Breaking Down the Walls of Teacher Isolation

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Electronic bulletin boards provide a support network for teachers that could reduce isolation and the premature attrition rate of teachers. Identifying ways teachers can discuss issues without fear of seeming inept is very essential for professional development (Heider, 2005). The primary purpose of this study was to determine the characteristics of family and consumer sciences (FCS) teachers who use electronic bulletin boards and examine the frequencies and content of messages and interaction they create. Analyses of messages from three FCS Yahoo electronic bulletin boards indicated that FCS teachers use the boards to discuss and reflect on issues important to their teaching and professional development while providing support for each other as members of an electronic professional community.

The professional isolation and alienation of teachers has been a major concern in the field of education, particularly for subject areas such as family and consumer sciences (FCS), where there is often only one teacher in a school building and sometimes in a school district (Bull & Cummings, 2002). Cookson (2005) reports that the "egg crate" structure of schools and a too-rigid timetable, especially in secondary schools, make professional collaboration difficult for teachers. Thus, many teachers, alone in their classrooms without access to colleagues for advice or role modeling to help solve their frequently encountered problems, are frustrated, exhausted, and discouraged.

In response to the growing concerns of practicing teachers lacking access to ongoing development and support in a classroom, it is not surprising that many authors recommend a more collaborative, nurturing, and mentoring environment to promote idea sharing and support from peers (Bodzin & Park, 1998; Heider, 2005). In our rapidly changing world, we need to develop learning communities that model the process of constant renewal and professional growth. To sustain significant change, teachers need to contribute to a shared practice of teaching (Wheaton & Kay, 1999). Without a communication network system in place, teachers often are barred from growing and developing professionally and are likely to leave the teaching profession after a few years.

The present study explored the current uses of electronic bulletin boards by FCS teachers. To better understand the computer-mediated communications of FCS teachers on the Web, the following research questions were formulated: (1) What are the characteristics of FCS teachers who use computer-mediated communication networks? (2) What are the frequencies of message threads on the electronic bulletin boards? (3) What is the content of the messages of interaction? (4) What topics promoted the greatest exchange of ideas? (5) What are the experiences of informants who use electronic bulletin boards?

Theoretical Framework

Bronfenbrenner's (1979) ecological system model provides a clear but differentiated view on contextual influences on human development. Thus, the settings for development of individuals, including professional development are examined using the complex system of relationships affected by multiple levels of the surrounding environments. According to the ecological system theory, development occurs in the interaction of individuals and groups within and across settings throughout the life course; i.e., between an active human being and the changing properties of the immediate settings in which the developing individual lives (Bronfenbrenner & Morris, 1998). This ecological model takes into account issues of person, process, context, and time, where each layer of environment is having a powerful impact on human development highlighting the dynamic, ever-changing nature of the individual's environments. Thus, an individual development is determined by individual experiences in the settings he/she spends time in addition to the number and quality of the connections between the settings. Ecological system views the environment as nested systems that include the microsystem (immediate context and relationships, for example, activities and interaction patterns in individual's immediate surrounding such as family activities and family relationships); mesosystem (interrelationships between microsystems linked to the person, for example, parent –child interaction at home is likely to affect teacher-child interaction at school and vice versa) and macrosystem- (cultural norms and values). All of these systems interrelate and influence individual development on personal and professional levels. Bronfenbrenner describes the exosystem as being "made up of social settings that do not contain the developing person but nevertheless, affect experiences in their immediate settings" (Berk, 2007, p.25). The exosystem is the outer shell surrounding both the mesosystem and the microsystem. The exosystem can be a formal organization such as a workplace, religious institutions or welfare services in the community. Exosystem supports also can be informal such as friends, extended families or social networks. Thus, the microsystem represents social networks consisting of computer-mediated communications and viewed as a part of the exosystem; connecting an individual with others based on interests and social setting.

In addition to the ecological system model, social network theory explains that social behavior and communication are affected by the patterns of ties among people (Kadushin, 2005). The theory proposes that the more people are socially connected, the more intensely they are likely to communicate using the various media available to them. The internet continues the process of connecting geographically dispersed people with shared interests through participation in social networks. In the past decade, researchers have attempted to identify specific situations, behaviors, and environments that are associated with professional development and information sharing (Boyd & Ellison, 2007). Scholars from different fields have examined social networks and computer-mediated communications in order to understand the practices, implications, culture, and meaning of the sites, as well as users' engagement with them based on professional interests.

Computer-mediated Communications

Computer-mediated communication (CMC) networks have the potential to address or break down the walls of teacher isolation and facilitate teachers' professional development (Abbott, 2003). These networks support a great deal of communication and collaboration among teachers. According to Riley (2000), CMC allows teachers to use the internet to reach out" to other teachers globally. Teachers are able to exchange ideas and ask questions at their own convenience without scheduling an appointment, playing "telephone tag," or waiting to meet

another educator. Participation in CMC is especially beneficial to teachers with busy schedules because it enables them to freely discuss teaching strategies and receive assistance. Thus, CMC helps to break down the walls that isolate teachers.

The major element of anonymity provided by CMC allows teachers to discuss issues that they are embarrassed to talk about with other teachers and supervisors in their own district (Heider, 2005). In addition, it promotes collegial and reflective practice in a non-threatening environment and ensures confidentiality for professional development. These networks offer a venue to interact personally, socially, and professionally by sharing thoughts, seeking advice, and sharing experiences with successes, problems, and failures over geographical distance (Harasim, Hiltz, Teles, & Turoff, 1995). Several studies have found that CMC provides teachers (novices and veterans) with valuable curriculum and emotional support, a channel for receiving validation about their work, motivation to challenge existing practices, and exposure to innovations in pedagogical practices (Abbott, 2003; Casey, 1997; Heider; Lehman, Warfield, Palm, & Wood, 2001).

As telecommunication technology becomes more commonplace in instructional settings, it is increasingly important to understand what types of discourse are occurring on teachers' electronic bulletin boards. Because the notion of linking teachers together is relatively new, data on the usage and value of these networks, especially in the field of FCS, were not reported in the literature.

Until now, little research has investigated the support or barriers FCS teachers encounter when pursuing continuous professional development. Furthermore, there are no studies in the literature concerning the use of electronic bulletin board communications among FCS teachers. The studies that have been conducted were designed to evaluate the use of electronic bulletin board communications among science and math teachers (Bodzin & Park, 1998). Because the Web is now easily accessible to teachers at home and in their schools, there is a need to investigate electronic bulletin board communications among FCS teachers.

Population and Sample

The target population was FCS discussion groups on the Worldwide Web (WWW). Three FCS electronic bulletin boards were selected from the records of FCS e-groups on Yahoo: North Carolina FCS (NCFACS), FCS work and family (FCSWF), and FCS-teachers (FCST). These e-groups were selected using the following criteria: (a) FCS teachers Yahoo discussion group (e-group) (b) that has 20 or more members, (c) is registered on the Worldwide Web, and (d) had posted messages for at least three consecutive months. In addition, 12 informants (a moderator and three other members of each group who posted or responded to 10 or more messages) were selected using purposeful sampling (Creswell, 2008), to glean information about the experiences of using electronic bulletin boards through private e-mails.

Research Design and Procedure

The purpose of this study was to explore uses of electronic bulletin boards by FCS teachers. Researchers specifically explored characteristics of FCS teachers who use computer-mediated communication networks, frequencies of message threads on the electronic bulletin boards, content of the messages of interaction, topics that promoted the greatest exchange of ideas, and experiences of informants who use electronic bulletin boards.

The study employed a mixed methods approach using interpretive design as the primary method (Creswell, 2008). In an interpretive design, an attempt is made to obtain data that

produce well grounded, rich descriptions, and explanations' of processes in identifiable local contexts (Creswell). The study was approved by the University Institutional Review Board. Using the constant comparative method, communication transcripts (message threads) were downloaded and read several times by the researcher to identify the type of information or discourse contained in the discussions. The constant comparative procedure involves "generating and connecting categories by comparing incidents in the data to other incidents, incidents to categories, and categories to categories" (Creswell, p. 443).

During the 12-month period of the study, a total of 691 messages were posted to the three electronic bulletin boards. The downloaded messages format was converted into text and entered into QSR NUD*IST 4 software (QRS NUD*IST 4 user guide, 1997) for analysis. Individual posted messages constituted the unit of analysis. Using the constant comparative procedure, the researcher constantly compared codes to codes and categories to categories to develop evidence for categories. In the end, each bulletin board message was coded using the categories: (1) Social (SCL): Messages pertaining to sharing general information, personal ideas, self-introductions, unsubscribe; (2) FCS pedagogy (FCSP): Questions or comments relating to teaching FCS content, including lessons, program standards, curriculum planning, and evaluation; (3) Nature of teaching (NFT): Message postings relating to classroom instruction, methods or management in general, and student assessment; (4) Resources (RCS): Messages in which members shared resources, including textbooks, websites, software (video, CD-ROM), instructional strategies, or virus warnings and protection websites; (5) Professional development (PRD): Messages relating to certification examination (Praxis), continuing education (graduate credits), job announcements, conferences, and association memberships; (6) Inspirational (IPL): Messages telling jokes (humor), giving encouragement, celebration, and words of faith; or (7) Reflective discourse (RFD): Evidence of reflective discourse messages such as asking focused questions or seeking common meanings in teaching practice. Another FCS educator who worked independently coded one-fifth of the messages. The codes were compared and contrasted with the researcher's codes for reliability. The consistency of the coding was evident in that there was 90% agreement between the two sets of codes.

Basic descriptive data were gathered for each board: (a) the number of message postings for each bulletin board, (b) the number of peer responses in each thread (message), (c) the number of messages without replies, and (d) the time of day of each message. Posting was noted for school session daytime hours--7 am - 5 pm, school session evening hours, and weekend hours

Findings

Characteristics of FCS Teachers

In general, it was difficult to gather information on the characteristics of FCS teachers using telecommunication networks in this study. This is likely because membership or participation in an electronic community was public and voluntary, and members were not required to make such information available. All invited informants ($n = 12$) participated in the e-mail survey, for a 100% response rate. All informants were female. The overall mean age of the e-group informants was 45 years, with 16.7% between 36 and 40 years, 25.0% between 41 and 45, and mo re than half (58.3%) 46 years or older.

When asked to report on their educational attainment, more than half of the e-group informants (58.3%) reported their highest degree to be at the master's level, 25.0% held a bachelor's degree, 8.3% reported holding a specialist degree, and 8.3% had a doctorate degree. Furthermore, half of the respondents (50.0%) had more than 15 years of teaching experience,

16.7% had between 11 and 14 years, 25.0% had two to four years, and 8.3% were in their first year of teaching. These demographic attributes of the informants indicate that teachers on these boards were veterans and could serve as mentors for FCS beginning teachers.

Frequencies of Message Threads

Among the electronic bulletin boards, NCFACS posted a total of 328 messages, FCSWF 177, and FCST 186. Figure 1 illustrates the number of messages posted during each month of the study by the electronic bulletin boards. It is evident from Figure 1 that more messages were posted by each electronic bulletin board at the beginning of each semester (August and January), and that after these months the number of message postings fell. Fewer message postings occurred during the winter break (December) and nearing the end of the school year (April and May). Activity in the summer (June and July) was relatively light for NCFACS and FCSWF, while FCST was inactive. This is not unusual for any discussion group, and certainly it is not surprising for a group of teachers who want to share their resources, experiences, frustrations, and problems at the beginning of the semester when they are less busy. Evidence of this can be seen in the up and down patterns of the message counts. Meanwhile, 20% of informants reported posting messages once a week and 33% accessed the bulletin board once a week.
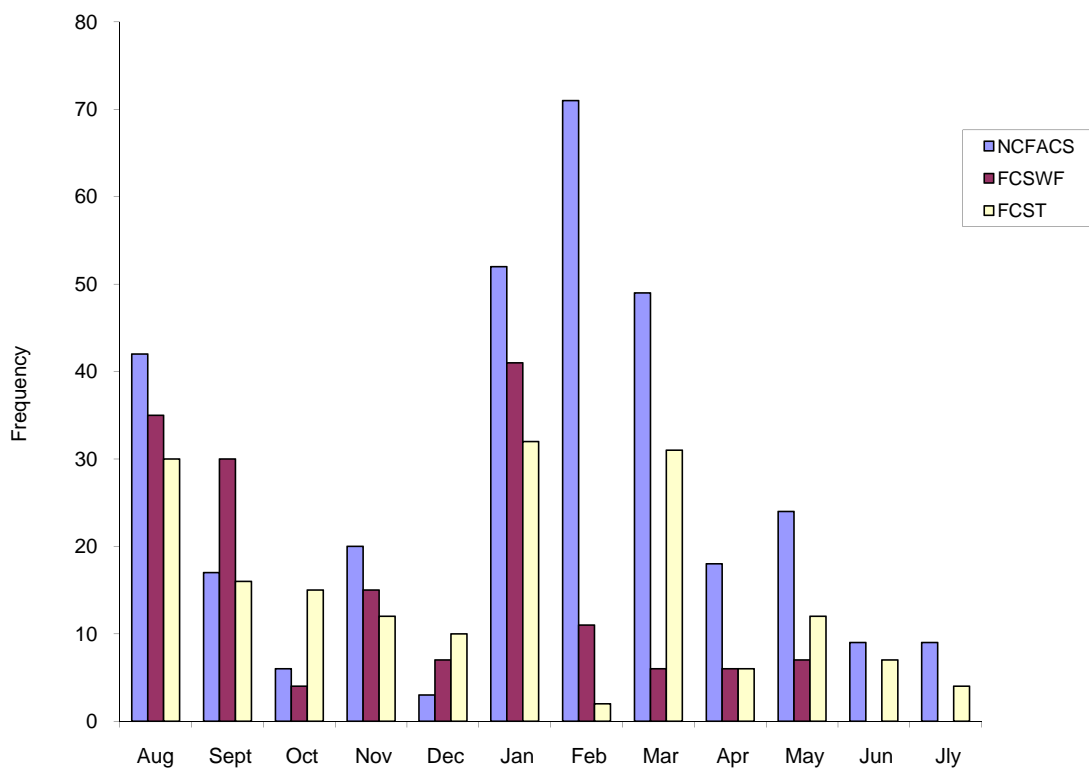

Figure 1. Number of messages posted per month

Furthermore, a larger number of message postings on each electronic bulletin board occurred during After School Hours (ASH) that is between 5:01 pm and 6:59 am, Monday to Friday (Figure 2). A possible explanation for these findings is the heavy workload that many teachers encounter during school hours, with no time for professional development activities.
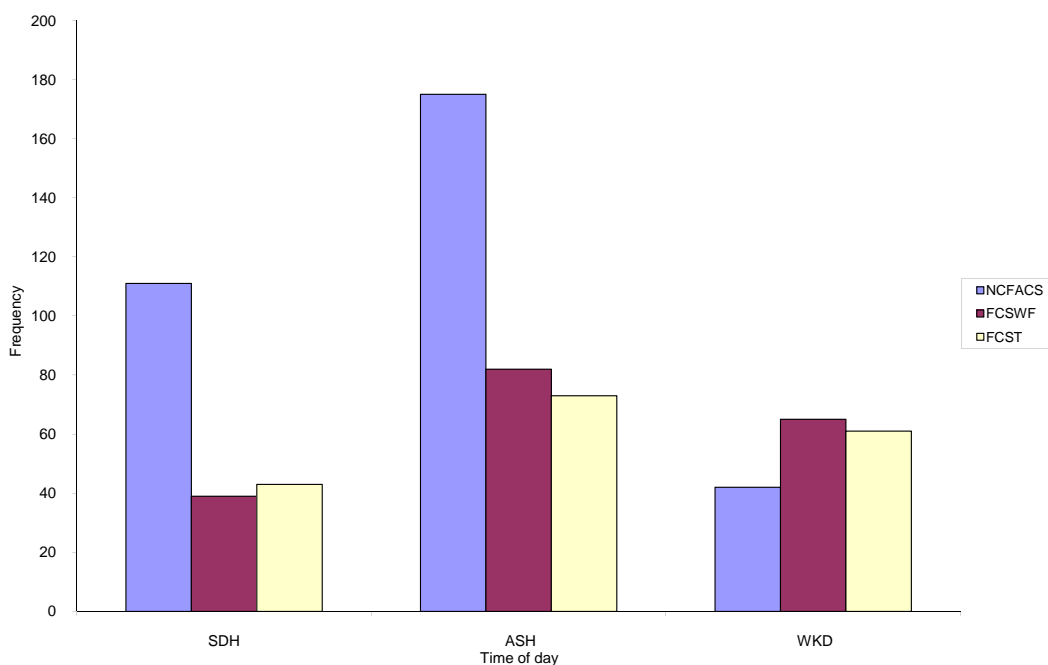
Figure 2. Message posting times[a]

[a]SDH = School Day Hours (7:00 am – 5:00 pm, Monday to Friday)
ASH = After School Hours (5:01 pm - 6:59 am, Monday to Thursday)
WKD = Weekend (5:01 pm - 6:59 am Friday to Monday)

Content Analysis of Messages

Figure 3 illustrates the overall message contents posted by participants on the electronic bulletin boards. Some messages were coded in more than one category. There was a great deal of variability with respect to the number of message contents in each category. In general, message contents pertaining to resources (RCS) and those that were social (SCL) tended to be most common for all the electronic bulletin boards, while contents pertaining to inspiration (IPL) were less common. The reflective discourse category was much the same for all the boards, although it did not account for a large proportion of the total message content category.

Furthermore, message contents relating to FCS pedagogy were posted to comment on issues relating to FCS programs and to pose questions about teaching FCS content (including lessons, program standards, and curriculum planning). As one member posted:

I am involved with a group of teachers devoted to saving our programs and we are trying to find out what others are doing in other states. We are looking for ideas in high school curriculum and textbooks used in Family and Consumer Sciences classrooms. What are the names of the classes you teach? Are any of your classes required for graduation? Which textbooks do you use? Has your budget been cut in the past two years? Has your enrollment increased or decreased in the past two years? What do you do to promote your program?
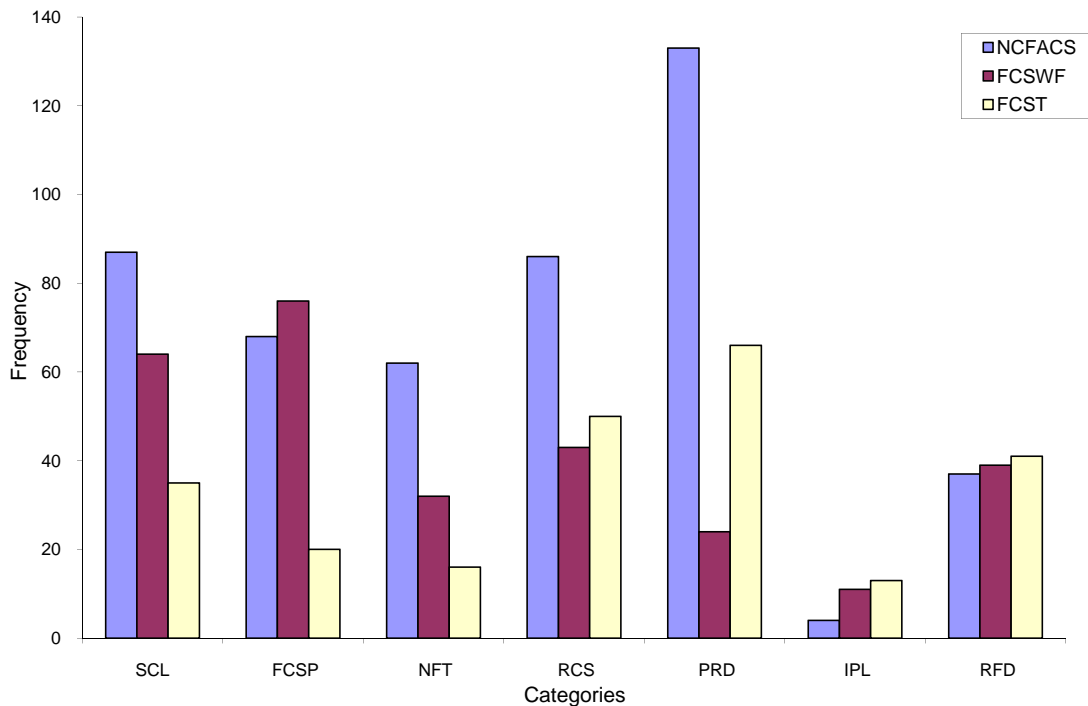
Figure 3. Breakdown of message content by category[a]

[a] SCL = social
  FCSP = family & consumer sciences pedagogy
  NFT = nature of teaching
  RCS = resources
  PRD = professional development
  IPL = inspirational
  RFD = reflective discourse

This sharing of information regarding FCS programs or curriculum resulted in seeking a common meaning or response to a given situation. The electronic bulletin boards also provided a forum for members to make requests for teaching ideas and assessment tools.

> *Hello, I was wondering if anyone would be willing to share how they have "used" the Baby Think It Over program. Specifically, how did you use the program as an assessment tool? How many points was it worth? Did you count each item in the student packet? Did you have other assignments in conjunction with taking the baby for a 24 hours period? I am about to use it for the first time and feel a bit overwhelmed. I have only 6 Babies (2000 Version) and a total of 55 students between two classes. I welcome any and all suggestions. Thanks*

In sharing concerns, the members were able to engage in scaffolding teaching ideas with each other. The FCS teachers were able to integrate bits and pieces of different teaching ideas together and perhaps to improve their own teaching by what others said. Informants corroborated this when indicating their agreement or disagreement with statements that described the efficacy of electronic bulletin boards in their teaching. The majority of the respondents (over 80%) agreed

with all the statements in this section, indicating that electronic bulletin boards have validated their teaching.

In addition, the use of electronic bulletin boards could help educators stay current with best practices in their field and encourage them to try innovative teaching resources.

> *Has anyone taped the series of Sew Young and Sew Fun and used it in the classroom? It sounds really nice with teens sharing what they've made. I read that each show tells about a service project idea that is conducted by kids. It is on PBS I think. I'm not sure when it is scheduled.*

> *I did a quick search on dog pile and found this site: http://www.sewyoungsewfun.com. It looks like a great resource--there is also a list of stations and times it is aired, unfortunately, not in my area (Philadelphia). There were several other links to sewing shows (I searched for "Sew Young TV") that I didn't check out. I never heard of the series so I appreciate the information.*

As with any profession, teachers need opportunities to expand their knowledge and to refine their skills. Electronic communities serve as a vehicle for providing information on educational issues and trends.

Teachers with access to a telecommunication network can contact other educators to discuss issues relating to their professional development (Bodzin & Park, 1998). This study revealed that FCS professionals who engaged in electronic communities discussed issues pertaining to national board certification, conferences, jobs, and courses available in FCS that promote professionals' development.

> *Hello everyone! If you have taken the PRAXIS Home Economics Education specialist exam (they still call it that!), this letter is for you! I will take this exam next month and need any advice I can get. If you have taken this exam, please share your expertise. How difficult did you think the test was? Did you have to take this exam more than once or did you pass with flying colors? I am just a little nervous, and would like to know what to expect. Thanks for any help you can offer.*

In general, the electronic bulletin boards served as a vehicle for FCS teachers to engage in reflective discourse. Reflective discourse involves asking focused questions, sharing concerns, and seeking common meanings in teaching practice.

> *Has this ever happened to you? I just found out I do not have any more money in my FCS school account and it is only February. I'm teaching in a middle school and I need to do some very fast fundraising. I want to do something easy, not like selling from a company or book. Does anyone have any ideas that they could share? I can't take any risks. This was a bit a surprise for me. Thanks to anyone that has advice.*

The board provided a medium for members to share their perspectives and experiences on issues, and perhaps allowed the more timid teachers to participate in the discussion more than they might in a face-to-face conversation.

Bulletin Board Topics that Promoted the Greatest Exchange of Ideas

There was great variability in topics on the electronic bulletin boards, and some topics provoked more responses than others. In general, topics pertaining to FCS pedagogy and professional development encouraged the greatest exchange of ideas, whereas topics pertaining to general issues did not promote responses (replies) from members. The topics that promoted the greatest exchange of ideas on all the boards were conferences, Teen Times magazine, self-introduction, National Board Certification Exams, continuing education, standards, job

announcements, development of test banks, and Praxis, indicating that FCS electronic bulletin board members experienced similar situations in their teaching and that they used the board to discuss and to share these experiences. However, there was some variability in topics and number of responses to a message thread across the electronic bulletin boards. . On average, many topics had six to eight replies (responses), while others had only one or no response at all. In general, topics such as virus warnings, rubric sites, and jokes were posted basically to share information. In such message threads, there were no prompts in the interaction to elicit a response. It was interesting to note that topics relating to sewing ideas solicited no response.

In addition, when informants were asked to recall the topics that promoted the most exchange of ideas, the majority of them (60%) indicated that teaching strategies, current events in FCS, standards, and job openings promoted the greatest exchange of ideas.

Discussion

This study found a marked difference between the months and the time of day that message postings occurred. Some of the findings were surprising. The teachers' level of participation in computer-mediated communication (electronic bulletin boards) fell significantly after the first month of each semester (August and January). This study also found that members posted more messages After School Hours (ASH) than at other times (School Day-Hour and Weekend). Factors that may have accounted for this dialogue pattern include the heavy workload of teaching assignments, traditionally rigid and structured school schedules, and infrequent participation by some members.

Research indicates that a number of factors affect participation in electronic communities. According to Anderson and Harris (1997), learning styles, priorities, expectations, the level of motivation or obligation to use the system regularly, computer networking experiences, and external factors such as constraints in terms of time and support from one's school system all influenced the involvement of participants in telecommunication networks.

The findings in this study revealed that many of the messages posted on the electronic bulletin boards were done to exchange ideas and to request, receive, and provide support for problems and tensions teachers experienced in their teaching. Many of the message postings were written in supportive fashion, providing words of encouragement to members in difficult situations. This finding was consistent with other research that has suggested that computer-mediated communication networks can provide support to teachers (Abbott, 2003; Casey, 1997; Heider, 2005).

Content analysis of the message threads indicates that most of the messages contained meaningful discussions (resources, nature of teaching, FCS pedagogy, and professional development) relating to teaching and promoting FCS content and professional development. These findings differ from those reported by Lehman, Warfield, Palm, and Wood (2001), who studied an elementary mathematics teachers' online discussion forum. In that study, most messages contained informational content postings rather than any request for meaningful discussion of mathematical thinking or professional practice.

Furthermore, some of the messages contained social content. The electronic bulletin board provided a common place where members felt comfortable sharing their own experiences with people they had never encountered in face-to-face interactions. The computer-mediated communication fostered a sense of belonging to a learning community where members did not feel threatened by engaging in the dialogue. Perhaps the absence of physical and social cues and

the anonymity in computer-mediated communications enabled members to feel that level of comfort about communicating.

In addition, message threads contained reflective discourse content. A reflective discourse on the electronic bulletin board included asking focused questions or seeking common meanings in teaching practice for a given situation. A main advantage that asynchronous communications have over face-to-face communication is that you can say whatever you need to say or can change it before you actually send or publish it. One informant stated that her responses were "well thought out," and she could provide them at her own convenience. This is substantiated by Berge (1997); and Harasim et al., 1995, who found that the asynchronous medium allowed their participants more time to think and reflect before responding to postings. The asynchronous nature of the communications allowed members to communicate at a time that was best for them and to be analytic and reflective.

The absence of physical and social cues in online communication changes the conventional rules of communication. This can be beneficial, because electronic dialogue focuses on the content of the message and not on the characteristics of the speaker. In addition, it encourages the more timid or reflective teachers in the group to participate in the discourse more than they might in a face-to-face conversation. Also, it provides no visual cues that might intimidate some members.

The findings further revealed that certain topics promoted discourse on all the electronic bulletin boards. This was surprising, because each electronic bulletin board is independent. These topics (conferences, Baby Think It Over, National Board Certification, and job announcements) were authentic concerns to which members could relate. This observed phenomenon indicated that FCS teachers experienced similar situations and, because they are isolated from peers, they used computer-mediated communications (electronic bulletin boards) to discuss and share these experiences and information. Because computer-mediated communications permit immediate feedback, they contribute effectively to the shaping of reflective thinking. This finding was substantiated by Zimmerman and Greene (1998), who found that the use of a listserv provided opportunities for teachers to engage in reflective dialogue, providing ongoing opportunities for pedagogical concepts to be discussed.

Conclusions

It can be concluded that FCS computer-mediated communications provided an effective means for developing collaboration among colleagues, peers, and mentors. Members used electronic bulletin boards to express concerns, request help, and exchange ideas with expert teachers. By using electronic bulletin boards, members had the opportunity to apply reflective thinking to topics presented or posted and to engage in dialogue about classroom practice, educational reform issues, and some specific FCS courses or subjects. In addition, computer-mediated communications created an avenue for teachers to use their limited time with peers to discuss teaching problems and solutions and to develop better teaching skills.

Furthermore, computer-mediated communications provided safe, convenient opportunities for reflection and conversation, moral support, and assistance in breaking down the barriers that FCS teachers experience in their isolated settings. The computer-mediated communications promoted dialogue through focused questions and comments and enabled members to have unlimited access to information and to receive peer-peer support and validation about their teaching practice from other members. It also helped them to identify opportunities for professional development. As a result, teachers with varying levels of experience were able to

build a collegial environment that breaks down walls of isolation and, ultimately, increases the retention rates of FCS teachers.

Recommendations

It is very challenging to develop and maintain a computer-mediated communication network. Members need motivation and encouragement to participate in and facilitate the online discourse. It is therefore important that the Department of Education and faculties of teacher training institutions get involved and facilitate conversations about educational reform issues.

The major issue that emerged from this analysis is the need to develop a fuller understanding of what causes the usage of electronic bulletin boards to change over time, particularly the decreases in number of messages and replies posted after they peak. Equally important is the need to understand the benefits of using electronic bulletin boards as viewed by members themselves and to encourage non-users to become members. This is obviously a subject for further research.

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