INTRODUCTION

The evolution of computer-mediated communication (CMC) technologies has brought about changes in the landscape of education. This availability of technologies corresponds with the educational paradigms that are shifting towards the collaborative constructive conceptions of learning (Anderson & Garrison, 1998). To support interaction and cooperative learning among learners, online discussion groups are increasingly being incorporated into the courses of educational institutions.

Educators have deemed interaction as a vital component of collaborative learning (Sutton, 2001), and have provided an important framework comprising four types of interaction: learner-content, learner-instructor, learner-interface, and learner-learner (Hillman, Willis, & Gunawardena, 1994; Moore, 1989). Multiple studies have demonstrated interaction as a critical indicator of positive attitudes towards learning, higher achievement and increased motivation (e.g., Garrison, 1990; Fulford & Zhang, 1993).

If successfully implemented, groupware technologies could support group activities by providing an environment that enables more effective and efficient group communication (Benbunan-Fich & Hiltz, 1999). Benefits associated with collaborative online learning include the availability of time lag which enables learners to reflect on their own perspectives and the opportunity to promote co-construction of knowledge among peers (Bullen, 1998).

In order to facilitate effective construction of knowledge and interaction among learners using the CMC medium, it is critically important for researchers to understand what external factors would influence the interaction styles. In this regard, the current paper takes special note that the study of variations in gender discourse is an important area of research (Gunn, Mcsporran, Macleod, & French, 2003). To date, there has been a growing body of literature which examines the effects of gender on communication styles within an online learning environment. However, the results have been somewhat ambiguous and equivocal across the studies (e.g., Fahy, 2002; Savicki, Kelly, & Lingenfelter, 1996a), suggesting that the binary concept pertaining to gender may not be a useful basis for analysis of communication patterns among learners.

The purpose of this article is to discuss the communication styles of gender and propose a framework which seeks to identify contextual factors that would moderate gender interaction patterns within online learning groups.

BACKGROUND

Communication Styles of Gender

Prior gender-related research conducted in face to face (f2f) settings has indicated distinctions in the interaction patterns of males and females. Studies have revealed that females tend to use interdependent and socio-emotional language and express more non-aggressive behavior. On the other hand, males tend to be associated with task-oriented strategies, expressions of independence and assertions of vertically hierarchical power in their conversational patterns (Duran & Carveth, 1990; Tannen, 1994). In traditional learning environment, research has revealed that the “male learning” style is dominant to the extent that female students speak less in the classroom (Gilligan, 1982).
Analysis of written dialogue discourse in CMC shows that online interaction is a reflection of discourse in rTf mode. Herring (1993), in her analysis of a bulletin board, found differences in language style between men and women. Messages of females tend to be punctuated with “attenuated assertions, apologies, questions, personal orientation, and support”, whereas characteristics of male’s language include “strong assertions, self-promotion, rhetorical questions, authoritative orientation, challenges, and sarcasm” (p. 7). These findings are further supported by Blum (1998) and Savicki et al. (1996a) in their investigations.

Although the above studies provide evidence for gender-related discourse styles, results are not consistent. The ethnographic work by Barrett and Lally (1999) revealed that although either gender displayed similar levels of cognitive content, male students exchanged more social content, and wrote longer messages. In contrast, females sent more interaction messages. Fahy (2002) found that despite being in the minority, women posted nearly as many messages as men did. In a study conducted on a graduate level online course, research results indicated that there were no significant differences in gender interaction styles (Wang & Sierra, 2003).

In general, there are two schools of thought concerning gender communication within the CMC medium (Rena & Keith, 2003). The first perspective maintains that CMC will provide a more democratic and egalitarian setting, in effect mitigating gender differences (Rena & Keith, 2003). Text-based CMC, with its loss of socio-contextual cues (Sproull & Kiesler, 1986), removes all cues associated with gender and social class. The second approach focuses on the view that gender differences in communication styles “transcend the medium” (Sussman & Tyson, 2000).

The above discussion implies that gendered-related discourse styles are fluid and elusive (Michaelson & Pohl, 2001). There is thus no compelling evidence to suggest that the communication patterns conform to the dichotomy of female vs. male categories. This further suggests that some accommodation must be made for the contextual specificity (e.g., work vs. school; collaborative task vs. competitive task) when understanding gender similarities and differences, a stance that is in line with the socio-contextual models of gender (Savicki, Kelly, & Lingenfelter, 1996b; Strough & Covatto, 2002).

According to the socio-contextual perspective, gender behavior emerges from the complex interaction between an individual and the contextual settings (Pickard & Strough, 2003; Strough & Covatto, 2002). Prior research studies conducted within the rTf environment indicates the importance of context dependence in gender-related behavior. For instance, females self-disclose more in social context, but males self-disclose more in collaborative context (Shaffer, Pegalis, & Cornell, 1992). Pickard and Strough (2003) found that males and females reported more feminine attributes when working with a partner of another gender than when working with the same gender during a collaborative task.

**MAIN THRUST OF THE ARTICLE**

**A Conceptual Framework**

As apparent from the preceding discussion, online gender discourse styles might thus be better understood by examining the immediate context (e.g., time) in which the interaction takes place, rather than solely the gender element.

In this section, we put forth a conceptual framework that identifies a set of contextual dimensions which may moderate the discourse patterns of gender in an online setting (see Figure 1). The following deliberates on the individual components of the proposed framework.

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**Figure 1. A framework of gender communication styles in online groups**
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