals may begin to formulate or construct a professional identity through their online interactions and discussions with professionals in the same community (Conrad, 2005).

2.1.3 Identity construction

As discussed previously, wikis create an online community of users sharing and receiving knowledge (Conrad, 2005; Hunter, 2002). When used in a professional development setting in education, wikis may allow users to construct their own professional identity through reflections and collaboration with other professionals in the same area of expertise (Samarawickrema et al., 2010; Sherer et al. 2003). Teachers may better understand their own practices in light of another community member's responses or begin to develop an awareness of personal beliefs or values in education (Sherer et al., 2003).

2.2 Online learning communities

The rationale for OLCs stems from the concept of face-to-face communities of practice introduced by Wenger (1998). Communities of practice have been defined as, "groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis" (Wenger et al. 2002, p. 4). An online professional learning community is founded on the same concept as a community of practice, but takes place in an online environment.

Prior to the emergence of Web 2.0, online learning communities occurred mostly in the form of online discussions or as computer-supported communities. For example, list-servs, email, and video conferencing have been used to connect communities of teachers (Eisenman & Thornton, 1999; Thomson & Hawk 1996). However, these versions of OLCs lacked the truly collaborative nature allowed by Web 2.0, which allows users to interact with each other to change Website content. This affordance may be critical to the success of OLCs in light of Schlager et al. (2002) finding that many online communities fail because of a mismatch of Website designs with teachers' specific needs. Web 2.0 tools provide a solution to this problem because Website content is user-generated, involves ongoing creation and collaboration, and constantly changes to meet the needs of users. Gunawardena et al. (2009) described many of the differences among Web 1.0 and Web 2.0 environments. As it relate to OLCs, Gunawardena et al. posit that learning with Web 1.0 is mostly top-down and command and control, whereas learning with Web 2.0 is more apt to be bottom-up and peer to peer. Further, learning with Web 1.0 requires a management hierarchy, is scheduled and planned, provides a formal and structured learning environment and has centralized content creation, whereas learning with Web 2.0 facilitates mentoring and the building of knowledge networks in lieu of a management hierarchy, is a real time and just in time environment, provides an informal and collaborative learning environment, and has grassroots content creation.

Web 2.0 tools have been utilized to facilitate OLCs with varying goals (Vratulis & Dobson, 2008). However, little is known about their usefulness for many contexts

because the nature of OLCs varies greatly depending on the goals of the group. Further, although the potential of OLCs for teacher professional development has been demonstrated prior to the emergence of Web 2.0 (Lave & Wenger, 1991), additional research is needed to understand how such groups might best be facilitated in a Web 2.0 environment.

2.3 Induction teachers

In a recent national report NCTAF (2005) made a call for teachers to “...transform their personal knowledge into a collectively built, widely shared, and cohesive professional knowledge base” (p.1), stating that this model will require a new approach to teacher induction that does not involve traditional one-to-one mentoring, thus reinforcing the practice of stand-alone teaching in isolated classrooms. Online learning communities facilitated through Web 2.0 tools provided the opportunity for the knowledge construction that NCTAF describes. Providing new teachers with a strong start is imperative for retention, as nearly one out of every two teachers leaves the classroom within the first five years of teaching (NCTAF, 2005). The NCTAF (2005) report also argued that mentoring is only one element of a comprehensive induction system and external networks supported by Information and Communication Technologies (ICTs) provide great value for new teachers. Thus, the model utilized by the district in the current study aimed to serve as a model of an induction program that would provide a means for teachers to build collective knowledge and feel supported in their first years of teaching. In conducting the current study we believed that even if the model was unsuccessful, it may provide important information to inform future attempts at designing successful teacher induction programs.

3 Purpose

The purpose of this study was to determine how induction teachers respond to using wikis within OLCs to better understand the role(s) of Web 2.0 tools in professional development for induction teachers. The OLC in our study was created to serve the same purposes suggested in research concerning online learning communities, such as a space for professional talk or collegial dialogue (Prestridge, 2009), a place of shared purpose (Preece, 2000), and a space to interact and become both a learner and a source of knowledge (Hunter, 2002). As online learning communities are quickly becoming a part of education in both the classroom and professional development (NCTAF, 2005), it may be beneficial to understand how teachers at the beginning of their careers respond to mandatory use of Web 2.0 tools, such as wikis, in professional development.

4 Methods

Case study methodology (Creswell, 2007; Stake, 1995) was used to investigate the following research questions in this study: (1) How effectively does an OLC

facilitate a teacher induction mentoring program? and (2) How do the participants perceive a mentoring program conducted through an OLC? Essentially, the researchers were interested in the usefulness or ability of an OLC to effectively support an induction mentoring program and the participating teachers' personal experiences in the OLC.

4.1 Setting and participants: the case

The OLC, based in a wiki, was created for two purposes: (a) to provide a space for teachers, beyond the walls of their schools, to freely share ideas and express comments or concerns regarding their induction teaching experience, and (b) to provide online professional development through collaborative discussion about materials that focused on topics such as classroom management and assessment. Further, mentor teachers would always be accessible for the induction teachers, provided they checked the wiki regularly for new wiki posts. Therefore, the OLC was designed to provide continuous and collaborative support and professional discussion for induction teachers. The wiki was always accessible to the teachers and content was open for those teachers to read and respond to. The wiki posts were not evaluated by the district for content; they were only evaluated for completion.

The participant population consisted of 26 induction elementary and middle-school teachers and mentor teachers in a Midwestern United States school district participating in an induction program for first and second year teachers. Through the program, induction teachers became members of the aforementioned OLC, where they were assigned a mentor teacher, who held professional certification with multiple years of teaching experience who responded to induction teachers' posts and served as a resource for induction teacher support. Although some of the participants in this study were faculty at the same school, most of the participants worked in different school sites in the district. Mentor teachers were assigned to more than one induction teacher and were required to follow their mentees' wiki posts and threads in order to fulfill mentoring duties. Thus, the wiki had different threads but all participants were reading or viewing the same materials and responding to the same prompts, which were overseen by a district coordinator.

The induction teachers and mentors participated in the OLC for one academic year, responding to district reading or viewing materials through prompts once a month. The wiki provided a collaborative, shared discussion space for all 26 participants in the OLC, which was specific to this particular group of teachers in a Midwestern school district in the United States. Therefore, to explore the OLC in this context, the researchers decided that a qualitative case study (Creswell, 2007) was the most appropriate method of investigating the OLC. Case study research illustrates a particular issue through the study of a bounded system, an OLC limited to one group of participants, over time, one academic year (Creswell, 2007). Although case study research has been defined as a choice of what to study (Stake, 2005), we, like Creswell (2007), view case study research as a method of inquiry and chose to study the OLC through a focus on meaning in context to understand and interpret (Merriam, 1998) how a wiki facilitated an OLC for induction teachers. As the OLC in this school district was a new mentoring program, researchers felt an intrinsic case study (Creswell, 2007; Stake, 1995) may provide the most useful

findings in terms of evaluating this specific program and describing, in detail, the collective experiences of the induction teachers and mentors.

4.2 Data collection

Two primary forms of data were collected in an effort to best analyze the case study. First, the induction and mentor teachers' wiki posts were collected. Induction teachers initiated postings to the prompts, and mentor teachers followed up with feedback. Teachers were given due dates for posts, but posts could be made at any time, allowing for continuous and unrestricted teacher discussion. Teachers were required to respond to the prompts, but discussion was not limited to the prompt topic. Therefore, teachers were free to use the wiki as a forum for advice, support, feedback about classroom practices, etc. Although the district created and managed the wiki, no participants' posts were altered or deleted. A total of 318 wiki posts were collected for analysis with the shortest post consisting of 21 words and the longest post consisting of 417 words. The average wiki post was 206 words in length. Each induction teacher posted an average of 10 posts, and each mentor teacher posted an average of 14 posts.

The second source of data was interview responses given during semi-structured email interviews. Because of restricted access to teachers in the induction program, interviews were conducted via email to gather follow-up data after the teachers had completed their induction year mentoring program through the OLC. In situations where access to participants is restricted by confidentiality (like ours), travel, expense or time, online outlets, such as email, may provide justifiable methods of qualitative research (James, 2007). Furthermore, using emails to conduct interviews provides the interviewees with more time to consider questions and prompts, which may result in more reflective and thoughtful responses (James, 2007). We used a multiple-email approach by sending participants emails with questions or prompts for response, and we then provided follow-up emails for further explanation or clarification, which also served as member checking (Creswell, 2007). This process was followed until all interview questions had been answered for an average of three emails received by each participant.

4.3 Data analysis

Data analysis was primarily qualitative, utilizing constant comparative methods to determine themes that emerged from the data (Strauss & Corbin, 1998). However, codes were counted to determine frequency (Miles & Huberman, 1994) and to leave an audit trail to increase legitimation of themes (Lincoln & Guba, 1985) and provide numerical data.

Strauss & Corbin (1998) suggest it is unlikely that researchers will know what theoretical concepts will emerge in a qualitative study prior to beginning the study. Although qualitative research builds rather than tests theory (Merriam, 1998), researchers seldom enter a study without hypotheses of what they may find; therefore, theory is still necessary to offer guidance in qualitative research (Merriam, 1998), which was discussed as we grounded the study in literature in preceding sections. Nevertheless, no specific framework or theory was selected prior to the

study. Themes that emerged during analysis were connected with relevant literature post-data analysis.

Themes from wiki posts and interviews were first identified through constant comparative methods (Strauss & Corbin, 1998) in which the researchers explored participants' posts for emergent themes. Researchers coded sample data sets separately and then compared codes to test for inter-rater reliability. Once researcher discrepancies were identified and adjusted for, the researchers revisited the data to confirm or disconfirm codes, or categories, across participants' wiki posts and interview responses. Six predominant codes, or categories, eventually emerged from the data through the process of open coding and axial coding (Strauss & Corbin). To enhance and add numerical precision to qualitative findings, the researchers conducted a frequency analysis (Miles & Huberman, 1994) to provide a percentage description of coded data. This frequency count maintained analytical integrity (Miles & Huberman) and highlighted how categories were represented in the total data set. Table 1 explains these categories, which will be discussed in detail in the Findings section.

These concrete codes led to three abstract themes, which we compared to the data and then to the literature to develop an understanding of this OLC, which is described in the following section.

5 Findings

Because the OLC was created, mandated, and reviewed by the school district, we hypothesized that there would be discrepancies between the types of statements made in the wiki posts and those in the teacher interview emails. However, we were struck by the high degree of contradiction between the wiki posts and teacher interviews. Whereas the wiki posts were holistically positive and reflective of teacher support and learning, the interview responses suggested a different experience for the teachers. The following themes emerged to describe the use of an OLC in a mentoring program.

5.1 Variations of support in an online learning community

Professional learning communities exist in different shapes, forms, and varieties. States, school districts, schools, and even departments within the schools create learning communities to support teachers' professional development. The overall purpose of the OLC described in this study was to create a community that would promote unlimited access to teacher support and learning in a district as teachers could use the wiki at any time without posting limitations. However, as our data revealed, professional support and learning may transcend unlimited access to a wiki. Although a theme of support emerged in the analysis of wiki data, this theme was complicated when wiki data was triangulated with interview data concerning professional support. Therefore, an overall theme describing a multi-layered definition of support in an OLC was determined most appropriate to accurately describe data results relating to this theme. Overall, wiki data provided a mostly positive view of support whereas interview data added another layer of understanding to the type of teacher support needed in an induction program.

Table 1 Coded categories and examples

Category	Recurring topics	Recurring topics	Frequency of responses in category
	Wiki data	Interview data	Total data
Reflection	Initial teaching experiences	Time-consuming nature of reflection writing	20.8%
	Professional growth	Inability to actively respond to teacher reflection	
	Assessments	Superficial reflection with assignments	
Wiki components	Classroom management		13.9%
	Technical difficulties	Time issues	
	Mandatory assignments	Isolation from other teachers	
OLC components	Isolation from face-to-face contact	Drawbacks of assignment-based format	20.8%
	Collaboration (in-person vs. online)	Impersonal nature of OLC	
	Mentor/mentee relationships	Need for face-to-face contact	
Mentorship	Multiple-person support	Lack of support	48.3%
	Need for face-to-face contact	Room for improvement	
	Need for observation	Need for observation	
Support	Preference for face-to-face contact	Preference for face-to-face contact	41.7%
	Added members of support through wiki	Feeling of failed mentorship	
	Thanks	Lack of “physical” encouragement in OLC (e.g. pat on the back, smile, hug)	
	Congratulatory remarks	Feeling of isolation	
	Brainstorming		
Collaboration	Encouragement for new classroom practices		33.3%
	Idea exchanges		
	Value of face-to-face meetings	Idea sharing (online v. face-to-face)	
	Support from in-school team members	Resistance to social dependence on technology	
	Idea sharing		
	Professional development reading suggestions		

In their wiki postings, teachers frequently wrote statements reflective of support in the OLC. For example, teachers, like Michelle (all names are pseudonyms), used the wiki to communicate common feelings of frustration they experienced in their first year of teaching.

By working together and sharing with each other we will continue to evolve in our profession. It’s nice to have other teachers who care about and understand what you are going through. Thanks for sharing your story! I am also glad to

know that I am not the only one who made mistakes my first year of teaching (Michelle, wiki post).

Other teachers were mindful of the OLC and the specific type of support structure it offered as a resource to beginning teachers. As Kris stated:

This is a stressful and overwhelming time where we are all trying to get to know our students and what their needs are. This is exactly why it is so important that we have this peer support structure in place (Kris, wiki post).

Mentor teachers were also eager to provide affective comments to induction teachers that supported their teaching practices and reminded the induction teachers that they, too, were still learning in their teaching careers.

You are obviously a teacher who is totally invested in your students' work, progress, and problems. Thanks for all you have taught me this year as we work through this wiki process. Your words are encouraging and full of great suggestions (Donna, wiki post).

Statements such as these suggest teachers believed that the OLC provided some type of support in the mentoring process. However, interview data suggested differently as many of the same teachers who posted positive comments on the wiki revealed somewhat negative perceptions in their interviews. For example, when Kris was interviewed and asked if the wiki provided extra support in her classroom during the school year, she responded "No, because it became something extra I had to do." Further excerpts from the interview data implied that other teachers did not feel wholly supported in the OLC.

Some teachers seemed to be resistant to using technology in the place of real-time, face-to-face interaction and feared that using the wiki would lead to a breakdown in support. Donna, a mentor teacher, expressed these sentiments by explaining,

I fear that replacing the face-to-face time with a wiki will make a new teacher feel isolated and alone, especially on those days when teaching is overwhelming (Donna, interview).

Furthermore, Donna was concerned that the wiki was lacking as a substantial support system, which reinforced her fear that it may isolate induction teachers. She noted:

The wiki is not content, it is just a method. The method is good occasionally, but not as the ongoing support for mentoring (Donna, interview).

Isolation seemed to be one of teachers' greatest concerns for the wiki as a support structure as teachers expressed how grateful they were that some of their OLC members were in the same school as them.

I do not feel the wiki provided extra support for me in my classroom during the school year. My learning community members are all located at my building, which enabled me to talk with them about my needs and problems. I did not read other wiki groups unless it was an assignment, and I do not think that the wiki format promoted collaboration among my OLC (Laura, interview).

Like Laura, many teachers forewent using the wiki beyond the required postings because they preferred to talk to their group members in person, if given the opportunity. Many participants perceived the wiki as an assignment, which provided further insight into the understanding of the OLC as a support structure and leads to our second emergent theme of the complexities of a wiki that is driven by district-created assignments and prompts.

Although the wiki may have provided support on some level through positive and affective comments, data suggested that face-to-face support was more personal and preferable than the support offered by the OLC. As Donna suggested, posting to the wiki served as method to give positive comments and words of praise, but teachers were concerned about the isolating effects of only using an OLC for induction teacher support. Although there is some evidence that teachers prefer online discussion over face-to-face discussion (Hobbs et al. 2002), our interpretation here is supported through other research on online discussion. Hawkes and Romiszowski (2001) and Tiene (2000) all concluded that online discussion may be best used as a supplement, not a replacement, for face-to-face interactions. We agree with their conclusion as it relates to the context of the current study.

5.2 The complexities of a task-driven wiki

Although the wiki was designed to function as a space for professional collaboration and support, the teachers were assigned specific texts and articles to read and had to first respond to district-created prompts to fulfill district requirements for induction teachers. The discussion created by these prompts was, on the surface, critical, enriching, and thought-provoking. However, interview data contradicted many of the teachers' wiki postings. Superficially, it seemed that teachers were able to connect with one another and work off of one another's ideas. Some participants, such as Kelly, were able to supplement research she was conducting in her classroom with another teacher's experience.

This is great for me to hear! I am currently conducting research on different cooperative learning groups and their success in a problem-based curriculum...I'm glad that you were able to see this model in motion...Keep me posted on your implementation of this strategy. I would love to include your findings in my research (Kelly, wiki post).

Other teachers seemed to gain new ideas for their classroom through the connections they were able to make with their OLC members' posts.

Mindy, I've seen the dictation spelling assessments before and I think this would be an easy thing to do with our word work in third-grade. I may start doing this with a few of their words each week...Thanks for the idea! (Jess, wiki post).The aforementioned two posts create a picture of a connected teacher community with educators bouncing ideas off of one another and learning through each others' ideas and the required readings. However, the interview data reflected a different sentiment toward the OLC.

I felt like most of the wiki assignments did not relate...to what I was doing in the classroom. I felt like I was in college again (Michelle, interview).

Furthermore, numerous posts, such as the following post by Holly, were made that praised teachers for their ingenuity and ability to implement different exploratory projects into their curricula that related to the discussion-prompt readings.

You have sparked my interest in this topic! I think it is great that you feel more confident as a teacher after doing this project! I think this project would be great to build upon for the second project. I would like to know more about the forerunners for motor delays (Holly, wiki post).

Holly's enthusiasm and interest in the results of her mentee's project reflect a mutual-learning environment, which may have been propelled by the required readings that the teachers had to complete and discuss in the wiki. However, Holly suggested a different attitude toward her OLC in her interview as she remarked, "[The wiki] provided an opportunity to complete the reflection assignments, but I really didn't use it for anything else in terms of communication" (Holly, interview).

Many teachers in their interviews held a similar opinion of the required readings and wiki postings. The interviews suggested that the teachers felt as though the OLC was more of an assignment rather than a space for professional growth and were concerned about the depth of their mentor/mentee relationships and the learning that took place within.

[The wiki] was a task to complete, and although I wanted to support my team, I really struggled to make it a priority and also to provide encouragement, coaching, and sage advice (Donna, interview).

When teachers were directly asked about their experiences with the OLC, some reflected that the task-driven nature of the wiki created anything but a mutual-learning environment as is seen in the following excerpt.

[The OLC] was forced and unnatural. I realize that there has to be some method of insuring [sic] that everyone is participating, but mandating a specific number of replies to a specific question pretty much ensures that participants are going to be more focused on word count rather than content (Karen, interview).

Another example of the complexity of the task-driven nature of the wiki can be found in Amanda and Kris' engaged exchange on the wiki about a learning program Kris had implemented in her classroom based on the readings, with Amanda being so influenced and impressed by Kris' program that she posted:

I am really excited for you Kris that this program has worked so well! I am really considering implementing it in mine as well! (Amanda, wiki post).

Amanda's post also seems to reinforce a mutual-learning collaboration with Kris, who had shared her positive experiences in her wiki posts. However, Kris, in her interview, contradicted this collaboration.

With our busy schedules I think that the wiki posts became something we had to do rather than a quick and easy way to have conversations and exchange information...The time constraints that we feel, particularly as first year teachers, really made the wiki posts something else we have to do rather than something we are doing because we want to learn and improve our teaching (Kris, interview).

The task-driven aspect of the wiki was certainly complex as teachers were holistically reflective in their wiki posts and critically thoughtful about their teaching practices and professional growth, yet they were critical in their interviews about the assignment aspect of the wiki. Discussion prompts seemed to encourage positive reflection in mentor and induction teachers.

As I think about my professional growth as a teacher I think I am still continually evolving and growing – and I hope that I continue this for many more years (Polly, wiki post).

Polly began a discussion thread reflecting on her growth as a teacher, which sparked other teachers' posts about professional and personal development, such as the following post by Laura.

It is amazing to me to look back and reflect on how much growth has already happened in one year of teaching. What strikes me the most in my reflecting is all the different sources of professional growth that were a part of my first year of teaching (Laura, wiki post).

However, Laura revealed in her interview that she posted only perfunctory reflections to complete the district assignment.

I contributed adequately to receive a “passing” grade. I think the wiki format also created some generic answers that were [only] acceptable, which did not benefit my professional development (Laura, interview).

The juxtaposition of data created a complex lens through which to view participants’ experiences. Whereas participants’ wiki posts painted a positive picture of a collaborative environment, their interview responses suggested the wiki was mostly a space for “turning in” assignments rather than a space for facilitating professional discussion and support for teachers. However, the tasks, meaning the reading assignments and required wiki postings, resulted in engaged professional reflection, which, in many instances, sparked other teachers’ professional reflection. Although the teachers personally reflected in their interviews that that they felt as though the wiki was just an assignment, they did engage in collaborative and collegial dialogue and reflection.

The limitations that the teachers felt could also be contributed to the way the wiki was *not* used. Wikis offer great flexibility for the presentation and consumption of content. Gunawardena et al. (2009) describe wikis as an anchor for other social applications and community-created content that can be used to enhance the learning process. For example, they state that wikis provide a setting for links to blogs, Flickr, mashups, Del.icio.us, RSS feeds and Facebook, and that these tools can contribute to identity development and knowledge sharing in groups such as OLCs. The district in the current study used the wiki only as a discussion forum without utilizing the collaborative options offered by Web 2.0. This restrictive use of the wiki may have inhibited teacher interactions, thus limiting the effectiveness of the OLC.

5.3 The impersonal nature of the OLC

Although the wiki postings implied disconnect whereas the teacher interviews revealed direct statements of disconnect and isolation, both data reflected the overwhelming sentiment that mentoring programs should include face-to-face meetings and observations in order to be considered effective and beneficial. Wiki comments echoed a preference for personal meetings over using the wiki for mentoring, sharing ideas, and trading resources. When teachers wanted to share ideas, they would post statements about meeting at a separate time, rather than posting the ideas to the wiki.

I feel like [department collaboration] has brought the math department all together...on any day we all know what the others are doing. Would you like to meet sometime to share ideas? I’m sure you’ve got tons of them! (Megan, wiki post).

The tendency for teachers to arrange meetings through the wiki may reflect a need for induction teachers to have one-on-one contact with other teachers to discuss their

job and personal information, a common occurrence in many different workplaces. As Katie reflected:

I definitely miss our time to just talk about what's been going on in our lives and classrooms (Katie, wiki post).

Indeed, when participants were not given the opportunity to “just talk” or were not in the same building as their mentors, they resorted to asking other teachers for help or advice instead of their mentors.

With all of the expectations of being a new teacher and not having a mentor in my building, I found it easier to ask teachers who I work with when I had questions (Amanda, interview).

This tendency to turn to other teachers for support highlights the importance of emotional as well as educational support, as Megan's post suggests.

It is good to have the support from other teachers in the building and my mentor to feel good about my abilities (Megan, wiki post).

Writing about a practice on a wiki and receiving positive comments may not offer the same type of support that personal encouragement may offer.

Again, findings suggested that technology may be isolating and cannot offer the same personal reassurance and support that face-to-face meetings may offer, which adds to the description of an effective mentoring program. Donna's attempt to explain the necessity of human contact in the mentoring process echoes these sentiments of effective interaction.

I think educators may be overestimating the value of wikis and underestimating the value of what actually happens during a face-to-face collaborative conversation between a new and mentor teacher (or any other two teachers). Just because the words are not typed, sent electronically, read and responded to, doesn't mean that the interaction wasn't effective. As teachers we can and do respond to others' needs daily. Even an encouraging smile, hug or pat on the back is hard to offer on a wiki (Donna, interview).

Even the few teachers who made positive comments about the OLC still expressed concern for the first-year teachers in the program.

As a second year inductee I think that it was extremely beneficial to not take my time every month for 2 h meetings like we did last year. I was glad to just log on to wiki and post my assignments. But I feel bad for the first year teachers because I don't really think [the OLC] helped me and I know as a first year I had much more contact with my personal mentor and got to do multiple observations. I would feel very lost if I were a first year inductee this year (Megan, interview).

The lack of mentor/mentee observations was also an aspect of the OLC that teachers found disconcerting. Data suggested that teachers considered observation to be a significant factor in improving teaching practices for both mentors and mentees.

I agree with you that observing others is a powerful tool in your professional development. Last year I learned so much from observing my mentee (Patty, wiki post).

Patty, a seasoned mentor teacher, used the mentoring process to not only teach, but to continue learning from new teachers. Furthermore, mentor teachers expressed

feelings of concern for their mentee because of the observations created a time to meet with mentees, which teachers in the OLC were not required to do.

Does anyone besides me miss the “observation” portion of the mentoring and induction process? I also miss the frequency of contact I had with [my mentee] last year...I fear that I’ve abandoned her this year (Donna, wiki post).

Katie quickly responded to Donna’s question to confirm that she, too, felt the observations to be an important aspect of the induction program even with the added responsibilities and work that observations created.

Yes! I definitely miss the time to be able to get out of my classroom during the day, and despite having to formally write up what we did for observations I felt they really improved how I saw my students (in a different perspective) and my overall job (Katie, wiki post).

The need for face-to-face interaction and the observational component of the induction mentoring program were two prominent sub-themes that emerged from the data suggesting that mentoring programs should be personal and interactive beyond the scope of wiki technology. In fact, no statements were found in either the wiki or interview data that absolutely favored or even suggested an OLC over an induction mentoring program grounded in personal meetings and observations.

6 Conclusions and discussion

The juxtaposition of teachers’ wiki comments to their interview responses led to dichotomous findings in our study. On one hand, teachers’ wiki posts were highly insightful, reflective, and affective. Teachers’ wiki posts showed evidence that they were interested in each others’ opinions and were able to communicate with a large group of people effectively. However, teachers’ interview responses portrayed different, more negative feelings toward the wiki. Interviews revealed that the participants felt unsupported and seemed to holistically dislike the wiki due to its impersonal, assignment-driven nature. The majority of the teachers in this study did not feel that the wiki was useful or beneficial.

Although the online learning community did, on some level, create a platform for teachers to reflect, share knowledge, and encourage each other, face-to-face meetings between mentors and induction teachers are also necessary for teachers to feel supported. Findings suggested that even though teachers primarily expressed dislike toward the online learning community, the wiki was still useful in facilitating professional development. However, negative feelings toward professional reading and wiki assignments may interfere with the effectiveness of the online learning community as teachers may be less inclined to actively participate in something they do not feel is beneficial.

We suggest that districts consider using an online learning community facilitated by a wiki in conjunction with face-to-face mentoring programs. New teachers may already feel isolated when entering the classroom, and an online learning community may not be completely effective in supporting those teachers. However, wikis could provide teachers with a place to share ideas with teachers in other schools in the district. Wikis may also be beneficial for seasoned teachers who feel the burden of time commitments by offering a place to exchange ideas and communicate with other

professionals. Nonetheless, our study revealed that support for induction teachers goes beyond a place to exchange ideas and reflect. Therefore, districts should consider teachers' experience levels and comfort in their profession when creating a mentoring program. We also suggest that districts considering using wikis utilize them in less restrictive ways that allow the collaborative nature of Web 2.0 tools to emerge.

Finally, in reflecting on research about online learning environments and professional learning communities (e.g. Conrad, 2005; Hunter, 2002; Maloney, 2007; Schlager et al. 2002; Vratulis & Dobson, 2008), it is not surprising that this school district's wiki-based OLC was not entirely successful. The district used the wiki much like a discussion forum, rather than as a collaborative space for creating a community, sharing resources and constructing knowledge and personal identities. It is, however, surprising that the district believed that their particular use of the wiki would facilitate the community, collaboration and knowledge and identity construction they desired. Despite the considerable research on how to facilitate learning in online environments, the leaders in this district still conducted the OLC in a way that seemed likely to fail. The findings of this study should lead us to consider how we can better assist school leaders and professional developers in utilizing technology in ways that are grounded in research and may therefore have an increased likelihood of success. Thus, this study raises the pertinent issue of how we may better disseminate research on technology and learning to school leaders. This issue and the aforementioned final considerations should be critically reflected upon as we move forward in the field and strive to facilitate effective technology use in educational and professional development settings.

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