

School Libraries Worldwide Volume 10, Numbers 1 and 2, January/July 2004, 73-91

Control of Dialogue in Asynchronous Forums for Teachers: Implications for School Library Media Specialists

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This study adds to the information on online educational sites by examining the deployment of power and status in an online professional development Web site for preservice and inservice math and science teachers. Initiation and continuation of threads in asynchronous discussion forums is viewed as a powerful activity and parallel to the control of discussion in face-to-face classrooms as an issue of control. Studies of two discussion forums on the same topic, one comprising mainly inservice teachers and the other comprising mainly preservice teachers, showed a significant difference in the number of threads initiated by men and by women, with men dominating. In addition, the threads initiated by men were much more likely to receive responses that continued the discussion, whereas those initiated by women were likely to end with that single post. Other features of educational forums such as flaming did not occur. I conclude that the more subtle features of power and control in online spaces are just as important as overt features in encouraging people to participate and discouraging people from participating in these forums. School library media specialists, as mediators and interpreters of Internet tools, and frequently female role models for using technology, will find this article of practical use as they work for gender equity in their own settings.

Introduction

In the 2003 Sloan survey of online education, 81% of responding institutions had at least one online course (Allen & Seamon, 2003). This increases to 90% for publicly funded schools. Yet there is little research (some exceptions are Blum, 1999; Bryson & de Castell, 1995; Herring, Martinson, & Scheckler, 2002) on gender effects in online educational sites (Kramarae, 2001). This lack of research information is particularly distressing in view of the gendered and raced behaviors that marginalize women and minorities in the usual face-to-face classrooms (American Association of University Women, 1992; Rosser, 1995; Sadker & Sadker, 1995). I wish to know if the discouragement of women in face-to-face situations extends into online educational sites. I also wish to understand the particular way that threads develop in asynchronous forums and how these forums affect and are affected by the power and status of posters.¹ School library media specialists are frequently the arbitrators of online educational spaces as they introduce the use of such tools to their students and attempt to ensure that their female students are

included. Knowing the equity pitfalls of these spaces is a help to their diversity efforts.

Early reports of online education claimed the promise of gender and racial equity in electronic sites such as listservs and Web-based discussion forums where bodies are not physically present. Other researchers have shown evidence of the transfer of traditional gendered relations from face-to-face locations to the Internet or other electronic venues (Bjorkman, Christoff, Paim, & Vallin, 1998; Boese, 1999; Brail, 1996; Herring, 1994, 2000; Herring, Johnson, & DiBenedetto, 1995; Shade, 1993; Soukup, 1999; We, 1993). More recently, it has been claimed that there is no difference between male and female behavior online (Davidson-Shivers, Morris, & Sriwongkol, 2003), but it is also recognized that differences other than the availability of mediating computers affect participation in online forums. Some of these extenuating factors in educational settings include details of the context of computer-mediated communication (CMC) usage including composition of classrooms (unisex or coed), motivation to use CMC, dependence of grades on use, and presence of moderators (Blum, 1999; Davidson-Shivers et al., 2003). In this article, I concentrate on one extenuating factor that is often overlooked, that of the status of users and how usage maintains or disrupts power hierarchies and status. The reason for looking at this particular factor is that power and status frequently interact with gender relations in other settings (Goldberger, Tarule, Clinchy, & Belenky, 1996; Spender, 1995).

Neither instructional technology nor educational settings are static in their formulation and usage, and the rate of change is particularly high in the rapidly developing field of computer-mediated technologies in education. In a recent study, Shaw and Gant (2002) showed that men and women experience similar effects from Internet usage when compelled to do the same synchronous chat task. Sax, Ceja, and Teranishi (2001) showed more difference in computer experience by ethnicity than by gender among entering college freshmen. This and other studies indicate that women are not computer-phobic or incapable of using computers. In fact recent surveys show women using the Internet in greater numbers than men (US Department of Commerce, 2002). Rather, women are said actively to reject the culture of computing (American Association of University Women, 2000) and often the more violent and sexist parts of the computer gaming culture (Cassell & Jenkins, 1998). Researchers are also coming to realize that unrestricted amounts of computer usage by teenagers and adults is not beneficial to their physical fitness or mental health (Kaiser Family Foundation, 1999; Kraut et al., 1998), suggesting that researchers and practitioners need to recognize the disadvantages as well as the advantages of stressing computer usage in educational settings.

As computer and Internet usage grow, the complexity of gendered meaning of this usage requires a closer and more nuanced analysis. We must consider particular computer applications, social class, ethnicity, power rela-

tions, and hierarchies all as variables in our understandings of gender and computer technologies. Without this nuanced understanding we are likely to generalize far too much on the merit of individual studies.

The particular part of the landscape of gender and technology that I examine in this study is the use of asynchronous discussion forums by inservice and preservice teachers in the Inquiry Learning Forum (ILF), a Web-based professional development site for preservice and inservice math and science teachers (<http://ilf.crlt.indiana.edu>).² The usage by the preservice teachers is a requirement of their coursework and thus under the influence of their teachers. The inservice teachers have more latitude in their use of the online forums, yet status and power may still play a role in motivating postings and participation.

Web-supported education is a permanent and growing part of the educational landscape, especially for college and graduate students. There is little research on gendered discourse in online educational sites. Although research has shown that face-to-face classrooms present gender inequities, there have been expectations that online sites have overcome such biases. Noting that online environments are not homogeneous and that asynchronous discussion forums represent one genre of online discourse, I look at how the structure and use of asynchronous discussion forums is affected by gender and power relations. I particularly note how gender and status affect the control of threads in asynchronous forums.

I began this study out of curiosity about the non-stereotypical role of questions, discovered in an earlier study of gender in the ILF (Herring, Martinson, et al., 2002). In this earlier article, we observed that men asked significantly more questions than women, a reversal of expected gendered behavior in face-to-face situations and a reversal of other reported online behaviors (Blum, 1999). Questions can serve many linguistic functions. For example, they may be requests for information, requests for affirmation, backchannels,³ or a way of controlling conversations. I needed to look more closely at the types of questions that were being asked and their function in the ILF.

From this closer examination of questions, I began to recognize that statements not in the form of questions considerably overlapped the function of questions in that they acted to request information, to initiate threads in asynchronous forums, and to end threads. This led me to expand my investigation to the more general theme of the role of gender in the control of discussion in asynchronous discussion forums.

I claim that there is a parallel functionality between controlling the topics of discussion in an asynchronous discussion forum and controlling the floor in a face-to-face classroom. Although silence can and does sometimes represent a unique type of powerful resistance in the classroom, online it generally indicates a disenfranchisement and lack of power, and in any case, par-

ticipants cannot see when silence is used as an online form of protest. Thus silence as protest is fairly ineffectual in this type of classroom technology.

Background: Gender and Technology

Technology is closely identified as masculine in our Western culture. Gill and Grint (1995) claim, "It operates [the cultural association between masculinity and technology] not only as a popular assumption—from which much sexist humor about women's 'technical incompetence' has been generated but also as an academic 'truth'" (p. 3). This connection seems to have grown out of the many dichotomies of gender that connect maleness to popular aspects of technology including power, mind, and rationality (Bordo, 1993). Despite this strong stereotype, some women fully embrace technology, particularly digital technologies, including those working as computer scientists, instructional technologists, engineers, and early innovators in industry and education (Gürer, 1995; Klawe & Leveson, 1995). Yet, unfortunately, these women remain largely hidden and ignored and thus cannot be the role models that might influence young women.

In terms of computer use, there is little question that women are active users of computers at home and at work with particularly large increases in home use of computers for communication (US Department of Commerce, 2002). As other authors have pointed out, there is a discrepancy between creation and design of computer utilities, including hardware and software, and usage of computers by women. In this case, the creation and design of digital technologies is the powerful and lucrative association. Although some women participate in these "powered" activities, they are largely invisible and unnoticed. Even where women are active in technologies such as in horticulture, technology, and childrearing, these technologies are discounted and essentially removed from the realm of powered technologies (Wajcman, 1991).

One place where both women and men are users of digital technologies for communication is in educational settings, where course requirements force all students to use digital technologies. In educational settings, asynchronous discussion forums form a particular genre of CMC. School media specialists are instrumental in introducing students to these educational technologies and need to understand the nuances of gendered use of online asynchronous discussion forums.

Asynchronous Discussion Forums

Asynchronous forums are distinguished from synchronous forums by the ability of posters to enter communications at any time. Thus posters can come and go, overlap or not overlap with other users, and the order of posting is determined by the sequence in which posters enter and exit and post to the forum. To keep postings on similar topics together, many asynchronous forums are organized by topics or threads. Posters usually can initiate a new thread and/or link their post to a previously existing thread.

Thus a complex structure of threads may arise, or the discussion may be completely linear as it focuses on one topical thread. Usually, asynchronous forums seem to develop in a bushy way with several long threads interspersed with several aborted threads that persist through only one post. Tracking these threads and noting who reads the posts has occupied some Internet researchers (Hewitt, 2003), and this work helps to describe the nature of online educational discourse.

A collection of research papers deals with posters who mainly read the unread messages rather than following the entire thread from beginning to end before posting their own comments (see summary in Hewitt, 2003). As Hewitt notes, this analysis of asynchronous educational forums ignores the effects of the interfaces. I agree with his analysis, but I observe that it also ignores the effects of status and power. These two points interact because the design of the interface and other parts of the software are said to be affected by power and status (Benston, 1989; Green, Owen, & Pain, 1993), a fascinating issue but one that falls outside the subject of this article.

Educational Discourse

Questions in education, as in other settings, have other meanings and intentions besides requests for information. Questions play many discursive roles from demanding information from the accused or witnesses (possibly hostile) to backchannels of maintaining verbal contact with questions such as "Isn't that so?" (Mulac et al., 1998), including many gradations of sympathetic and hostile questioning. Similarly, answers to questions can run the gamut of passive acquiescence to the demands of superiors all the way to acting out the desire to act erudite or critical. In other words, questions in educational discourse include attempts to gain or concede power and all the more power-neutral and less-powered gradations in between.

Questioning and answering have played a special role in education from the time of Socrates to more recent interest in erotetics as a theory of education (Garrison & Macmillan, 1986, 1987; Macmillan & Garrison, 1988), explanations of educational discourse (Burbules, 1993), and taxonomies of questions used in education (Blosser, 1991). John Dewey's (1938/1986) conceptualization of learning included the changes in embodied habits that resulted from disequilibrium resulting from doubt and being resolved by return to equilibrium. For Dewey, the state of disequilibrium leads to the formulation of questions that serve to lead to the actions that restore equilibrium.

Macmillan and Garrison (1983) made a bold claim that "To teach something is to answer the person's questions about some subject matter," which shifts asking questions from the teacher (as in our lore about Socrates) to the student. This interesting philosophical work foreshadowed current educational interest in constructivism and inquiry where the student is given leave to ask questions rather than only answering the questions of a more knowing

teacher (Fosnot, 1996). Also interesting in Macmillan and Garrison's work is the notion that controlling the presuppositions of the questions controls the questions that can be asked. This notion philosophically connects asking questions with power and control. For example, the person who set the agenda and maintains order in a meeting determines what questions can be asked and what can be discussed because they control the presuppositions of the meeting.

Control of Dialogue

Approximately 15 years ago, researchers were predicting a genderless, raceless, bodyless cyberspace where one could play with identity, try out other selves, and evade the stereotypes of our embodied existence (Sproull & Kiesler, 1991; Turkle, 1995). Since then, researchers have both suggested and shown that we carry our bodily characteristics onto the Internet with our speech patterns where social dynamics and hierarchies are reestablished (Herring, 2000; Herring, Martinson, et al., 1995; Spender, 1995).

Asynchronous discussion forums allow cross-conversations and initiation of new threads (topics) without recognition or permission from a teacher or moderator. This feature of online discussion forums is touted as a way of allowing the less vocal, assertive, or persistent students to make their opinions known and particularly to initiate new conversations. Face-to-face classrooms clearly bias speech toward certain assertive students, usually white middle- to upper-class males (American Association of University Women, 1992; Sadker & Sadker, 1995).

An asynchronous discussion forum allows users to add comments at any time, meaning that there is no guarantee that everyone sees the entire discussion. The threaded nature of the forums indicates that the themes of the discussion are kept together by a user replying to a previously existing thread. A user may also refuse to reply to existing threads (topics) and start new topic threads or start new threads as if ignoring the old threads. Online the floor can be taken by long length of posts, harassment of other posters that discourages further posting,⁴ or in the most extreme cases, control of the interface by hacking into the operating system of the server. In face-to-face classrooms, students dominate dialogue by interrupting other people, making long speeches, doing physically imposing things like making large arm and body gestures, being insistent that the teacher recognize them, and physical walkouts or absences.

Critical Discourse Analysis and Ethnography

Discourse analysis, as James Gee (1999) explains, has not just one approach that is correct, but one useful approach "is the analysis of language as it is used to enact activities, perspectives, and identities" (pp. 4-5). Discourse analysis uses semiotics, semantics, and syntax to understand the context and meaning of language.⁵ In this particular case, I am using discourse analysis of

an online discussion forum to understand the meaning of the structural act of starting threads and ignoring threads.

It is difficult for me to fathom discourse analysis that does not involve some examinations of ideologies and the power structures that support them. To fail to do so supports a philosophy that all speech acts, written or spoken text that function as speech, are equally likely and that I need only report what I see without the additional step of contextualizing those reports. I adopt critical discourse analysis⁶ here in examining how this Web site promotes empowerment and disempowerment of its users (Fairclough, 1995). In this sense, I not only wish to examine gender balance in the ILF, but to understand the relationship of this to the control of asynchronous forums, how they grow, and how topics change intentionally and unintentionally. If inquiry pedagogy, the topic of the ILF, emulates the function of many practicing scientists and mathematicians, then immediately a red flag is raised as to how this might possibly empower women, African-Americans, and Hispanics, who are largely excluded from the formal performance of science and math (American Association of University Women Education Foundation, 1998; Eisenhart & Finkel, 1998; Haraway, 1991; Harding, 1991; Jacobus, Keller, & Shuttleworth, 1990; Morell, 1996). I look to the ILF as a site where women ought to be able to perform inquiry on an equal footing with men,⁷ and perhaps in this practice of inquiry make inroads into the androcentrism of science.

Setting of the Study

All the dialogue analyzed for this study come from the Inquiry Learning Forum (ILF), a multimodal Web site designed to promote inquiry pedagogy and inquiry into one's practice for math and science teachers. The ILF is a complex site with discussion forums, videos of teachers using inquiry pedagogies, collaborative work areas for small-interest groups designing curricular materials, workspace to support preservice teachers' methods classes, professional development activities, and a library of curricular resources. This Web site interacts with a group of relational databases and is dynamic, so that users can add to the databases, link parts of the databases to personal Web pages, and in other ways control the display and addition of online materials. Although there are some synchronous events, most of the discussion is asynchronous and takes place in threaded discussion forums.

Figure 1 shows the front end of the ILF, using the metaphor of a school building with rooms for traditional classes, library, a personal desk, office, and lounge, as well as less traditional collaboratory (for collaborating in small groups) and inquiry lab (for professional development activities). Linked to these rooms are numerous asynchronous discussion forums for all kinds of functions from introductions to the larger group in the lounge to discussing the teaching of a particular teacher, as demonstrated in a video of a K-12 classroom, to commenting on an inquiry resource in the library or to

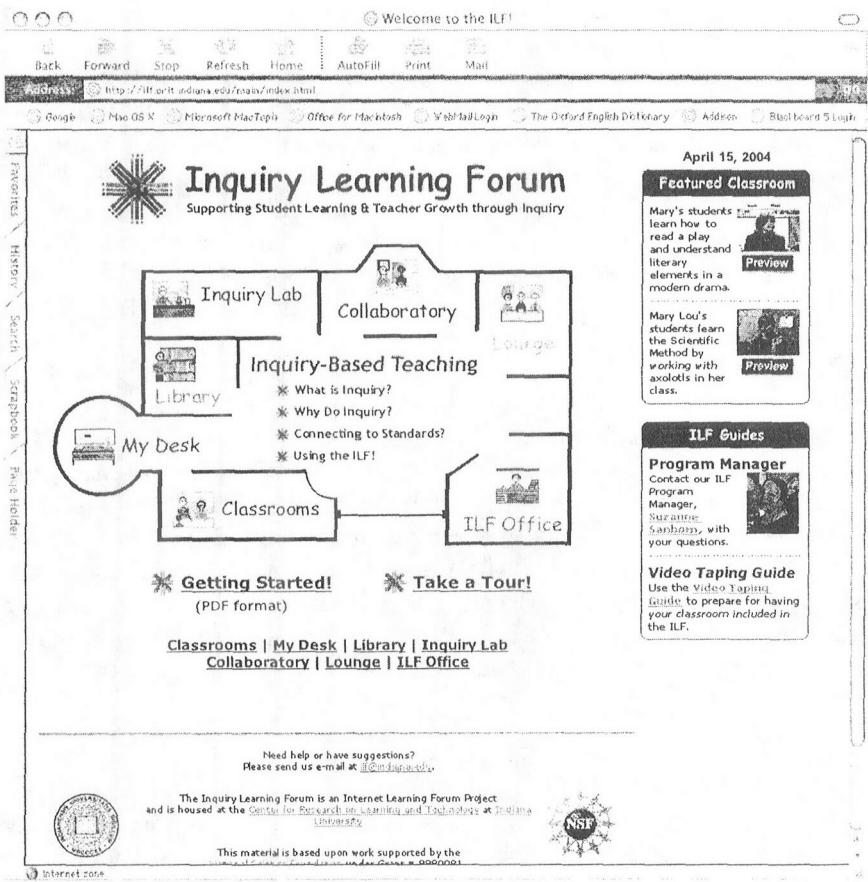


Figure 1. ILF front end.

submitting homework assignments in an inquiry circle that supports a preservice classroom.

My study, part of a larger study to understand the effects of gender on communication in this Web site, is an investigation of asking and answering questions that led to a study of the control of asynchronous forums. The first investigation of gender in this setting (Herring, Martinson, et al., 2002) showed that women were much less likely to participate in a discussion forum about a male teacher's video than in a discussion forum about a female teacher's video, a confirmation of many multicultural educators' opinions that we tend to participate in educational events with people who look like ourselves (hooks, 1993; Williams-Green, Holmes, & Sherman, 1997-1998).

In that study, some findings did not fit earlier understandings of gendered text. One was that men were asking significantly more questions

than women, contrary to other findings where women are the more frequent askers (Mulac et al., 1998). A raw count of questions asked and answered in these forums yielded the results shown in Table 1, where I see not only that men were asking far more questions, but were asking more in the forums about men's classrooms than in those about women's classrooms. Women, who were asking fewer questions than men, were asking them mainly in the forums about women's classrooms. Another interesting observation was how men and women responded to questions. Women were much more likely to respond to men's questions than to women's questions in both men's and women's classrooms, and men were about equally likely to respond to women's questions as men's questions in men's classrooms, but answered no questions in the forums about women's classrooms.

The findings brought to mind issues of power and authority. I speculate that women are conditioned to respond to men as authority figures, particularly in an educational setting. In order to form a more complete understanding of these issues, I needed to look at types of questions that would differentiate requests for information from confirmatory questions and hedging questions and also to look at the discourse patterns of varying status.

Because I am viewing gender as a process of performance that changes according to sociocultural context and not some essential part of biological sex (Butler, 1990), I am not surprised to see abrupt circumstantial changes in gendered behavior as gender is constructed time and again. With a critical lens on gender construction, I look for powered relations that keep certain gender constructions in place (Fairclough, 1995; Mann & Stewart, 2000).

In addition to the differences presented by gender in this Web site, status differences of users also potentially lead to differential power hierarchies. The largest classes of users in the ILF are preservice and inservice teachers, whereas college professors, ILF staff, and school administrators are repre-

Table 1
Asking and Answering Questions in Classroom Forums

	<i>Questions asked by men</i>	<i>Questions asked by women</i>	<i>Women's responses to questions asked by women</i>	<i>Women's responses to questions asked by men</i>	<i>Men's responses to questions asked by women</i>	<i>Men's responses to questions asked by men</i>
Men's classrooms <i>N</i> =9	81	17	3	33	10	50
Women's classrooms <i>N</i> =3	4	18	7	3	0	0
<i>p</i>	0.0109	0.1119	0.2972	0.435	0.0033	0.1193

sented in smaller numbers. No pretense of anonymity is maintained in the ILF. All users can know the gender and status of other posters. Users are asked to fill out a profile with personal details, including their teaching experiences, understanding of inquiry, and hobbies. Although few users have filled out this profile, by default it lists the user's real name and gives access to all their posts. This profile is accessible by clicking on a user's name as displayed in any posting in a forum. In addition, many of the ILF discussion forums originate in inquiry circles, which are semi-private parts of the Web site formed for the purpose of supporting previously existing face-to-face groups on line. Many users in these smaller groups know each other in person as a result of class activities, workshops, or professional meetings. The ILF Web site is characteristic of hybrid teaching situations where face-to-face classroom interactions are enhanced with online discussion forums.

In online communication meant for social exchange and professional communication, studies of gendered behavior are reported to connect men with confrontational and contentious behaviors, whereas women are more connected and supportive (Herring, 1994; Herring et al., 1995). Flaming, the online equivalent of yelling or abusive talk, and unwanted sexual advances are common (Brail, 1996; Dibbell, 1993; Spender, 1995). Even in educational listservs with young undergraduates, male behavior occurs that is considered aggressive (Boese, 1999). In general, although there are gender differences in the ILF (Herring, Martinson, et al., 2002), they are more subtle than in some of these other settings. Flaming, trolling—the intentional introduction of controversial and disruptive messages (Andrew, 1996; Herring, Sluder, Scheckler, & Barab, 2002)—sexual advances, and sexual language reported in other settings are nonexistent. I might assume that a professional development site for teachers preselects caring individuals who may in general adopt more feminine styles of discourse. Yet power inequities exist even in caring professions.

All forums on this site are asynchronous. Posters have the option of getting e-mail notification of responses to their postings, which converts a pull technology (one requiring effort to see messages) to a push technology (one where messages come to the recipient with little additional effort) for those choosing this option.

Methodology

I collected the text from two asynchronous discussion forums that continued throughout an academic semester. Both discussion forums dealt with discussion of a book about high school math education (Chazan, 2000). These forums are part of the Inquiry Learning Forum (ILF), a Web site funded by the National Science Foundation (NSF) that requires a password for participation. When participants apply for a password, they are required to give informed consent for their postings to be used for research purposes.

I analyzed and coded the messages in these two forums, specifically looking at who was posting by gender and status, who was initiating posts, and who was responding to posts. I also looked at the content of these posts in terms of structure, conviction, and the degree of civility and/or flaming and ranting. This content analysis was done from a feminist viewpoint (Reinharz, 1992) whereby particular notice was made of gender differences and some attention was paid to what was absent as well as what was present. In order to escape the bias of imagery (Herring, Martinson, et al., 2002), I specially chose to analyze discussion forums not connected with visual imagery. By escaping the bias of visual imagery, I mean that these forums do not have readily accessible pictures of the posters. In contrast, in the case of classroom discussion forums, the video of the teacher who made the video is a constant reminder of the status and gender of a person who is prominent in that discussion forum often acting in the role of a moderator.⁸

I hypothesized that if men and women participated in asynchronous forums in the same gendered and powered way that they participate in face-to-face classrooms (Rosser, 1995; Sadker & Sadker, 1995), men and higher-status women would be more likely to start new threads, and the threads of men and higher-status women would be more likely to receive responses. I also hypothesized that these two features of asynchronous discussion threads (i.e., who was initiating threads and whose threads received responses) could be used to identify and analyze gendered control of asynchronous discussion forums.

Results and Discussion

The findings are summarized in Tables 2 and 3. Table 2 summarizes features of the class discussion forum from the undergraduate methods class, and Table 3 summarizes features of the open discussion forum that was composed of inservice teachers, one faculty member, and one graduate student in math education. The *p* values refer to the significance of results of Pearson chi squares (Steel & Torrie, 1960).

The tables showed a statistically greater number of messages initiated by men than women in both online forums. In addition many more messages initiated by women received no response. This difference was so extreme that in the methods class, none of the threads initiated by women received a response whereas all of the threads initiated by men received a response. The only gendered difference recorded that was not significant was the number of posts by men and women in the methods class. Because posting to the forum was a requirement of the class, it is not too surprising that women posted as frequently as men.

Other gendered differences that were noted were the tendency of women to agree with a previous post and men to disagree when both were replying to established threads. In addition the women's posts in the methods class had a tendency to end with a question or hedge. These gendered differences

Table 2
Methods Class

	<i>N</i>	<i>Posts</i>	<i>Initiated new thread</i>	<i>Initiated new thread that received no response</i>	<i>Trailing question or hedge in conclusion</i>	<i>Posted agreement with thread</i>	<i>Posted disagreement with thread</i>
Women	14	51	10	10	20	28	6
Men	5	17	13	0	2	5	6
<i>P</i>		ns	0.0053	0.0022	0.1119	0.2607	0.0776

agree with other findings of gendered analysis of computer mediated communication (Herring, Martinson, et al., 2000).

Unlike other reports of online learning environments (Boese, 1999), there were no instances of aggression, flaming, or trolling (Herring, Sluder, et al., 2002). Rather, the tone of the forums was polite, agreeable, and for the most part complimentary of other people’s postings. This politeness and lack of tendency to challenge others’ practices or ideas could be considered a detriment in a setting that is attempting to promote inquiry into one’s practices. This setting is more congruent with studies of asynchronous classrooms of professional students (Blum, 1999), and indeed the sample of posters is composed of teacher professionals and mature undergraduates and graduate students. However, I note that this high level of civility does not ensure equity. Rather, the inequities are subtler and equality of control is as problematic as in more contentious online environments.

These forums engaged participants in fairly impassioned discussions of teaching practice because the book involved concepts such as student tracking, drill and practice, and the certainty of math. In addition, these forum discussions included self-reflection, critical thinking, and sometimes reversals of previously stated positions, indicators of an emotional as well as a cognitive interest in the topic.

Table 3
Open Discussion

	<i>N</i>	<i>Posts</i>	<i>Initiated new thread</i>	<i>Initiated new thread that received no response</i>	<i>Posted agreement with thread</i>	<i>Posted disagreement with thread</i>
Women	5	16	4	3	13	0
Men	6	58	30	0	9	9
<i>p</i>		0.0872	0.2206	0.00008	0.0007	0.1204

In the methods class, the students were given a template for what their postings should be like, and they were required to post several times a semester in order to get full credit for their course. Thus I expected a fair amount of consistency between male and female posters. Most of the students in this class were female, as is typical in most education classes. Yet even so, the women initiated fewer threads than the men and none of their threads received responses. I suspect that when their initiated threads receive no responses, women will be less likely to initiate a new thread and perhaps even likely not to post again. One exception to this occurred in the class discussion forum. The two female instructors posted one message asking a number of questions that received a large response. This instance seems to indicate that higher status of women gives them more power in this case.

A typical post by a female student follows the class template closely⁹ whereby the student generally begins by agreeing with a previous post, followed by some evidence, often based on experience, and then concluding with some questions. The posts of the women were interesting in that they more frequently concluded with a question that was a hedge on their previous statement rather than formulating a question that was a request for more discussion. The following example is interesting because the writer initially seems to agree with the previous post, but is actually disagreeing. However, she softens her disagreement by agreeing first and using her personal experience instead of texts as evidence of her opinion.

I do agree that Bob made some interesting points regarding the whole homework vs. schoolwork issue. However, I feel like in my experience in math classes, it would be very difficult to learn a concept without practicing it. In this class, I do a lot of discussion on how practicing math concepts is not the best way to learn. I think that there are some good points to support this, but I also believe that it would be very difficult to learn without using some form of practice. I could not imagine doing math work only in the classroom. I feel that this puts the teacher in a very interesting predicament. Yes, doing inquiry should inevitably help students learn and remember a concept, but is this enough? Can you teach effectively enough to not have homework and have students pass graduation exams and other tests that are currently so popular? Can students learn enough and not do homework outside of school? What exactly constitutes learning enough? (Female preservice teacher, class discussion)

Male preservice teachers, although not always disagreeing with previous posts, still were more likely to cite written sources for their opinions rather than their own experience and to conclude their posting more definitely than the women as this posting demonstrates.

Yeah, right on!

Our students need math skills, not conceptual understanding, to pass ISTEP and SAT.

You forgot to mention coverage. I could never cover all the material in the Algebra textbook if I tried to teach concepts on top of all of those procedures. There isn't enough time. If I don't cover the material, then we could lose our jobs. That would be bad.

Is less = more ???

less skills, facts, procedures

and more concepts, representations, applications,

fewer problems and more connections between problems.

I think that less is more is part of the core plus philosophy

so teaching math for understanding might require a more dramatic change,

like a completely different textbook,

than a simple functions approach suggested by Chazan.

The last part of the "Math Wars" article tries to argue that

CPMP students did better than traditional students on ATDQT (a standardized test).

Or maybe they just did equally as bad....

I think the argument for conceptual understanding goes something like:

students need to understand the "why" (concepts) in addition to the "how" (skills/procedures) in order to know "when" (transfer of learning).

So maybe CPMP students do better on standardized tests is because

they know "when" to apply skills/procedures because they know "why" they

are being applied and they know "how" to apply the skill/procedure

Traditional students might know "how" to apply the skill/procedure

but be unable to transfer that knowledge to the standardized exam

since that would require knowing "when" to apply a procedure which requires knowing "why."

It is a nice theory ... however, I am not sure that I am willing to risk my first math teaching job on it. (Male preservice teacher, class discussion)

Even female inservice teachers frequently softened their replies with concluding questions. Not many inservice female teachers posted to the open discussion forum, so it is hard to generalize about the interactions of status and gender. Following is one of the few posts by a female inservice teacher.

I do agree with the notion that you made. After reading the response that others posted, I start to wonder what is the most effective way to teach so that students are understanding mathematics. In most of my mathematical classes, except for geometry, there was no need to write the reasoning of your conclusion. It was right because that is the way that the teacher did it in class or just because the textbook showed the solution in the same manner. I do feel that there should be some sense of discussion about the particular problem but not on every type of problems. There are just so many in minutes in a class period and so many school days. Most of the material that would be taught is usually based on the standards that Ire [sic] adopted and what is essential for the standardized test. What are the students really getting due to the time constraints? Mostly, they will walk away with memorization of how to do the problem and not the meaning behind the problem. Yes, standardized testing does limit the capability of the

student but it does allow the student to practice how much they can remember. But the question lies on what is essential for a discussion in mathematics? Is this what I am attempting to accomplish in our teaching the Stair Step and Sneaker problem? (Female inservice teacher, open discussion)

I also suggest that preservice teachers differ from inservice teachers in status and in the degree of indoctrination into the speech registers of teaching. This suggestion, although fairly intuitive, also seems to be supported by the difference in tone of the two discussion forums.

Implications

Both computer devices and math are critiqued as being masculine and thus sources of power and control (Adam, 1998; Benston, 1989; Harding, 1986). When computers are used to promote the methods of math, there is no reason to believe that gender equity will be attained in the confluence of the two technologies. Although the ILF shows none of the overt manifestations of gender harassment or dominance such as flaming, calls for first amendment rights, and desire for an uncontrolled frontier for discussion, gender equity has not been achieved. The indications of gender inequity are much more subtle in this space, consisting of men asking more questions and having more control of asynchronous forums, and women using less definite speech and participating less. Recognizing that women are reported to limit their participation in online forums when ignored (Herring, 2000), I fear that lack of response to their threads will lead to increasingly fewer postings by women.

Online spaces have been hyped as the place where all inequities tied to bodily differences will be eliminated by the disappearance of the body. We now have good evidence that the body is reinscribed in the Internet by varying styles of communication. Knowing this, we must remain sensitive to the consequences of bodily differences, be they subtle or overt. School media specialists, mostly women, are role models for their female students. In addition to encouraging their students to post to online forums and teaching the format of effective responses, they can encourage girls to post by their own presence to online forums. They can especially be sensitive to both the subtle and overt ways that girls are discouraged in online forums, discussing these issues openly and seeking ways to encourage school-aged girls to post assertively and confidently.

Notes

¹Asynchronous discussion forums are those where posters can enter and post at varying times. Because there may be long time lags between posts, the posts are frequently organized in topical threads where a poster replies to a particular strand of messages on a single topic (referred to as a thread) or initiates a new thread. The serial flow of topics can then be traced by examining the sequence of the discourse.

²Since the data for this study were collected, the ILF has changed its focus to encompass other subjects in addition to science and math.

³Backchannels are a linguistic description of the short phrases, nods, and facial expressions that continue a conversation without necessarily taking a linguistic turn. Examples of backchannels are: "Uh huh," nodding yes, "go on," "is that so?" The relevance to this article is that backchannels can be in the form of questions but not be asking for information or confirmation.

⁴The extreme forms of this kind of verbal harassments are known as flaming and trolling.

⁵Semiotics refers to the use of symbols, semantics to the meaning, and syntax to the structure of the discourse.

⁶Critical discourse analysis emphasizes analysis of the transactions of discourse with social process, ideology, and politics.

⁷The small number of African-Americans and Hispanics on this Web site makes study of these populations impossible. Our earlier study showed that in a multimedia setting, women participated in forums around visual media that included women (Herring, Martinson, et al., 2002). Because there are no images of African-Americans and few of Hispanics on this Web site, we would predict that participation by these populations is unlikely. Thus our results apply only to white women.

⁸In addition to making the video, participating teachers are also responsible for keeping an eye on the discussion forums connected with their video so that they can explain details, answer questions, or advise preservice teachers on pedagogy.

⁹The template, introduced in a face-to-face class, presented a pattern of posting whereby the poster responded with agreement or disagreement to a previous post, then gave evidence for this opinion, followed by a question or statement encouraging further discussion.

Acknowledgments

I was motivated to write this article by the topic of an American Educational Research Association presentation in 2002. I warmly thank co-authors of that presentation Susan Herring and Anna Martinson for their advice and support in that initiating endeavor. Any errors or misinterpretations are solely my responsibility. This article is based on work supported by the National Science Foundation under Grant #9980081.

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