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An Exploratory Study on the Perspective and Experiences of Female Management Studients in an Online Learning Environment

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ABSTRACT

In recent years, the emergence of computer supported collaborative learning (CSCL) has sparked an increasing interest for research into the role and impact of technology on group learning. This study explores the perspectives and experiences of female management students in an online learning environment using the methods of focus group interviews and transcript analysis. The preliminary result suggests positive impacts of technology on minimizing gender differences in an online learning environment. However, this research showed diverse users experienced the impacts differently, despite identical technology being deployed. Further research is needed for better understanding of the potential mechanisms to enhance gender equity in an online learning environment.

INTRODUCTION

In recent years, the emergence of computer supported collaborative learning (CSCL) has sparked an increasing interest for research into the role and impact of technology on group learning. The advent of telecommunication and groupware has extended group interactions beyond the constraint of time and space. Despite all the potential, our understanding of these technologies and their underlying impacts on learners and instructors remains fragmented, in particular with respect to gender learning issues. Given the relative recency of group support technologies, few studies have examined the gender learning issues inside the group learning process as it naturally occurs (Davidson-Shivers, et. al, 2001 and 2003; Larson, 2002; Young & McSporran, 2001; Wang & Sierra, 2002). This paper presents an exploratory study on the perspective and experiences of female management students in an online learning environment that used technology to support interactions.

BACKGROUND

One of the social concerns in today's classroom is the issue of gender equity.

This is especially important in technology-rich classrooms, since technology has been seen as a male dominated domain. The pursuit of emancipatory ideals in education has many implications that may potentially create changes not only in pedagogical practices, but also in the social structure and student to student relations of today's classroom.

According to Wyatt (1993), "one of the basic feminist precepts derives from the observation that gender, class, and race constitute major bases for social organization. The experiences of people of different genders, classes, and races vary widely within most cultures." If one applies this precept to address gender differences in an educational setting, he/she might expect that female students' interacting patterns and learning attitudes would differ from their male counterparts. Research by King (2000), Larson (2002), and Wang & Sierra (2002) support this principle. Consequently, the questions concerned with gender learning issues in classrooms might be: To what extend are we aware of these potentially relevant differences? Are we sensitive to these gender differences? Once we have answered these questions we will then be able to research how to minimize or eliminate the impact of the differences on learning outcomes. Hall and Sandler's (1982) report, "The Classroom Climate: A Chilly One for Women?" documented many ways in which women's contributions and participation are routinely excluded or devalued in college classrooms. This report provided evidence on how gender biases of both male and female instructors, as well as, male students affected the social interactions and women's performance in classrooms.

From the literature cited above, as well as, other studies (Gilligan 1982; Hensel 1991; Pearson, 1985; Shimanoff & Jenkins 1994) on gender issues in general, it is suggested that traditional college classrooms conducted in a face-to-face fashion have many inequitable characteristics for female students. To a certain extent, the gender biases and stereotypes towards female students might be embedded and taken for granted in the learning process exhibited in a traditional classroom.

The introduction of computer-mediated communication into classrooms, specifically the implementation of CSCL systems, will have an impact on the groups' learning processes. Enthusiasts of computer-mediated communication also see it as a democratizing force, because of the immediate accessibility each participant has to the myriad others. Feminists might ask whether such a technology would bring more gender equity to classrooms or whether it would create even more barriers for female students. Most often female online users are spending their time communicating through E-mail (31%) ("Women Use Online Time …", 1998). One of the greatest strengths of E-mail is its ability to break down socio-economic, racial, and other barriers in communication and information exchange for understanding and learning (Hank, 1995). This study contributes interesting insights into CSCL. Primarily, the study's motivation is to derive shared values and understandings of the mechanisms that promote the equal participation and active involvement for all students, the enrichment of classroom's choices and opportunity, and the empowerment of all to overcome constraints and barriers to learning.

In this study, two focus groups of only female students were interviewed. The interviews concentrated mainly on the gender learning

issues to understand how these female students perceived their experiences in an online learning environment. In addition, interviews with the instructors were conducted focusing on the gender learning issues as viewed from the male instructors' viewpoint. It would have been interesting to explore the gender issue from both male and female perspective. However, due to the time and resource constraints, we did not solicit any feedback from male students. This paper reports the findings from these interviews and offers an interpretation of the results. What emerges from this exploratory investigation can be used to suggest future research on the topic of gender learning issues in a computer supported collaborative learning environment.

FIELD STUDY

The Research Site

The study was conducted with students and instructors from two graduate-level elective courses at a major Northeastern United States university. The two courses will be referred to as 'M5' and 'H5'. 'M5' was a MIS strategy course that emphasized the interrelationships among IT applications, management and organizational structure and processes. There were a total of 9 students enrolled in this particular class - three females and six males. The second course 'H5' was "Leadership in Organizations", a management course. The major objective of H5 was to help students' experience and gain insights into the emergence and development of leadership. There were 18 students in this class with nine females and nine males. The participation in the study was voluntary. All participants signed a consent form, which was reviewed and approved by the Human Subjects Committee.

These two classes were chosen for this research for two major reasons: One, the instructors used the GSS application Teamwave version 4.0, to support dispersed group interaction; and two, the instructors were willing to experiment with the use of Teamwave and were supportive of this field study. Teamwave is supposedly the electronic equivalent of a meeting room, which offers a variety of tools including Brainstormer, Whiteboard, Message Board, PostIt, Idea Organizer, etc.

Data Collection

The primary data source was focus group interviews. As a part of the field research design, a series of focus group interviews were conducted at the end of each course. All the interviews were captured on the videotapes and later transcribed into text for analysis. The interviews documented the instructors' and the students' experiences with the online group learning processes and their perceptions of gender issues in classroom.

In the analysis process, transcripts were reviewed and key instances identified as relevant to the group learning processes. These instances were grouped to form supporting evidence for the study's results. Insights extracted from the comments of both the instructors and the students in the interviews provide a deeper interpretation of the group learning process.

PRELIMINARY ANALYSIS AND RESULTS

The focus of the field interviews was to uncover issues related to gender differences in a CSCL environment. The two instructors and all the female students were interviewed. From the interview transcripts, key points relevant to perceived differences between male and female students were summarized. Since all of our interviewees were from the school of management, the first question related to their perception of business education in general - gender-neutral or not. Only one student viewed business education as gender-biased. This exception student insisted that the school of management faculty in general still focus more on "HE" than "SHE" although she believed that people are beginning to recognize this male bias at last. One of the instructors expressed a similar view as he said, "…I am sure it is more male-dominating because people who teach it are male." The other instructor, however, offered quite a contrary view. He said, "…There is no male or female mathematics. So is it with business that deals with statistics and modeling. But I don't deny that in some aspects of business education such as human relations, etc. the difference [between male and female] may exist." Both of the instructors believed that their classes were fairly gender neutral.

Another question raised related to the gender stereotype, in particular the difference in a male mode of behavior vs. that of a female. The responses from both instructors confirmed the existence of such a stereotype. One instructor put it this way, "…When female students exhibit male behaviors, they got rated down….They are called "pushy" by male as well as other female students." The male behaviors might consist of being annoyingly aggressive and persistent. The second instructor described the stereotype in a similar manner, "…As in the past, it has been pointed out that for a female to succeed, she would have to act like a male and adopt a male mode of thinking." Interestingly, the female students did not share these perceptions of the gender stereotype. One student described, "I don't know. I am just myself." Another one expressed, "…For me, I was never brought up in a tradition where male and female roles are defined as such how a woman should be and how a man should be." Unanimously, all of the female students responded that they were not aware of the difference in a male mode of behavior vs. that of a female. However, such a claim, they elaborated, is only true in school not in the work place.

One of the unique features in both H5 and M5 classes was the extensive use of information technology, especially the group support application. An issue that was a motivating factor for this study is whether such a technology would bring more gender equity to classrooms or whether it would create even more barriers for female students. This is a very complex but interesting issue to explore. Based on our limited data and observation, we discovered that the impact of technology on gender equity can go either way. In some cases, it might be an enabler for more equity but in other cases, it might be a hindrance. The following experiences from the two female students are the cases in point.

An Experience From One Student in the H5 Class

In a face-to-face classroom, this student, fictitiously referred to as Mary, was very active. She participated as much as others. Yet, in an online environment, it was a different story as Mary described,

"I think I become more passive online. What I disliked about the online was that others could not really react to what I was saying. …When I felt that it was an important matter, I repeated it again. But I could not get anyone's attention. …You cannot emphasize much online as in a face-to-face. I think I can draw more attention from a group meeting in a face-to-face mode because the way I speak, the words that I put feeling into, the gestures I make, the emotion I feel, etc. In an online, you cannot really do this. Therefore, you cannot get much attention. This is one of the reasons why I participate less online." [From the transcript of H5FGM980519-Gender]

In an online environment, Mary didn't have a feeling of being included and connected. She felt more connected when she was in class. For her, the use of technology for interacting online seemed to create a wall between her and others. She elaborated,

"…I felt more like a spectator online and not able to make a connection. One good example is the time when I and June facilitated an online discussion in class…. I was facilitating the discussion with June who was at another room at the Sociology department. I was over here…. I planned out in advance. I had a set of questions that we could post. I could not keep track of everything being said and meanwhile participating, summarizing, and leading the discussion to the next point. For me, everything was just going from left to right all the time. Because of the different orders that answers were coming, I could not manage…I felt really frustrated. After the online meeting, everyone came together and said, 'it was fun and was a great session.' I didn't feel this at all. I think this is a good example where I felt disconnected and stumbling and did not do a good job at all." [From the transcript of H5FGM980519-Gender]

A Different Experience From Another Student in the M5 class

This student's experiences were quite different from the previous

Table 1: Tabulation of the number statements contributed by each student from the transcripts of two MS online case dicussions

Female/ Male Gender	Case 1	%	Case 2	%	Total	%
F-LH	*10*	*8.93%*	*15*	*9.38%*	*25*	*9.12%*
F-Learner2	10	8.93%	23	14.38%	33	12.04%
F-Learner3	13	11.61%	11	6.88%	24	8.76%
F-Mean	11	9.82%	16.33	10.21%	27.33	9.97%
M-Learner4	12	10.71%	18	11.25%	30	10.95%
M-Learner5	10	8.93%	4	2.50%	14	5.11%
M-Learner6	12	10.71%	1	0.63%	13	4.74%
M-Learner7	13	11.61%	4	2.50%	17	6.20%
M-Learner8	11	9.82%	18	11.25%	29	10.58%
M-Learner9	12	10.71%	19	11.88%	31	11.31%
M-Mean	11.67	10.41%	10.67	6.67%	22.33	8.15%
Total Mean	**11.44**	**10.22%**	**12.55**	**7.85%**	**24**	**8.76%**
Totals	**103**	**91.9%***	**113**	**70.65%***	**216**	**78.81%***

* Instructor's contribution is not included here.

student in H5. For reference, this student will be referred to with a fictitious name LH. LH rarely spoke out in class. During the case discussion in the classroom, she was reluctant to participate. As she described in the interview at the end of the semester, the reason that she didn't speak out in class had a lot to do with the language. LH didn't feel comfortable putting her thoughts into words and expressing them verbally in front of others. For her, this was a cultural issue more than a gender issue. Because in her prior education, there was little demand for speaking up in classroom, her conditioned norm was passive.

In an online environment, it was a different story. Based on the record of the transcripts and the tabulation of statements from the table 1 below, LH (shown in *italics*) was as active as any other students. With 9.12% of total contribution, she participated and contributed above the average. The statistics in Table 1 were from two online case discussions in the M5 class. The data shows the total number of statements contributed by each student associated with his/her gender.

Most of the H5 online sessions consisted of students who were either anonymous or identified by nicknames; it was not possible to trace the gender associated with each statement. Only two sessions in M5 were included in this tabulation because the students' gender was traced back from the associated usernames or nicknames. Students were split into two groups based on gender (F: Female; M: Male), then compared to the total contribution of statements for each group using t-statistics. The comparison between two groups resulted in a t-value of 1.11 at a 0.05 significance level. Generally, 0.05 significance level would be considered significant. However, given the sample size the researchers did not feel that this was strong enough to demonstrate statistically significant evidence that a difference exists in the total number of statements contributed by each gender.

The most active student was a female. On average, the female students were as involved as their male counterparts. More profoundly, for the particular female student identified here as F-LH, there is data suggesting that the technology did enable her to be more active and involved. This opportunity wouldn't have happen if all the discussions were held strictly in a face-to-face condition.

This exploratory analysis suggests that there is no gap in the pattern of online interactions between male and female students. This finding seems to differ from the outcomes of past studies (Brooks, 1982; Eakins & Eakins, 1978; Hardy, et al., 1991; Martin & Litton, 2001, McNeese, et.al., 2003). These past studies report that some female participants perceive male participants as dominating conversations, e.g. males take more of the available time per turn, talk longer, and speak more often than females in a computer-mediated environment. Hence, the finding here suggests a changing pattern. Have female users' online interaction patterns improved as they become more experienced with the technology or are there other yet undetermined factors for this change? Mary's experience suggests some female students are still disadvantaged by the use of CSCL.

CONCLUSION

This study presented preliminary results, which suggests a positive impact of technology on minimizing gender differences in an online learning environment. An online learning environment is conducive for more participatory dynamics than face-to-face environment. The results from this field study show that an online learning environment provides a forum for immediate, multi-party communication among group members and sometimes with minimum clues to a participant's gender identity. These findings are consistent with past studies (Harasim, 1987; McConnell, 1988), and support that computer conferences are as likely to facilitate a woman's full participation.

However, such an assertion is not conclusive because the effect of technology was perceived differently by different students; i.e. the experience of Mary and LH in this study. Interestingly, their experiences provide two seemingly contradictory outcomes with respect to the impact of the technology on gender equity. Hence, the impact of technology might be experienced differently by different users although the same technology is deployed. The implication here is that the impact of technology can be both enabler and hindrance. It might create potential barriers for some female students. At the same time, it might open up the classroom for all others. If it is thoughtfully implemented, technology has a greater potential of bringing gender equity to the classroom by promoting equal participation and active involvement for all students. The technology can be an effective mechanism to enrich the classroom's choices and to empower students to minimize constraints in their learning environment.

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