New-Teacher Induction 2.0

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Abstract

The purpose of this program evaluation study was to design, implement, and evaluate the effectiveness of incorporating an online learning community as part of a comprehensive new-teacher induction program. The researcher, who serves as the middle school principal and new induction coordinator for the school district, used a mixed-method approach to collect and analyze the results of the study. First, the researcher created an online learning community model based on the results of a comprehensive review of literature and a previous year's pilot study. Next, the researcher implemented an online learning community in the form of a wiki. The study evaluated the implementation of the model through the perspectives of all the participants: new teachers and contributors (veteran teachers, principals, central office administrators, and professors from schools of education). The data (pre- and postsurveys, questionnaires, and focus-group sessions) revealed positive results for the new-induction online learning community format. (Keywords: online learning community, new-teacher induction, school-university partnership, Web 2.0, wiki)

Today's public education teaching force is facing multiple challenges as we enter the post-No-Child-Left-Behind era. Two problems facing today's teaching force are teacher attrition and digital integration and literacy skills. However, the way that we prepare new inservice teachers to enter the field may serve as a common solution to both problems.

Background

Schools are facing high levels of turnover through attrition. In particular, new-teacher attrition rates are as high as 50% in some areas despite the growing need for more teachers in the field (Ingersoll, 2003). With such losses, the inevitable occurs: low levels of student achievement (Darling-Hammond 2003).

Lack of support structures and poor working conditions are cited as several of the primary reasons for new teacher attrition (Ingersoll, 2003; Wiebke & Bardin, 2009). A profession facing such a loss requires interventions to reduce the number of teachers exiting the field.

Teacher induction programs have been shown to be effective strategies in reducing new teacher attrition (Ingersoll, 2001; Strong & Villar, 2007; Wong, 2005). Comprehensive programs designed around the new teacher to provide a foundation in professional development and support are necessary to prepare new teachers entering the field (Kaufman, S. M. Johnson, Kardos, Liu, & Peske, 2002; Wong & Asquith, 2002). Furthermore, professional development provided through the means of a teacher learning community affords teachers' greater understanding and acceptance (Clark, 2001; Darling-Hammond & McLaughlin, 1995; Darling-Hammond & Richardson, 2009; Ullman, 2009).

Professional learning communities where teachers form groups to collaborate on new teaching concepts and strategies promote positive learning environments. The learning community provides a natural support system to explore new ideas, share common concerns, and promote collegiality (Darling-Hammond & Richardson, 2009). The very nature of a teacher learning community lends itself to a new-teacher induction program. However, in the 21st century, learning communities can span the digital world easier than ever, creating new possibilities.

Today's rapid advances in new information and communication technologies (ICTs) have opened new possibilities for educators to work collaboratively in an online learning community. The Internet has moved from a static knowledge base reserved for those with Web-based programming skills to an interactive experience through the use of Web 2.0 technology for the everyday user (Solomon & Schrum, 2007; Tapscott & Williams, 2007). Tools such as blogs, widgets, wikis, and mash-ups are common in this personal Web experience. The "real world" is merging with the "digital world" to form one interactive experience where people work, network, communicate, socialize, and play. As a result, globalization, where physical boundaries are no longer obstacles to interact with people, is becoming commonplace (Friedman, 2005). By harnessing easily acquired mass communication technologies, schools can grow and expand professional development opportunities, enhance learning networks, and ultimately meet the needs of today's student.

Despite that there is a growing amount of literature on examples of Web 2.0 technologies used in educational settings, the field lacks empirical research on the use of Web 2.0 in schools (Fahser-Herro & Steinkuehler, 2009–2010). At this point, the education field is lacking in research on the impact of technology on the profession, even though today's newest teachers entering the field are considered the first people who have grown up with everyday access to technology (Lei, 2009).

As an added argument, "K–12 school districts have been slow to react to the

extensive gap between teaching staff and their technologically savvy students" (Fahser-Herrro & Steinkuehler, 2009–2010, p. 57). For schools to avoid a "digital disconnect" between their teachers and students, opportunities for modeling and utilizing these tools are necessary (Greenhow, Robelia, & Hughes, 2009, p. 247).

This researcher has developed a framework for new-teacher induction as a result of the confluence of schools needing advanced and comprehensive new-teacher induction programs while at the same time being left behind in the digital world. The framework not only delivers the necessary support structures for today's new inservice teacher but also models the appropriate use of powerful ICTs.

Essential Components of the Online Learning Community Model

After an extensive review of literature and application of a pilot study, this researcher was able to develop a comprehensive new-teacher induction program. The researcher founded the core components based on an extensive review of literature in the area of new inservice teachers entering the field and the importance of the integration of Web 2.0 technologies in today's schools.

Comprehensive Program

First, the model calls for a comprehensive new-teacher induction program that extends through the school year, resisting the quick teacher orientation approach found in many schools (Fulton, Yoon, & Lee, 2005). Additionally, the model requires more than the assignment of a mentor, which is not enough to support the demands placed upon teachers, who often feel "lost at sea" (Kauffman, Johnson, Kardos, Liu, and Peske, 2002). A mentoring alone approach to induction is more of a survival tactic rather than a professional growth and learning approach (Wong, 2005). To be successful, today's new teacher entering the field requires an extensive induction program (Ingersoll & Kralik, 2004). The design facilitates the importance of being a part of a professional learning community. Fulton, Yoon, and Lee (2005) advocate for induction programs that "support entry into a learning community" and utilize "external networks supported by online technologies" (p. 1). The design moves away from traditional standalone, one-to-one mentoring programs and encourages collaboration, creating "an integrated professional culture with frequent exchange of information and ideas across experience levels" (p. 608). Therefore, the framework creates the opportunity for an ongoing, comprehensive induction program.

Professional Development in a Collaborative Environment

The level of anxiety, self-doubt, and isolation among new teachers entering the field is prevalent in the literature (Brock & Grady, 1998; Johnson & Birkeland, 2003; Wong, 2005; Wong & Asquith, 2002). By creating an opportunity where new teachers can share common experiences, seek support from experienced educators, and focus on professional development, school districts have the opportunity to promote teacher self-efficacy (Hur & Brush, 2009).

The learning community approach is associated with higher levels of teacher self-efficacy and student achievement (Banilower, 2002; Darling-Hammond & Richardson, 2009). By participating in a learning community, the participants have an opportunity to collectively inquire and make sense of their experience through "collective inquiry" (DuFour, 2003; DuFour & DuFour, 2007). Thus, the model counters the feeling of isolation that new teachers often experience.

Variety of Support Personnel

The New-Teacher Induction 2.0 Framework calls on a variety of personnel to take part and support the new teachers as active participants of the online learning community. The conceptual framework's design calls for support from a variety of sources, both inside and outside the school district. Contributors in the conceptual framework consist of veteran teachers, district administrators, building principals, and university professors from schools of education. Freiberg (2002) reinforces the necessity of creating opportunities for new teachers to have access to experienced educators, stating, "Without access to the pedagogical skills of veteran teachers, many new teachers are unprepared to face the challenges of the classroom" (p. 56).

Administrators, through this design, can create avenues for dialogue and interaction among new teachers and veteran educators. The administrator's role in creating these "collegial relationships" is critical to creating a system aligned with the best practices from the research and literature (Cheng & Pang, 1997).

The conceptual framework also calls on experienced educators located beyond the confines of the school district, as recommended in the literature. "School–university partnerships are a fundamental link to strengthen teacher education reform" (Burton & Greher, 2007, p. 13). Quality school–university partnerships have resulted in reciprocal benefits; therefore, improvement in teacher preparation and development are seen at both levels (Epanchin & Colucci, 2002). In a study of school–university partnerships, Kelley (2004) describes the results of six school districts that partnered with the University of Colorado: "Through creative resource sharing and collaboration with the university, participating districts have developed a cadre of committed, effective teachers to meet current demand and continue to support and invest in the induction program for new hires" (p. 447).

Promotion of Web 2.0 Technologies

The final and most unique component of the framework is the promotion and modeling of Web 2.0 technologies. Leu, Kinzer, Coiro, and Cammack (2004) bring about real questions on whether or not new teachers are prepared to use new communications technologies in the classroom setting. For schools to avoid a "digital disconnect" between their teachers and students, opportunities for modeling and utilizing these tools are necessary (Greenhow, Robelia, & Hughes, 2009, p. 247). Most significantly, the conceptual framework helps model Web 2.0 usage for both the new teachers and

Table 1. Components of New-Teacher Induction Online Learning Community Framework

Component	Description	Literature
Comprehensive induction format	Supports the inservice entry into the field	Fulton, Yoon, & Lee, 2005; Ingersoll, 2001; Strong, 2007; Strong & Villar, 2007
Professional development in a collaborative format	Collaboration to support higher levels of self-efficacy and student achievement	Clark, 2001; Darling-Hammond & Richardson, 2009; DuFour, DuFour, & Eaker, 2008
Variety of support personnel	Experienced educator network system including higher education	Burton & Greher, 2007; Freiberg, 2002; Ingersoll, 2003; Kardos, 2003; Marable & Raimondi, 2007; Wong 2005
Promotion of Web 2.0 technologies	Modeling of latest technologies to help support digital immigrants bridge gap with today's digital learners	Fahser-Herrro & Steinkuehler, 2009–2010; Greenhow, Robelia, & Hughes, 2009; Baker & Labbo, 2007

Table 2. Pilot Study Postsurvey Results

Criterion	M	SD
The discussion board experience helped me generate new ideas.	3.45	0.69
The online learning community wiki as a place to collaborate with new and experienced teachers, administrators and educators in the field.	3.65	0.49
The wiki as a venue to interact with other new teachers with similar challenges, goals, and ideas.	3.90	0.31
How would you rate the following components of the wiki?		
a. Home Section	3.16	0.50
b. Resource Pages	3.39	0.61
c. Discussion Boards	3.84	0.37
d. Embedded Widgets	3.19	0.66
How would you rate the wiki experience overall?	3.40	0.60

Note. N = 20. Rating scale 1 to 4; 1 = lowest rating, 4 = highest rating.

the contributors. Table 1 summarizes the core components of the New-Teacher Induction 2.0 Framework.

Pilot Study Influence on Online Learning Community Model

In addition to being grounded in the literature, the genesis of the online learning community concept was a result of a pilot study that the researcher conducted during the 2008–09 school year in the researcher's school district with the 2008–09 new-teacher induction cohort. Through that year's new-teacher induction program, the researcher explored the concept of incorporating an online experience on a pilot basis. The induction coordinator incorporated two themes into the online learning community: technology and differentiated instruction. Rich discussion and collaboration of ideas around the two themes developed in the discussion boards as a result.

In addition to researching the discussion board threads, the researcher gave an exploratory survey to this past year's new-teacher induction group. The survey items were based on a 4-point Likert scale, where a rating of 1 was the lowest rating and 4 was the highest rating. The data revealed two essential pieces of information. First, as shown in Table 2, the participants viewed the online experience positively. On a 4-point scale, the strong means for each category with little variation revealed that the participants received the format well.

Second, the 2008–2009 pilot study guided the researcher in identifying the necessary subcomponents found within the new-teacher induction program that this study evaluated. The framework consists of three subcomponents: content, delivery of information, and collaboration.

Professional development content. First, the content within the new-teacher induction program was based on the pilot study results. By analyzing the pilot study's wiki discussion board discussions, the researcher identified four professional development themes: technology, assessment and grading, differentiated instruction, and special education. In the discussions, the teachers indicated the need for more information and assistance with applying these areas in the classroom. Therefore, the content within this model consisted of those professional development themes. Two months were dedicated to each professional development theme using a hybrid approach. One or more of the contributors introduced each theme in a traditional meeting setting after school, and the following month's meeting was held online via the online learning community. Throughout the two months, participants had opportunities to interact and contribute to the associated content.

Delivery. Second, the delivery of the content was an essential subcomponent within the model. Ultimately, the researcher chose a wiki as the online learning community common "virtual meeting place" due to the user-friendly nature of the technology (Graham & Ferriter, 2010; Sheehy, 2008). Within the wiki, the researcher utilized a differentiated approach to deliver the content to model various uses of Web 2.0 technologies. The wiki content was shared through embedded video, text, hyperlinks, netcasts, Google Docs, downloadable files, and asynchronous discussion

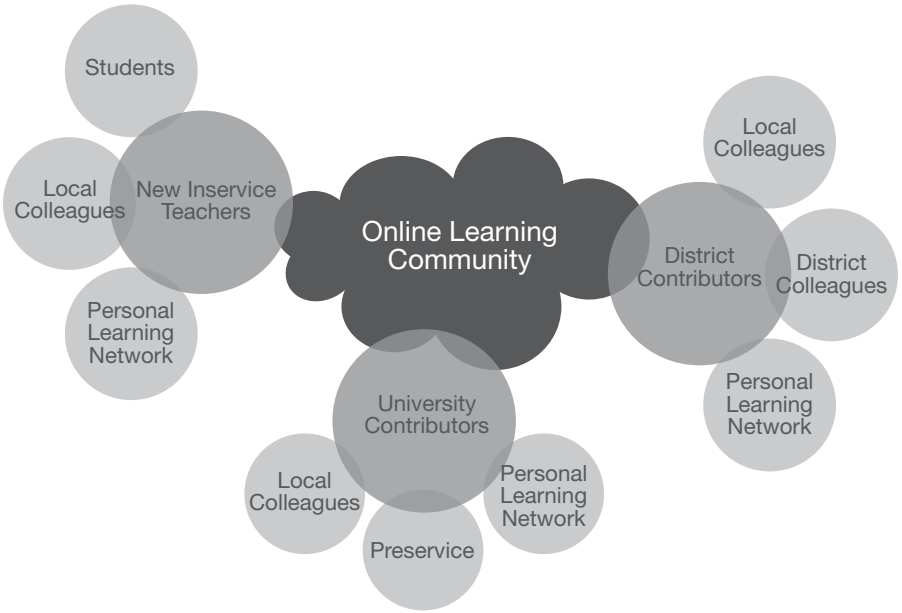

Figure 1. Online learning community (OLC) new-teacher induction network. The Venn diagram illustrates sharing and connectedness, whereas the OLC is represented by a cloud, where the OLC takes place through Web 2.0 technology. The common "meeting place" among participants in the conceptual model is the wiki. Each element has reciprocal spheres of influence, demonstrating the potential for the OLC's influence to reach beyond this community alone.

boards. The pilot study results supported the use of the wiki and various tools within the wiki as a means of content delivery.

Method of communication. A final and essential subcomponent was a method of communication to support collaboration and self-reflection. As discussed above, the wiki had a default discussion board tab on each page that allowed participants an opportunity to hold discussion based on the page's content. Ultimately, the wiki discussion board component served as the avenue for communication in the online learning community. The importance of collaboration and self-reflection is highlighted as an important prerequisite for teachers to develop self-efficacy (Darling-Hammond & Richardson, 2009). Additionally, the discussion board format was strongly received as a vehicle for self-reflection and collaboration tool in the pilot study results (see Table 2). Overall, the components and subcomponents served as the basis for the creation of the online learning community. The end result was the development of a conceptual framework of an online learning community network, as seen in Figure 1.

The new inservice teacher element consists of three reciprocal networks:

- **Personal learning network:** The teacher's network where he or she accesses job-related information
- **Local colleagues (within the teacher's building):** The teacher's colleagues, with whom he or she interacts on a regular basis
- **Students:** The teacher's students with whom the teacher interacts on a regular basis

Next, the school district's contributor element contains three reciprocal networks in which the main component has a direct interaction:

- **Personal learning network:** The school district contributor's networkwhere he or she accesses job-related information
- **Local colleagues (within the contributor's building):** The school district contributor's colleagues with whom he or she interacts on a regular basis
- **District colleagues:** The school district contributor's colleagues who work outside his or her building but within the school district

Finally, the university professor element contains three reciprocal networks in which the main component has a direct interaction:

- **Personal learning network:** The university professor's network where he or she accesses job-related information
- **Local colleagues (within the university):** The university professor's colleagues with whom he or she interacts on a regular basis
- **Preservice teachers:** The university professor's students with whom he or she interacts on a regular basis

The conceptual model provided the necessary framework to create the actual new-teacher induction online learning community. Thus, new inservice teachers, district personnel (administrators and veteran teachers), and university professors had a common "meeting place" to communicate, collaborate, share ideas, and provide support.

Methodology

Once the conceptual framework was developed and implemented, the next step was to evaluate the complete model for an entire school year with a cohort of new teachers entering the field. This article is part of a multifaceted research study looking at various aspects of incorporating an online learning community as part of a new-teacher induction program. For the purpose of this paper, this research focuses on the conceptual framework and receptiveness of the implementation of the framework in a new-teacher induction program.

Participants

Participants in the online learning community consisted of new teachers entering as full-time employees, administrators (building principals, superintendent, assistant superintendent, director of curriculum and instruction, special education director, and special education coordinator) and veteran teachers from the school district, and professors in schools of education from three area universities. The purpose for the varying positions was to incorporate a variety of expertise to form a strong support system for the new

inservice teachers. New-teacher induction programs supported by a variety of support personnel create strong networks of support for new teachers (Burton & Greher, 2007; Feiberg, 2002; Ingersoll 2003; Marable & Raimond, 2007; Wong, 2005). Figure 2 illustrates distribution of participants.

The program evaluation took place in a school district with approximately 4,500 students in southwestern Pennsylvania. Teachers newly employed for the 2009–2010 school year took part in the induction program and online learning community. Administrators, principals, veteran teachers, and university professors volunteered as contributors in a number of forms (presenters, discussion board monitors and participants, and sources of resources and support). The researcher chose contributors who could provide expertise according to the identified professional development topics (technology and Web 2.0 technology in the classroom, assessment and grading, differentiated instruction, special education).

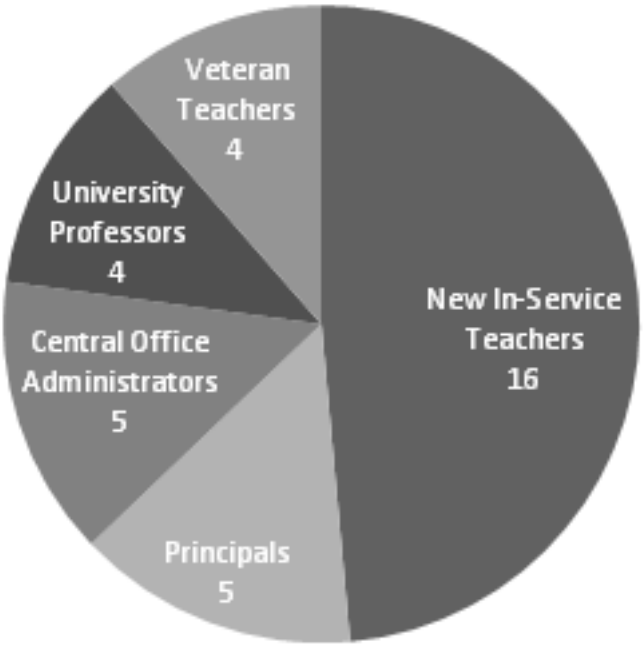

Figure 2. Participant distribution by type.

Materials

A wiki from Wikispaces was used as the online learning community platform. The researcher utilized a Wikispace wiki for four principle reasons. First and foremost, a wiki is relatively easy to use and attractive to teachers to upload documents, video, podcasts, etc., on the page. Second, Wikispaces provides free wikis to K–12 educators in the field. Third, a Wikispaces account provides two gigabits of storage space with an option to pay for additional storage space. Finally, a Wikispaces wiki has the option of password protection; therefore, the online community can be limited to only those invited to maintain a private learning community environment. Table 3 provides an overview of the procedures followed to create the online learning community wiki.

Once the researcher chose the wiki as the social operating system for the online learning community, it was essential to establish the virtual meeting place. The researcher organized the online learning community opening page portal according to the identified

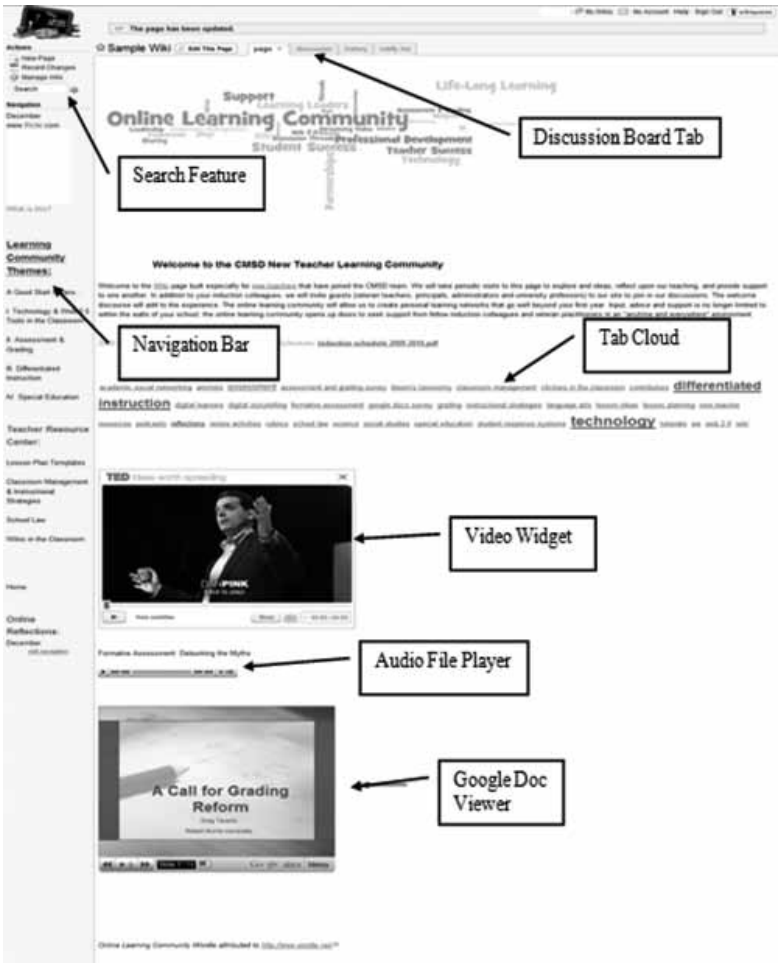

Figure 3. Screenshot of online learning community portal page.

Table 3. Step-by-Step Overview of Online Learning Community Development Process

Step	Procedure
Step 1	Online learning community platform selection
	Choose social operating platform
	Wiki
	Navigate to www.wikispaces.com
	Identify wiki for purpose of K–12 education
Step 2	Account setup
	Register with service provider
	Invite members
Step 3	Portal organization
	Establish front page of wiki
Step 4	Wiki navigation design
	Navigation bar
	Tag cloud
	Search function
Step 5	Professional development thematic pages design
	Professional development focus areas
	Wiki template pages
Step 6	Content creation
	Links
	Embedded video
	Video tutorials
	Audio
	Text files Google Docs Discussion boards
Step 7	Notification feature setup
	Page edits
	Discussions
Step 8	Reversion
	Page history
	Revert to previous version

professional development themes. Navigation throughout the wiki was achieved through multiple methods familiar to common Web navigation, including a wiki navigation bar, site search feature, and tag cloud. Figure 3 identifies the key features on the online learning community's main page.

The researcher chose to organize the wiki pages according to the established professional development themes from the 2008–2009 pilot study: technology and Web 2.0 in the classroom, assessment and grading, differentiated instruction, and special education. This format allowed the members to locate information on the topic and share content related to the topic, and it quickly pointed to the direction of the community's discussion location.

Once the researcher created the theme pages, he added content in a variety of forms to provide information for the members of the community. He introduced the topic with direction to other forms of information found on the theme page and created links that allowed the researcher to differentiate delivery of the content. For example, a reader who may not be familiar with the phrase Web 2.0 could select the term to follow a hyperlink to another page on the wiki or another website with further explanation of the term. Other forms of information sharing conducive to varying learning styles were also found throughout the wiki.

The researcher embedded videos from other websites and self-created video tutorials on topics of discussion that might best serve visual learners. The video segments were short in duration, averaging about 3 minutes. He used the videos to help spark discussions on the discussion boards.

Audio learners had access to netcasts on the wiki. The netcasts were longer in length compared to the videos and could be downloaded to a portable player. In addition to video and audio, sharing tools were modeled and promoted throughout the wiki.

The researcher embedded documents such as PDF files and PowerPoint slides through the use of Google Docs. By using Google Docs, the members had the opportunity to download the files to their own computers grow their own personal learning networks.

The final information component was the discussion board. The researcher added a discussion board tab to each wiki page to promote collaboration in the online learning community. The discussion board served as the common meeting place to ask questions, share information, seek support, and network.

One of the key features of the Wikispace wiki is the notification tool. The tool automatically notifies the member of the wiki when new content is added to the wiki. The researcher promoted the use of the notification feature by creating and sharing a video tutorial demonstrating how to turn on the feature.

Another important feature is the reversion tool. The tool allows the organizer of the wiki to revert back to a previous version in case one of the members accidentally deletes or changes content on the wiki. The reversion tool takes the fear out of accidentally doing something wrong on the wiki because the organizer can always revert back to a previous version.

The initial start-up and organization of the online learning community takes a considerable amount of time for the

developer. However, once the wiki pages are established with a variety of information resources, the researcher and the learning community members found the online learning community started to grow and expand due to the members of the community adding content and sharing resources. Steps 6–8 (see Table 3, p. 9) were followed throughout the length of the program when information was added to the wiki. Often content was added as a result of contributions from the contributors and to help address questions that came about from the face-to-face meetings and discussion board posts.

Procedures

To find meaningful answers to the research question, an appropriate research design and associated methodology is a requirement. Bilen and Casella (2007) state, regarding qualitative dissertations, that "the context in which you produce it is as significant as the topic you write about" (p. 3). From the purpose of this study, it is apparent that a context is extremely important. To answer the research question, experiences as described from the participants' perspective must be captured and explored to draw meaning. However, certain aspects of the study can be examined through a quantitative lens.

Quantitative research in the form of descriptive research focuses on the black and white, with little consideration of those grey areas where qualitative approaches can be implemented to supplement data collection. The use of descriptive statistics provides quantitative descriptions about the sample in a manageable form (Trichom & Donnelly, 2007, p. 264). It would be an injustice to not consider quantitative aspects of the study to provide a more well-rounded analysis of the study's results. The use of surveys can allow the researcher to capture descriptive data about the participants in an efficient and effective manner. Therefore, the researcher applied a mixed-methods, triangulated strategy in carrying out the evaluation components of this study. By applying a mixed-methods approach for the evaluation of the online induction program, the study can draw a clearer picture from the data.

To collect data, the researcher used a number of instruments in the study. The researcher collected quantitative data through surveys and tallies of the types of interactions that took place on the wiki. The quantitative data were complemented by qualitative information from discussion board threads, questionnaires, and focus groups. The researcher used multiple instruments and sources to triangulate the data to add to the validity of the study (Creswell, 2009, p. 191).

Presurveys. To establish a baseline, the researcher gave a self-constructed presurvey to all participants of the study. The new inservice teachers and contributors were asked to complete a pre-survey so that data from both groups taking part in the program could be captured. The content of the new teacher presurvey varied from the contributor presurvey.

The new teacher presurvey served a dual purpose. First, the survey results provided the researcher with information on the teachers' prior knowledge and understanding of upcoming induction topics. Second, the presurvey results provided a baseline measure that was used for comparison to the post-survey results. The new teacher presurvey was divided into sections related to: (a) comfort, familiarity, and usage of Web 2.0 technologies; (b) accessibility to seek support; (c) discussion boards as a source of reflection and support; and (d) areas dealing with the planned induction themes: integrating technology in the classroom, assessment and grading, differentiation of instruction, and special education as it relates to inclusion.

The researcher essentially used the contributor presurvey to provide a baseline measure of contributors' understanding and usage of an online learning community's mechanisms relative to serving as a source for information and support system. The contributor presurvey sections included: (a) comfort, familiarity, and usage of Web 2.0 technologies; and (b) discussion boards as a source of providing support. To ensure the survey items were helpful in answering the study's research questions, the researcher mapped all survey items according to research question.

Discussion boards. The discussion boards served a means for the online learning community's participants to communicate, reflect, share, and seek support. Asynchronous discussion technology allowed participants to communicate without being available at the same time. Such convenient forums to seek commonality may lead to avenues of "collective inquiry" (DuFour, 2008) found in face-to-face professional learning communities. DuFour (2008) describes collective inquiry "as the process in which educators engage as they make significant decisions" (¶ 2). The researcher also analyzed collective inquiry and the group's response to find understanding through qualitative analysis of the discussion boards.

The researcher asked new teachers and contributors to take part in the discussions on a monthly basis for a one-week time period. Teachers posed questions and responded to other teachers' questions, and contributors answered questions, facilitated reflection, and networked with teachers.

The discussion boards provided a manner in which the teachers could take part in a self- and collective reflection process. The advances of online technologies have created effective ways for teachers to perform such reflective practices (Holdan & Hansen, 2009).

To capture the experiences on the discussion boards, the researcher examined quantitative and qualitative aspects of the discussion board posts. He counted total number of posts as a whole learning community and individual participant posts to help determine the receptiveness of this form of communication. The researcher qualitatively analyzed patterns among the discussion threads and the content of the threads to determine the effectiveness of the online learning community. He coded and identified patterns for types of interaction and discussion content in the discussion board threads as follows:

- Teacher to Group (TG)
- Teacher to Teacher (TT)
- Teacher to Contributor (TC)
- Contributor to Teacher (CT)
- Contributor to Contributor (CC)

The researcher summarized these data using percentages of posts falling into each category. In addition to the type of interaction among the discussion board posts, he also coded the actual content of the discussion board threads for patterns to identify common themes among the threads. To establish a consistent systematic process in the analysis of the discussion board data, he used the following coding procedure in the study:

1. The researcher copied discussion board posts from the wiki and pasted them into a Microsoft Word file.
2. The researcher read the entire discussion board thread to gather the overall "sense" (Tesch as cited in Cresswell, 1990, p. 186) of the discussion.
3. After reading the entire thread, the researcher went back to the original post and labeled the correspondence according to the types of interaction previously identified as TG, TC, CT, and CC.
4. Next, the researcher used the Microsoft Comment Tool to identify lists of topics.
5. After reviewing all the posts in this manner, the researcher went back to sort the topics to identify common clusters of topics to create categories (Berg, 2007).
6. The researcher assembled the categories to establish common themes among the discussion posts.

The systematic procedure, combined with the tallying system and using direct quotes from the discussion boards, promoted an objective view of the data and increased the trustworthiness of the results.

Postsurveys. The participants received postsurveys in May to compare responses to the presurvey results. The new teachers took a postsurvey with topics aligned with the presurvey topics and questions mapped to the study's research questions. The researcher collected the data from the surveys to formulate descriptive statistical information in the form of tables.

Table 4. New Teachers: Overall Evaluation of Online Learning Community Experience

Item	SD	D	A	SA	M	SD
Tool to Help Improve Instruction	0.0	0.0	18.8	81.3	3.81	.40
Helpful to Seek Support	0.0	0.0	43.8	56.3	3.56	.51
Dialogue Among Teacher to Teacher	0.0	0.0	43.8	56.3	3.56	.51
Dialogue Among New Teacher and Contributor	0.0	0.0	31.3	68.8	3.69	.48

Note. N = 16. SD = strongly disagree, D = disagree, A = agree, SA = strongly agree. Reported as a percent of the total number of participants.

The contributors took a different postsurvey than the new teachers to gather data about their perspective of the effectiveness of the program. The topics in the postsurvey were aligned with the presurvey items and mapped to the research questions. The researcher used the data from the Likert survey items to provide descriptive information and summarized them in tables. Similar to the presurveys, the researcher mapped each postsurvey item to a research question.

Open-ended questionnaire. The researcher asked participants open-ended questions in the beginning of May to help prepare for the focus-group session and gather additional qualitative data on the effectiveness of the online learning community. The use of a questionnaire prior to the actual focus group allowed the researcher to focus on minority opinions as well as prevailing opinions during the focus-group sessions (Berg, 2007). The researcher delivered the questions through a discussion board in the online learning community.

Focus groups. Two extended focus-group sessions lasting approximately 75 minutes each served as a final data collection procedure to gather information about the effectiveness of the online learning community at the end of May. The researcher reviewed the questionnaires prior to the focus groups. By doing so, the researcher applied an extended focus-group technique of having the participants to develop points of view prior to the focus group, therefore allowing the researcher to identify majority and minority points of view for the session (Berg, 2007). The researcher was the moderator for the focus-group sessions, which took place in the middle school library after school hours. The researcher videotaped the sessions using a Flip video camera as well as a Sony digital recorder for a backup. The researcher used the notes and video as the primary data sources from the focus-group sessions. Due to the nature of the study and the fact the researcher worked with all the participants throughout the span of the 9-month study, the researcher had established a rapport with the participants, which assisted with the focus-group moderation.

Research question. Is the online learning community accepted as a viable component of a new-teacher induction program?

The researcher used surveys, questionnaire, and focus-group data to evaluate the new program approach in the school district's induction program.

Results

Results from the data suggested a positive response to the use of the online learning community model. The researcher collected data from both the new teachers and contributors to measure the acceptance from "both sides" of the induction process.

Surveys. The researcher used a 4-point Likert scale for the survey questions. The new inservice teacher postsurvey showed that 100% of the participants agreed or strongly agreed with the helpfulness of the online learning community on a variety of items, as displayed in Table 4. To further support the positive evaluation, all the mean responses were extremely high, with little variability among the answers. Most important, there was an overwhelmingly positive response to using the online learning community to help improve instruction in the classroom.

The contributors shared a similar response to the overall evaluation of the online learning community. One-hundred percent of the contributors agreed or strongly agreed that the community was a useful tool in all the survey categories, as displayed in Table 5. The high average means among the ordinal responses with little variability demonstrates a high acceptance level from the contributors.

Discussion boards. A total of 381 discussion board replies were posted over the span of this program. Table 6 illustrates descriptive information about the discussion board posts according to the originator and target audience of each post. Interestingly, contributors generated half of the posts, with the teachers as the target audience. Conversely, less than 6% of posts were contributors holding discussions with other contributors as the target audience. Finally, the teacher-initiated responses constituted around 40% of the total posts.

In addition to looking at the origination and target audience of each discussion board post in the online learning community, the researcher identified six themes among the 381 posts using the coding process identified in Table 7.

Questionnaires and focus groups. Due to the limitation of collecting and testing the significance of ordinal data, it was important to collect qualitative data through questionnaires and focus groups to better triangulate the results. All of the participants shared positive feedback regarding their experiences using the online learning community, and many cited specific examples.

Sense of connectedness. The new teachers found the online learning community to be a positive component of their induction process. A sense of connectedness and preferred manner to reflect were the most common themes found among the new teachers' responses from the questionnaire. Table 8 identifies the themes and number of corresponding responses per theme among the teachers, whereas Table 9 identifies the themes and respondents for the contributors. Some responses overlapped themes, depending on the respondent's information.

Table 5. Contributors: Overall Evaluation of Online Learning Community Experience

	SD	D	A	SA	M	SD
Dialogue between Teacher and Teacher	0.0	0.0	15.4	84.6	3.85	.38
Dialogue between New Teacher and Contributor	0.0	0.0	15.4	84.6	3.85	.38
Dialogue between Contributor and Contributor	0.0	0.0	30.8	69.2	3.69	.48
Ability to Share Information via the Wiki	0.0	0.0	15.4	84.6	3.85	.38

Note. N = 18. SD = strongly disagree; D = disagree; A = agree; SA = strongly agree. Reported as a percent of the total number of participants.

Table 6. Discussion Board Analysis: Post Originator and Target Audience

Pattern	Number of Posts	Percentage of Total
Teacher to Group	60	15.7
Teacher to Teacher	56	14.7
Teacher to Contributor	51	13.4
Contributor to Teacher	194	50.9
Contributor to Contributor	20	5.3

Table 7. Discussion Board Themes

Theme	Characteristic
Encouragement/support	Supportive feedback
Networking	An arrangement to maintain communication or work together
Question	Posing any form of question
Reflection	Expression of thoughts based on one's prior actions
Sharing of ideas	Sharing of instructional ideas or strategies
Sharing of resources	Distribution of tangible of instructional resources

A new teacher shares:

> As a new teacher, I have found that the online learning community has been extremely beneficial to me this year. Not only does it provide a wonderful resource of ideas and strategies but also it gives you a sense that others are sharing your challenges and at the same time your successes. It was nice having your peers to collaborate with and I also enjoyed having the opportunity to learn from the many contributors that participated on our induction. (personal communication, May 6, 2010)

The contributors shared similar opinions about the sense of connectedness. An assistant principal provides a unique perspective:

> The interactive nature of the posts, as well as the wiki in general promotes sharing. I think back to the "old days" of writing down one's reflections or thoughts on a particular topic…. Sometimes, you received feedback, but only from one source, such as the individual leading the induction program. With this format, feedback comes from multiple sources and more importantly, from individuals with varying backgrounds. Also, users not only get feedback, but can respond to that feedback.... (personal communication, May 12, 2010)

Reflection. Both the new teachers and contributors identified how the experience facilitated the practice of reflection. A new teacher responds:

> I could relate with other teachers and reflect on my own practices as I read their [other teachers'] discussion threads.

A university professor shares:

> From my perspective, follow up was very important to me with the face-to-face piece. By creating the wiki, an online community was generated with the teachers

Table 8. New Inservice Teacher Questionnaire Feedback

Feedback Topic	Count of Respondents
Resource for instructional methods	12
Resource for advice	7
Allowed time for reflection	14
Allowed for feedback	12
Allowed sense of connectedness	14
Convenient form of interaction	5
Allowed avenue for support	8

Table 9. Contributor Questionnaire Feedback

Aspects of Online Learning Community	Count of Respondents
Vehicle to provide support	5
Common place to share ideas	5
Convenient form of interaction	5
Online discussions promote reflection	6
Positive evaluation of format	8

> to offer a place for support. This is important to help them create those self-reflection skills. I was able to guide them in this process.

Avenue for support. The format created an avenue for the new teachers to seek support in the community. A new teacher responds:

> The special education director came to visit my classroom as a result of our discussions on the wiki. She was able to help me with a student that I was struggling with this school year. It was nice that she didn't merely present a bunch of information to us at a meeting then leave the picture. In fact, [another new inservice teacher] has the same student in the morning and she [special education director] ended up helping both of us. (personal communication, May 17, 2010)

A central office administrator discusses how the format gave them an opportunity to interact and support new teachers:

> If it was not for the wiki, I would have never known that the teachers needed help. It gave me the opportunity to see they needed assistance, and I actually ended up visiting their classrooms and helping them with a student issue.

Recommendations for change in the format. After being asked if the new teachers would recommend any changes to the online learning community component of the program, the group discussed one recommendation. The new teachers recommended involvement from teachers in their second and third years of teaching. A new teacher explains, "I would have liked more contributions from the second-year teachers. This experience is fresh in their heads—would have been helpful. I liked reading [second year teachers'] responses because I know they just went through this" (personal communication, May 17, 2010).

When asked what the contributors would change about the online learning community experience, participants expressed varying points that were not necessarily shared among the majority of participants, with the exception of two ideas:

1. **Level of administrator involvement:** A central office administrator suggested all the district administrators take part in the new teacher online learning community experience (personal communication, May 18, 2010).
2. **Discussion format:** A university professor recommended an ongoing discussion format rather than the planned one-week discussion formats that took place monthly (personal communication, May 18, 2010).

Discussion

From a quantitative point of view, the surveys indicate a strong acceptance of the online learning community as an effective component of a new-teacher induction program. One-hundred percent of the teachers and contributors agreed or strongly agreed that the tool was helpful for aiding instruction, seeking out support, and facilitating reflection. On a 4-point scale, teachers preferred reflection via the online learning community (M = 3.69; SD = .48) over reflection via the traditional paper process (M = 1.56; SD = .89). Contributors also saw the ability to share information via the online learning community as beneficial (M = 3.85; SD = .44).

The quantitative results certainly agree with the literature on trends of preferred methods of collaborating and learning (George, 2007; Hazari, North, & Moreland, 2009; Hur & Brush, 2009). As more and more people who have experience and preferences in using digital tools enter the teaching field, the preferred methods of forming professional learning communities will be in the form of new information and communication technologies. Additionally, Hazari, North, and Moreland (2009) note the importance of focusing on shifting from teacher-delivered to student-facilitated learning and using Web 2.0 tools such as wikis as the bridge to do so.

The program design facilitates and models the use of these technologies with the intention of application in the classroom. If the intention is to apply new technologies in the classroom, teachers need the opportunities to see and utilize such technologies in context (Sheehy, 2008). It is important to note that a variety of other Web 2.0 technologies are available to educators, and the use of any of these tools has the potential to produce similar results.

The design of the study called for a hybrid approach for effective new-teacher induction. Unfortunately, research is

lacking in the area of incorporating Web 2.0 technologies as a hybrid approach to facilitate and promote learning among educators, despite the influx of new educators with backgrounds in technology entering the field (Fahser-Herro & Steinkuehler, 2009–2010; Lei, 2009). L.F. Johnson, Levine and Smith (2009) note that more and more teachers see the value of integrating online collaborative environments into their practice. As a result, school systems are charged with developing the necessary infrastructures and training from the start of the teachers' teaching experience. Finally, by applying the study's design, schools can adjust to a new trend in learning that facilitates a "participatory culture" (Jenkins, Puroshutoma, Clinton, Weigel, & Robison, 2009, p. 3)

A strong sense of connectedness and of the tool being the preferred method for self-reflection were two common themes found among the new-teacher questionnaires. Both factors help counter teacher attrition. Marable and Raimondi (2007) warn of the dangers of growing a culture of ineffective teaching practices by not providing the necessary support systems. New teachers who feel supported and share a sense of connection have greater retention rates (S.M. Johnson, Berg, & Donaldson, 2005).

The results of this program evaluation indicate that the online learning community helped counter the isolation that teachers often encounter (Hur & Brush, 2009). Through a longitudinal study, S. M. Johnson and Birkeland (2003) describe "movers" as teachers who left their positions due to feelings of isolation, whereas teachers who experienced a sense of success and connected were less likely to become movers. With opportunities to be a part of a learning community and share experiences, the design supports the positive influencing factors associated with supporting new inservice teachers and countering attrition.

The participants' input from the surveys, questionnaires, and focus-group sessions help to substantiate that utilizing an online learning community to support professional development initiatives can be very powerful. Avoiding standalone professional development approaches helps to form a true professional learning community, which is shown to best serve professional development among teachers (Clark, 2001; Darling-Hammond & McLaughlin, 1995; Darling-Hammond & Richardson, 2009; Ullman, 2009).

The online learning community also supports the "anytime, anywhere" personalized learning that Web 2.0 tools facilitate for people (Fahser-Herro & Steinkuehler, 2009–2010, p. 60). During the focus-group session, a new teacher points out the benefit of the online learning community's conduciveness as it relates to time and place. A new teacher responds, "When using the wiki, I could go home relax, eat, recharge my battery, then go online when it was best for me" (personal communication, 2010). The contributors also shared the theme of the community being a convenient form of communication. A principal explains, "It was a convenient form to put out information to teachers. You can get the information and discuss things with professionals outside your building" (personal communication, May 18, 2010). Through Web 2.0 technologies, the online learning community created convenient and personalized avenues to personalized learning networks. Web 2.0 is allowing educators to cultivate social and professional connections in convenient anytime, anywhere environments (Greenhow, Robelia, & Hughes, 2010).

Limitations

The most obvious limitation to the study is the fact that it is limited to one school district. A greater sample involving multiple school districts and a higher number of participants would eliminate this limitation. Additionally, someone who works for the school district designed and coordinated the study. However, the potential for someone at the university level to study such a program through a school district–university partnership is certainly a real possibility to potentially reduce potential bias.

Implications

The online learning community's overall evaluation as an accepted component of this school district's induction program has proven to be a positive addition. Responses on the participants' surveys, responses on the questionnaires, and discussions in the focus-group sessions all strongly indicate that the school district should continue the use of the online learning community. The new-teacher induction online learning community framework enhanced and expanded the experience of both the new teachers and contributors.

As more and more teachers and contributors take part in the new induction format, it is reasonable to speculate that there is potential to expand the online learning community format beyond new-teacher induction purposes. The format creates an anytime, anywhere professional development opportunity for educators in the school district to share ideas, instructional materials, and guidance through the discussion component.

Overall, the education field is in need of empirical research on the impact of these new and powerful ICTs. In particular, the role of Web 2.0 tools in developing and enhancing professional development communities of practice in the school setting is lacking in today's literature. The strong positive results from this study call for expanded research in the area on a grander scale involving a larger sample of schools with varying characteristics.

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