Gender and Learning Strategies within Cyberspace

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It is a very recent phenomenon for gender differences to receive attention, even though research on CMC goes back to the 1970s, to an earlier stage in computer technology. The current research reports survey results on gender differences in cyber learning strategies with respect to expression, information processing, self-control, and use of human resources; and suggests instructional interventions to guarantee a gender-free cyber learning environment.

Introduction

It is a very recent phenomenon for gender differences to receive attention, even though research on CMC has been back to the 1970s, to an earlier stage in computer technology (Herring, 1994). Learner issues are the core elements for success in cyber education (Bonk & Dennen, 1999) and learning strategies among those issues are especially significant factors. Nonetheless, the existing literature on learning strategies in cyberspace is limited and none of it focuses on gender differences.

The current research reports survey results on gender differences in cyber learning strategies as follows:

1. How do genders differ in ‘expression’ in cyberspace?
2. How do genders differ in ‘information processing’ in cyberspace?
3. How do genders differ in ‘self-control’ in cyberspace?
4. How do genders differ in ‘the use of human resources’ in cyberspace?

Literature Review

A great deal of distance education literature supports the claim that learner characteristics are very critical factors for achievement and satisfaction levels in distance education (e.g. Willis, 1994; Smaldino, 1999; Simonson, 1999). However, relatively insufficient attention to learning strategies is found in the current cyber education literature. Burge and Eastmond found that learners in online context transfer many of learning-to-learn approaches from traditional learning contexts to online setting. At the same time, however, they identified online environment request learners idiosyncratic learning strategies. Burge (1993) found learners using learning strategies with respect to making choices, expression, group interaction, and the organization of information. Eastmond (1993) found that learners in computer conferencing based online courses employ strategies to deal with multiple discussions, information overload, asynchoronicity, textual ambiguity, and processing online information and determining what contributions to make. Conferencing systems, basically with a hypertext structure and led by learner participation, demand of learners a high level of self-regulation and meta-cognitive abilities in the learning process.
Methods

The subjects were 156 undergraduate students, 35 males and 121 females, from a medium size university in Seoul, Korea. These students were varied in terms of their academic backgrounds and years in their programs. All of the courses were integrated with a web-based instruction tool, UniverCampus.

A 28-item questionnaire survey was conducted during the final week of the semester. The questionnaires were organized into four categories: expression, information processing, self-control, and the use of human resources. Each item was designed with 7-point Likert type scales, using values of 1 for “strongly agree” and 7 for “strongly disagree”. Post-hoc, internal consistency reliability of the survey was measured to be Cronbach \( r = .86 \). T test was computed for the questionnaires and 7-point Likert like items with negative descriptions were reversed for convenient interpretation.

Results and Discussion

Expression: Responses, in general, indicate that males appear to use more proactive and aggressive expressions than females and feel less mental pressure. More males perceived themselves actively presenting opinions (p<0.05) and felt fewer difficulties in expressing ideas in a written form within the cyberspace (p<0.05). Moreover, more males are positive toward cyber discussion (means = 3.86); on the contrary, females are more likely to be negative toward it (means=4.35) (p<0.05). In addition, females showed stronger appreciation about expressing ideas in a written form in the “real” space (p<0.05). Those findings, as a whole, confirm various existing research that learner characteristics in real space are highly transferred into cyberspace (McDowell, E. E. & Schuelke, L. D., 1998; Fishman, 1997).

Processing of information: 12 questionnaires were asked with respect to information overload, information decoding, and mental pressure of asynchronous interaction. Males appear to outperform females in perceptual and behavioral strategies as well. If overloaded, more females tended to skip reading others’ postings than males (p<0.05). In addition, when messages were overloaded, females (mean score=4.33) tended to feel more difficulties in selecting and appreciating them than males (mean score=3.8) (t=-1.917, p = .057). This result implies that more females may lack skills and strategies for managing information overload in cyber space and, as a result, experience more obstacles in cyber learning process than males.

In spite of no significant differences in the degree of “reading” messages posted by other learners, the degree of “dislike” of reading them was significantly different between genders (p<0.05). On the contrary and interestingly, females outperformed males in submitting assignments or learning activities corresponding to instructors’ statement (p < 0.01). There was no statistical difference with respect to motivational strategy needed for asynchronous communication (p=. 066). Considering mean scores, however, males tended to be more positive (means=3.83) toward asynchronous communication; on the contrary, females were more likely negative (means=4.27).

Self-control: Questionnaires employed the items of time management, diligence, and persistence. The analysis, in general, revealed no statistically significant differences between genders except the following. Females are more likely to outperform males in submitting assignments or participating in activities within due date (p < 0.05).
Use of human resources: Two items were employed to determine whether any differences existed between gender with respect to use of instructors, assistants, or colleagues in order to solve any instruction or supportive problems during the cyber learning process. The analysis revealed no statistically significant differences.

Conclusions
This research reveals significant gender differences in the categories of expression strategy and information processing strategy, in which males showed stronger abilities and positive attitudes without exception. The findings are not entirely surprising, since they replicate many of the existing findings from the areas of communication, linguistics, and sociology and more.

Currently dominant modes of cyber courses demonstrate structures and functions in favor of males. However, it should not be taken for granted; we have to move toward a gender-equal cyber learning environment. This can be achieved by including instructional design and implementation, which might more likely respond to learning strategies in favor of females. Of greatest potential leading to gender inequality in a cyber learning environment is its text-based, public, and information overload natures. I suggest the following instructional interventions to overcome potential negative impacts of those natures on female learners.

First, considering that females tend to experience difficulties in thinking and expressing in a written form, there is a need for providing additional interaction modes, which might support rather a dialogue-like interaction. Real time chatting is one of the exemplars of instructional intervention. In addition, sound materials and interaction through voice messages should be used more substantially.

Second, considering that females tend to experience difficulties in public postings and arguments, there is a need for learning opportunities through rather informal and social interactions. Among others, I suggest designing learning spaces for small group discussion and reading materials for individualized learning. Individual learning activities, rather than too much focusing on learner-learner interactions, might be instructional interventions useful for females who demonstrate rather high apprehension in public interaction.

Third, considering that females rather tend to experience difficulties in reading others’ messages, when especially overloaded, there is a need for interface design which might help individual learners to search, organize and present information in their own convenient way. Concurrently, it is equally useful for mediators to regularly provide summary notes of shared information and ideas among learners.

References


