Promoting Community for Online Learners in Special Education

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Abstract

This study examined the sense of community in an online course for special education teachers enrolled in a master's program. The sense of community in an online environment may contribute to students' success and satisfaction (Knapczyk, Chapman, Rodes, & Chung, 2001). This article provides an example of a process for online community development and implementation that may foster a sense of community among learners, a tool that can be used to measure sense of community and insights from students who responded to this tool. Analysis of survey results from two cohorts of students who completed two sections of an online course in special education shows that the level of community they experienced was "just about right." This study highlights themes generated that include (a) favored course components (Elluminate sessions, learner-centered activities, and course convenience), (b) factors contributing to sense of community (communication, safe environment, supportive instructor, and opportunities to network across the group), and (c) problematic course components (technical issues and general dislike of online learning format). (Keywords: online community, special educators, online pedagogy, measuring sense of community)

Online learning is one of the fastest growing phenomena in the educational use of technology. Within the field of teacher education, there is dissonance around the long-term effectiveness of online education compared to traditional course offerings in K–12 or teacher education programs (Ferguson & Tryjankowski, 2009; Alexander, Lignugaris/Kraft, & Forbush, 2007; U.S. DOE, 2009). Online pedagogy in teacher education is here to stay and is changing the way education is accessed. Flexibility and convenience are some of the biggest advantages of online learning, as they enable a greater proportion of students to continue their education (Smith, 2001). Proponents of online learning argue that it transcends convenience and offers a more advantageous mode of learning than a physical classroom setting can (Blair & Hoy, 2006). However, other teacher educators argue that the elimination of the social environment produces a myriad of problems (Thrope, 1998). Further, opponents of the major movement toward online learning suggest that the classroom as a community of learning is compromised and argue that the greatest learning and personal growth come from face-to-face (F2F) cooperative and group work (Hassenburg, 2009). These variables must be considered as online pedagogy continues to be integrated into teacher learning opportunities. Developers of online learning must pay attention to the fostering of social interactions across a group of learners, which ultimately contributes to a strong sense of community in an online atmosphere.

Educators are applying more integration of interactive technology to facilitate social interactions in online learning communities to offer the capacity to nurture social interaction across a group of learners. The strategies and tools they have applied to foster a sense of community and collaboration in the online learning arena include the use of virtual conference rooms (Hobbs, Day, & Russo, 2002), student-led facilitation activities (Bran & Correia, 2009), use of photovoice (Perry, Dalton, & Edwards, 2009), and structured interaction protocols (Dabbagh & Bannan-Ritland, 2005). Evaluation of such tools has examined how participants create knowledge and/or construct meaning through the community connections (Littleton & Whitelock, 2005). The impact of such technologies on the creation of community appears to extend the relative efficacy of online and F2F instruction in a meaningful way.

Creating an Online Collaborative Community

Increasingly, educators are designing online pedagogy to enhance the quality of learning experiences and outcomes for learners (Blair & Hoy, 2006; McDonald & Thompson, 2005). Two shared beliefs about how to enhance the online experience and improve learner outcomes are the need to create an online community of learners (Bransford, Brown, & Cocking 1999; Riel & Polin 2004; Schwen & Hara 2004; Vrasidas & Glass, 2004) and the idea that available technologies can be used to expand and support a sense of community. Sense of community refers to the perception of similarity and strong interdependence with others and the feeling of being a member of a stable group (Sarason, Davidson, & Blatt, 1986). Sense of community is very relevant for learners, as it has been shown to contribute to the successful completion of an online course (Rovai, 2002). A host of positive outcomes has been attributed to developing collaborative environments that constitute a community. Palloff and Pratt (2005) identify specific pedagogical benefits of online collaborative learning, to include development of critical thinking skills, co-creation of knowledge and meaning, reflection, and transformative learning. Shaw, Duffy, and Stark (2000) suggest that skills gained from the experience of collaborative learning may also be highly transferable to team-based work environments, such as the school or

classroom. Attention has begun to focus on issues and technologies associated with sense of community in online environments that cater to special education teachers (Knapczyk, Frey, & Wall-Marencik, 2005). Online technologies have opened up many possibilities for teacher education and continuing professional development in the field of special education. For example, online technologies have created new possibilities for supplemental training for community-based early-childhood service providers and personnel preparation coursework in the area of early intervention on an international level (Ludlow, 2003). Numerous researchers in special education have examined online learning from the perspective of student satisfaction and grades (Gersten, Keating, Yovanoff, & Harnis, 2001; O'Neal, Jones, & Miller, 2007; Spooner, Agran, Spooner, & Kiefer-O'Donnell, 2000). There is a need to extend this research base to examine students' experiences as members of an online community of learning that influences pedagogical understandings and practices (Sindelar, Brownell, & Billingsley, 2010).

Measuring Sense of Community
Valid scales that measure the sense of community in online courses are very relevant for the planning of interventions to promote the feeling of being a member of the class. Drawing from research on neighborhood communities, McKinney, McKinney, Franiuk, and Schweitzer (2009) identified six variables that instructors could manipulate to promote sense of community in the college classroom: connection, participation, safety, support, belonging, and empowerment.

We ultimately used these variables to develop a valid Sense of Community Questionnaire. The present study adopted this instrument to evaluate teachers' experiences of an online course developed to promote a sense of community among the learners.

This study attempts to identify the organizational conditions that can effectively support the development of the sense of community. The course was strategically designed and implemented around a model of learner engagement that supports the six variables of participation, safety, connections, support, belonging and empowerment. Table 1 (p. 110) illustrates the relationship between key course factors and the sense-of-community constructs the instrument measures.

Our research question focused on whether this pedagogy would lead to a sense of community that teachers perceived as beneficial to their learning. We used the survey, which measures a sense of community, to gain insight from the teachers about their online experiences in the course. Thus, the primary aim was to explore a sense of community in an e-learning environment with special educators.

Method

Participants
Participants ($n = 19$) in the study included a convenience sample of graduate special education majors who were enrolled in an online course with two sections (Section 1: $n = 9$; Section 2: $n = 10$) and who ranged in age from 21 to 64. All participants were female, white, and native English speakers. The majority of participants ($n = 14$) were enrolled in the first year of their master's degree program, one was in her last year, and four identified as non-degree-seeking students. Twelve participants were elementary special education (ESE) teachers, two were ESE liaison/specialists, one was a pre-kindergarten ESE teacher, another was a full-time student, and three participants did not specify employment type. All participants had received special education certification or alternate certification.

Course Overview
The semester-long, 3-credit-hour graduate-level online course is an elective for a 36-credit-hour master's program in special education with a concentration in intellectual disabilities and a required course for a graduate certificate in disability—severe/profound and a state endorsement in severe disabilities.

The course includes content related to overall curriculum planning and implementation for students with severe/profound disabilities. Based on a model of systematic instruction, the course offers opportunities to analyze and reflect on the selection of meaningful instructional content for an individual student, encompassing both general education and alternate curriculum content. Emphasis is also placed on the selection and use of evidence-based practices and appropriate accommodations/modifications within natural settings, including general education classrooms, regular campuses, and the student's home and community context.

Course Module Information
The course includes five asynchronistic modules and five real-time teaching and learning sessions, which alternated. The asynchronistic learning experiences were developed using a consistent learning cycle for each module. The learning cycle includes a:

- Video introduction in which the instructor presents key concepts of the module and makes the connection to classroom teaching and learning
- Thinking activity that prompts teachers to consider the experiences and knowledge they already have relating to the content of the module
- Reading activity that may be instructor- or self-directed
- Video activity that has students analyze an unfamiliar classroom and apply a key piece of learning from the module
- School/classroom activity where the students carry out an assignment in their own classrooms (may be the same as the activity they carried out in the video analysis)
- Writing activity in which students write about their learning through the module following a writing prompt
- Peer sharing activity where students share and respond to the work of a colleague in the class following a set protocol

Table 2 (p. 111) provides details for each module. The first module offers an introduction to the structure

and expectation of the modules. This introduction includes familiarization with both the process and content of the asynchronistic learning. The intention was for teachers to become familiar with the process they will engage in, including the range of activities at each stage of the module cycle. This makes explicit the expectations of them as learners, which can help facilitate familiarization of and orientation to an online learning context (West & Jones, 2007). The second module explores the historical and legal perspectives of curriculum development and models for students with severe/profound disabilities. The third module focuses on an analysis of the Florida Access Points and their place in instruction for students with severe/profound disabilities. Access Points are extensions of the general education curriculum Sunshine State Standards (SSS) and have been developed to capture the essence of SSS with reduced levels of proximity (FLDOE, 2010). The fourth module explores the range of research-based instructional practices for students with severe/profound disabilities, and in the final module, teachers analyze data-driven instruction for students with severe/profound disabilities. The modules are spread across the 16-week course with set times to submit each complete module. The instructor reviews modules in an ongoing way and gives continuous qualitative developmental feedback to the teacher.

Real-Time Virtual Session Information

The instructor used the software Elluminate Live to create real-time virtual meetings where students could access a virtual space. The university subscribes to Elluminate, and access to it is included in students' course fees. Students can download any supporting software (Java script) for free. The virtual classroom offers the opportunity for students to talk, text, and present their work using a shared electronic whiteboard. Elluminate allows students to share their desktops and provides access to resources on the Web. It also has the capacity to transmit video of the instructor. Smaller virtual rooms also allow

Table 1. Key Course Factors Related to Sense of Community

Sense of Community Variables	Key Course Factors
Connection	Video introduction by instructor
Participation	Prethinking activity Reading (instructor or self directed) Video practice
Safety	Consistent learning cycle
Support	Classroom practice Instructor-led introductory session
Belonging	Peer sharing and responding Students participate in small group discussions
Empowerment	Writing about learning activity Students discuss, share, present work (key curriculum issues in modules)

for smaller group discussions. In each 2-hour Elluminate class, the instructor produced a PowerPoint presentation to guide the flow of the session. The PowerPoint always began with a question-and-answer time so that students could share and resolve emerging issues from the module engagement. In each Elluminate session, teachers spent 75% of the time in a smaller group where they have opportunity for more in-depth discussions with peers. For example, in Session 2, following a general welcome, technical check, and question-and-answer time, teachers received prompts to discuss in groups of four, in which group members must explicitly relate to the article notes they have completed. Each group elects a reporter and recorder to capture the discussion and feedback to the whole group. Breakout sessions last 15–20 minutes before the large teacher group reconvenes. As each group reports back, the instructor types emerging issues on the shared whiteboard. The instructor then gives the teachers a second group activity that develops from these emerging issues. This occurs an average of two times during the course of the class. The session concludes as the instructor clarifies and explains teacher engagement for the following weeks. At the end of class, the instructor stays online to meet individually with teachers as appropriate.

Data Collection

Design. Research to gain nuanced understandings of complex ideas, such as good teaching or understanding key

factors within an instructional milieu, is often approached pragmatically through the use of mixed methods (Croninger & Valli, 2009, Fenstermacher & Richardson, 2005). Specifically, this study relied on the use of qualitative and quantitative data collection procedure and analysis. As this study sought to identify instructional factors that contributed to students' sense of community, we used descriptive statistical procedures, content analysis, and subsequent content mapping to facilitate an understanding that quantitative methods alone might not accomplish (Creswell, Plano Clark, Gutman, & Hanson, 2003). This approach allowed researchers to examine key course factors thought to enhance students' sense of community.

Quantitative. For this study, we performed elected descriptive statistical procedures to determine student perceptions of community within the course, due to the small sample of students (19 students across the two course sections) who completed the survey. This consisted of identifying the mean rating accorded to each survey item and sorting them based on strength of indication on the 5-point Likert scale, where (1) indicated "strongly agree or definitely true" and (5) indicated "strongly disagree or definitely not true."

Qualitative. The researchers compiled the participant responses to the open-ended questions into a single document for review. We selected an adapted grounded theory approach (Meadows & Morse, 2001) to guide the analysis, as it allows researchers to search for meaning

Table 2. Modules with Descriptions of Core Content

Modules	Description
Session 1	Provides an introduction to the modules and makes teacher engagement explicit across the stages of the module.
Session 2	Presents key historical and social issues in curriculum development for students with low incidence disabilities. For this session, teachers prepare notes on an allocated article relating to the development of evidence-based instructional practices.
Session 3	Each teacher brings the activity notes in which they examined the connections they make in their classroom to the Access Points, including a description of one of their favorite instructional activities.
Session 4	Teachers develop a revised "principal walkthrough" protocol that embraces evidence-based instructional practices for students with low-incidence disabilities. During the session, they present, discuss, and process the emerging issues from these protocols.
Session 5	This is an open-agenda session where teachers suggest topics they would like to discuss with their colleagues. Two weeks prior to the session, the instructor puts out a call for topics and generates the list of topics a few days before the Elluminate session.

while bracketing predetermined ideas or theories. We reviewed the content and identified general themes during a research team meeting. Following this, one of the researchers coded the document, further defining the general themes and expanding or identifying new themes as necessary. We used Atlas Ti, a popular computer-assisted qualitative analysis software program, during this process and to generate the code-relationship map. Finally, researchers met to discuss the findings and relationships among the emergent themes. We also noted questions that arose from the findings and limitations of the study.

Instrumentation. The current project adopted the Sense of Community Questionnaire to investigate sense of community in two sections of an online special education course across a number of variables to determine student attitudes and learning. The Sense of Community Questionnaire includes 33 Likert-type items (1–5 scale ranging from "strongly agree" to "strongly disagree") to assess sense of community in a course across six constructs: connection, participation, safety, support, belonging, and empowerment. Further description of the constructs and instrument development can be found in an article by McKinney, McKinney, Franiuk, and Schweitzer (2006). Using the questionnaire, respondents rate 33 statements such as: "Students in this class would be able to resolve conflict if it arises in class," and "Students in this class support one another." The questionnaire also provided a single item to

rate their overall sense of community (1–3 scale). We also included three open-ended questions: "What is it that you feel contributes most to your sense of community in your class?" "What is the best thing about being in this class?" and "What is the major problem facing this class?"

McKinney, McKinney, Franiuk, and Schweitzer (2006) evaluated the instrument for reliability, bias, and internal consistency. Results indicated that the instrument was highly reliable using test-retest over the period of one semester, with an internal consistency of .91 in the first test and .92 in the last test. In terms of bias, they found a lack of significant correlation using the Marlowe-Crowne Scale, indicating that students were not simply responding to the questionnaire in a socially desirable manner. There was no evidence of negativism bias, as all but one of the items were phrased positively. Further, McKinney et al. tested a negatively phrased version of the instrument with an independent group of students from a different class. These data revealed a .921 alpha confirming internal consistency.

We administered the survey as a course evaluative measure to two sections of the course a single time near the end of the semester. Students in each section experienced the same course learning-cycle elements that were designed to promote a sense of community. Students submitted the completed surveys to a teaching assistant on the course. This teaching assistant collated all of the completed surveys to maintain anonymity. There was 100% return rate of surveys.

Results

Findings from the response to the survey items and the open-ended qualitative data offer an insight into students' experiences of sense of community in the two sections of the course. Survey findings indicate that participants (in both sections) felt a sense of community, and that they also felt an adequate level of comfort when working with the instructor and peers throughout the course. The qualitative data in this study provided reinforcement to our interpretation of the quantitative data and both provide suggestions for potential further examination of the identified themes.

Quantitative Findings

The survey contained 32 items rated on a 1–5 Likert scale, one item on a 1–3 Likert scale and three open-ended questions. The single item (1–3 Likert scale) asked students to indicate their overall sense of community in the course, where 1 indicated "not enough community," 2 indicated "just about right," and 3 indicated "too much community." Across both sections, all but one of the 19 participants (94.7%) indicated that the course was "just about right" in terms of their overall sense of community. Disaggregated, students from the first section indicated an overall mean of 2.28, and students from the second section indicated a slightly lower mean of 2.21; the overall mean score for both groups was 2.37. This provides confirmation that students believed that the level of community created within the community was not lacking or excessive. As there were no apparent differences between groups of students in terms of demographics or overall sense of community, we merged the sets of data. Table 3 (p. 112) lists the means and standard deviations calculated for each survey item across both groups of participants. This table lists the items in ascending order, showing item means where students (1) indicated "strongly agree or definitely true" and (5) indicated "strongly disagree or definitely not true." Table 3 does not include the single 3-item Likert question about overall sense of community.

Qualitative Findings

Ultimately, three overarching themes emerged in relation to promoting a sense of community: (a) favored course components (Elluminate groups, learner-centeredness, and course convenience), (b) factors contributing to sense of community (communication, safe environment, supportive instructor and networking), and (c) problematic course components (technical issues and general dislike of online format).

The three most frequently cited elements under Theme A (favored course components) that contributed to a sense of community in the online course included (range 1–7): Elluminate groups (6), learner-centeredness (4), and course convenience (4). Most students reported that the course was convenient and the use of Elluminate promoted engagement in the course and fostered a sense of community. One student stated, "Having virtual class meetings where we can converse is an improvement over the online classes I have taken that have no opportunity to talk with classmates. I miss the networking opportunities presented by real-time classes." Another student indicated that this technology allowed her to network with a community of professionals: "Having classmates from all over the state with different experiences and perspectives and being able to learn from an excellent professor that I would otherwise not have contact with since I am in another part of the state."

The four most frequently cited elements under Theme B (factors contributing to a sense of community) included (range 1–7): communication (6), safe environment (6), supportive instructor (5), and networking (4). One student made this comment that illustrates these themes: "We were able to share feelings and thoughts about issues that we have in the classroom. Everyone was very open about our thoughts and beliefs. We were all part of education so we have one thing in common--children." The same student also shared a comment related to the themes of communica-

tion, safety and support, which also highlighted the role of the instructor in maintaining relationships across the course and providing constructive and regular feedback:

> The best thing about this class was sharing our thoughts and ideas about education. I loved how we interacted with each other and gave each other advice. I think that the teacher is another factor about having a great class. The professor was a wonderful teacher that is full of great knowledge and gives wonderful advice. She gave feedback as soon as possible.

The two most frequently cited elements under Theme C (problematic course components) included: technical issues (7) and general dislike of the online format (5). One student identified her concerns with technology problems: "The problem that I saw was trying to stay on the Internet. I noticed some people that were in class were booted off many times. And these people also had trouble getting back on the Internet." Further, some students were simply not comfortable with aspects of the synchronous technology: "I dislike the virtual technology. I like Blackboard, but not Elluminate." However, it appeared that the technology glitches were minor or

Table 3. Survey Data by Ascending Means

Questions	N	M	SD
Students feel comfortable asking questions	19	1.42	.507
Students work together	19	1.68	.478
Students can persuade professor to respond	19	1.74	.562
Students support each other	19	1.79	.713
Students have voice in class decisions	19	1.79	.631
Students feel safe expressing views	19	1.79	.631
Students willing to work together & share grade	19	1.79	.535
Students talk about problems	19	1.84	.501
Students help each other out	19	1.84	.765
Students feel they belong	19	1.84	.602
Students can make it a better course	18	1.89	.758
Students volunteer for class projects	19	1.89	.567
Students help each other	19	2.00	.577
Students can create solutions	19	2.00	.577
Students like each other	19	2.05	.621
Students are able to resolve class conflicts	19	2.11	.567
Students think of class as community	19	2.21	.855
Students share same values	19	2.26	.562
Students committed to class success	19	2.26	.991
Students trust each other	19	2.32	.820
Community spirit exists	19	2.32	.885
Students comfort each other	19	2.37	.597
Students get things done to improve class	19	2.42	.838
Students feel connection	19	2.47	1.020
Students influence each other's behavior	19	2.47	.841
Students know each other	19	2.53	.772
Students socialize	19	2.58	.838
Students do things together out of class	19	2.68	.946
Students borrow from each other	19	2.95	.524
Students feel like a family	19	3.00	1.000
Students feel isolated	19	3.53	.905

nonexistent for the majority of students. A few students expressed concerns around technical challenges in relation to online group assignments, projects, and peer review activities, as they were expected to interact with different peers for different activities through the Elluminate platform. One student indicated she would prefer to work with the same group members throughout the semester to provide some continuity to her own community of learning.

Limitations
Although we suggest replication of this study and further instrument validation, generalization of this study beyond this sample should be limited. The convenience sample we selected was small and homogenous. As the purpose of this study was not to validate the instrument, we did not conduct lack of test-retest procedures or use an independent group for assessing internal consistency. Thus, interpretation of results should be focused on understanding what the participants of this course perceived about their course and inferences we assert are strategies instructors can utilize to promote a sense of community in online special education courses.

Discussion and Implications
Findings from this study are useful to teacher educators because they raise awareness of variables and activities that align to these variables that can be used to promote a sense of community in an online course format. This sense of community is critical for special educators to promote learning and retention and to perhaps alleviate the isolation they may feel within the profession. The primary purpose for this study was to measure a sense of community in an online special education course where course design followed key course factors aligned with six variables thought to relate to sense of community. We recommend that developers pay attention to these course factors and variables to promote a sense of community. Sense of community was achieved by designing student engagement to support:

- The connection of the course content to the context of the classroom through the use of video and assignments focused on classroom practice
- The active participation of students in their learning as they implemented activities and analysis in their own classrooms
- A sense of belonging to the course and the group of learners through the use of real-time sessions and opportunities for students to dialogue with each other in pairs and small groups
- Opportunities for students to feel supported and safe in their learning through individual e-mail communications between the instructor and the students and the provision of constructive feedback on module submission
- A sense of empowerment through the use of initial course audits in which students completed a survey that recognized what experience and knowledge each brings to the course, along with a personal target-setting activity; during this activity, students also choose the foci of their assignments for self-directed study

The variables above were used to support students' engagement, and teacher educators can use them, along with key course factors, at the outset of course development to systematically design a course that fosters a sense of community among participants. In addition, the Sense of Community Questionnaire could be a useful tool to measure participants' sense of community in an online course. We discuss the implications of our findings, which generated three overarching themes for teacher educators, below.

Theme A: Favored Course Components
Data indicates that students found the course modules, group projects, peer reviews, and group assignments using Elluminate to be favorable components of the course. The learner-centered design of the course components appeared to provide opportunities for interaction, and the instructor provided a sense of safety and support. Interactions with

instructors are a key variable in F2F courses, and this interaction is equally important in an online environment. This course was designed to allow students the opportunity to construct their own learning in multiple ways, which was mediated between synchronistic and asynchronistic teaching and learning experiences.

The balance between the different mediums of teaching and learning appeared to work well for this group of students. The right balance between the two mediums needs to occur and can be managed by the instructor across a course. This balance may change across cohorts of students (although in these two groups of students, it remained the same). One way to do this is to gather student evaluative data during several points in the course, then use this feedback to modify the balance between the mediums of synchronistic and asynchronistic elements to create a sense of community sensitive to the need of the students in the course. Too often instructors rely on one modality, which may hinder participant's engagement with content. Asynchronous discourse is inherently self-reflective and may be more conducive to in-depth individualized and personalized learning (Harlen & Doubler, 2004; Hiltz & Goldman, 2005; Jaffee et al., 2006). All learning experiences can be understood in part through the amount of control that the student has over the content and nature of the learning activity (Moore, 1993; Anagnostopoulos, Abasnadjian, & McCrory, 2005). In traditional didactic or expository learning experiences, content is transmitted to the student through a lecture, written material, or other mechanisms, which represents a long-established approach to learning both F2F and online. Such conventional instruction is often contrasted with active learning, in which the student has more control of what and how he or she learns. A more sophisticated development of active learning is interactive learning, where the nature of the learning content is emergent

as learners interact with one another and with a teacher or other knowledge sources (Putambekar, 2006). Technologies can support any of these three types of learning experience in an online format, but it is during interactive learning, where the learner builds knowledge through inquiry-based collaborative interaction with other learners, that they become co-learners and act as facilitators of the learning. In other words, they become active participants of a proactive community of learning. The students in this study responded favorably to the elements of interactive learning and indicated how this engagement had increased their sense of community in the course. In interactive learning, technology has the power to mediate human interaction either synchronously or asynchronously; learning emerges through interactions with other students and the technology.

Theme B: Factors Contributing to Sense of Community

Students indicated that a sense of community was initially established by the instructor, who provided opportunities for the students to get to know each other within a safe, caring environment. Bain (2009) suggests that teachers are instrumental in creating environments that welcome and encourage deep and transformative learning about a discipline. In many professions, this is most effectively accomplished when the learner moves from being on the periphery to sensing that they are legitimately situated within a community of practice (Lave & Wenger, 1991). To foster a sense of safety and promote student engagement, the instructor used video and assignments focused on teachers' classroom practice. Students were also active in their learning by planning to carry out activities and analyses in their own classrooms. The instructor fostered a sense of belonging in the course among the group of learners by using Elluminate, but more importantly by valuing student contributions, providing quick and constructive feedback via e-mail, supporting interaction by engaging students in paired and group work, and empowering students to set individual professional goals to guide themselves throughout the course.

Theme C: Problematic Course Components

Clearly, technical issues can detract from the development of an online community, and this was evident in students' responses to survey questions. In their meta-analysis of literature on F2F, online, and blended learning environments, Zhao et al. (2005) asserts that "the quality of distance education programs is influenced by the same set of factors that affect the quality of face-to-face education" (p. 1843). They found factors that make a difference include, but are not limited to technology infrastructure, teacher characteristics, learner characteristics, content material, interactivity, types and use of media, and the design of assessments. Similarly, students in the present study identified concerns about online group work due to technical issues, preferences for working in F2F environments, problems in response time from peers in the reviewing process, and a desire for continuity in the membership of groups. It is clear from our findings and others (Smith & Meyen, 2003; Spooner, Agran, Spooner, & Kiefer-O'Donnell, 2000) that there is a need for further research focused on understanding the technological complexities involved in designing online instruction for adult student learners.

This article provides information about the developmental process for an online course with a focus on community development and implementation, which can promote a sense of community among participants. The teachers' responses provided a strong sense of their experience of a community of learning in an online course and affirmed that the features of the course discussed promoted a sense of community. This project contributes to the literature base for online pedagogy by building insights from teacher experiences in a course. However, because we gathered the insights from a small group of teachers (19) in a particular context (southwest Florida), they are not representative of all teachers in all contexts. They do, however, offer a small but important contribution to the value of developing online pedagogy that pays specific attention to learner engagement and community building.

Several elements appear to have contributed to the successful sense of community among teachers in this study, including clear and consistent course structure, an instructor who interacts frequently and constructively with the teachers, and a valued and dynamic discussion. These elements do not occur automatically, and developers need to pay attention to each of these aspects to promote a sense of community for participants. These areas clearly call for additional research to further determine (a) how the presentation of the instructor can promote a sense of community within a course, (b) how a sense of community affects teacher practice and related student outcomes, and (c) how online communities promote and support special educators capable of providing leadership in their schools. Beyond these needs, researchers studying sense of community in formal courses might consider examining patterns of interaction or discourse that might identify actions or strategies that promote group membership and sustainable community. Such research is vital in light of growing recognition that innovative teacher education and professional development practices, such as e-learning communities and e-mentoring, have the potential to provide ongoing, just-in-time learning opportunities for teachers, not only for cost effectiveness, but also for the ability to connect and support novice, struggling, or geographically removed practitioners (Sindelar, Brownell, & Billingsley, 2010).

Author Notes

Elizabeth West is an assistant professor of special education at the University of Washington. Her research agenda focuses on transforming communities to increase access and improve outcomes for students with low incidence disabilities. An influence on outcomes is guided by inquiry into teacher preparation and instructional procedures. Her specific research interests include (a) identifying instructional variables

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