

# **An Analysis of Social Presence and Cognitive Presence in Discussion Forum**

*Mehran Memari<sup>1</sup>, Amir Zalpour<sup>2\*</sup>, Mehdi Zia<sup>3</sup>*

<sup>1</sup>Assistant professor, Farhangian University, Ahvaz, Iran

<sup>2\*</sup>MA, Department of Teaching English Foreign Language, Sheikhbahae University, Isfahan, Iran, amirzalpour@gmail.com

<sup>2</sup>MSc., Department of Medical Library and Information Science, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

<sup>3</sup>Phd Student, Department of Teaching English Foreign Language, Shiraz University, Shiraz, Iran

## **Abstract**

An increase of asynchronous online discussions in website provides much opportunity for L2 learners from different global communities to be exposed to the target language at their own pace and time. However, no research looking at the essentials of social presence and cognitive presence in creating a supportive learning environment in such a context has been done. This study investigated the patterns of social presence and cognitive presence in context of Iran. It also examined the relationship between social presence and cognitive presence. Using content analysis, the data were analyzed from 304 online messages. The findings showed that levels of social presence and cognitive presence were significantly related and supported the notion that social presence plays a significant role in sustaining cognitive presence in discussions.

**Keywords:** Discussion Forum, Social Presence, Cognitive Presence.

## **1. Introduction**

A major problem for a foreign language classroom is a limitation in its ability to develop learners' communicative competence in the target language. This is due to "the restricted number of contact hours with the language; minimal opportunities for interacting with native speakers; and limited exposure to the variety of functions, genres, speech events, and discourse types that occur outside the classroom." (Demo, 2001, p.1) However, the advancement of modern technology has brought about more channels for students to learn and practice the target language through exposure to actual language used both in and out of the classroom. Synchronous and asynchronous communications on the Internet such as chat, mail, and discussion forums provide a learning context that generates significant opportunities for communicative practice of the target language and opportunities for meaningful learner output to a significant degree outside the classroom context.

The purpose of the present study is to examine how social presence in relation to cognitive presence manifests itself in an online Iranian environment and to what extent the categories of social presence and cognitive presence emerges in

such an online environment. With a focus on the characteristics of social presence and cognitive presence in an online discussion forum and an interest in ensuring the relationship between the social presence and the cognitive presence, and between the social presence and the participation rates, a content analysis will be employed.

## **2. Method**

### **2.1 Procedure**

Data were obtained from the messages posted and replied to regarding the theme of "Learning English" on researcher-made discussion forum. The online discussion messages (304) were collected and printed as hard copies. Then individual message was then divided into "thematic units" (unit of idea or meaning) as per Arnold and Ducate's (2006) method.

### **2.2 Analysis**

Content analysis has been used as a research method to examine social presence and cognitive presence that occurred within text-based online discussions in the current research. The reason is that it is a technique that "provides a rich source of data for researching and understanding online learning" (Gerbic and Stacey, 2005, p. 1) and a deep understanding of online discussion (Guan, Tsai, and Hwang, 2006, p. 283). It is also often used by many researchers to analyze transcripts of asynchronous, computer mediated discussion groups in formal educational settings" (De Wever, Schellens, and Keer, 2005, p.1). Therefore, in the current study, each transcript of an online discussion was divided into thematic units (units of idea or meaning) and then identified based on the framework of social and cognitive categories and indicators developed by Garrison et al. (2000, 2001).

### **2.3 Variables**

Major variables in the current study were occurrence numbers of social and cognitive presence including numbers of messages. Since the amount of social presence is based on the number of social presence indicators exhibited in the participant's online messages, the variables for social presence data in this study were the following:

- a) Number of emotional expression categories, which are composed of numbers of two indicators, humor and self-disclosure.
- b) Number of open communication categories, which are the number of mutual awareness plus the number of recognition of each other's contribution indicator.
- c) Number of group cohesion category.

Similarly, the amount of cognitive presence is based on the number of cognitive presence indicators expressed by the participants in the discussion topic, and is facilitated by social presence (Garrison et al. 2000, 2001). The variables for cognitive presence were:

d) Number of trigger event category, which consists of the number of recognizing a problem and the number of sense of puzzlement indicators

e) Number of exploration category, which combines the number of information exchange indicators with the number of discussion of ambiguities indicators.

f) Number of integration category, which is composed of the number of connecting ideas indicators and the number of create solution indicators.

g) Number of resolution category, which consists of the number of vicariously applied new ideas indicators and solutions indicators.

We conducted the study under the below hypothesis:

Hypothesis: *There is a strong relationship between the degree of social presence and cognitive presence in an online discussion.*

### 3. Result

A paired samples *t* test was conducted to determine the statistical difference between the mean scores of social presence and cognitive presence and to analyze the relationship between these two variables. A simple linear regression was then performed to test whether social presence can accurately predict cognitive presence in an online discussion.

The results of a paired samples *t* test showed that the mean number of social presence was 21.50 (*sd* = 41.946) and the mean number of cognitive presence was 17.50 (*sd* = 28.129). No significant difference between the mean of social presence and the mean of cognitive presence was found ( $t(29) = 1.324, p = .196$ ). In other words, social presence and cognitive presence have a similar number of occurrences. A paired samples correlation (Pearson Correlation Coefficients) was calculated for the relationship between social and cognitive presence. A strong positive correlation was found, ( $r(29) = .965, p = .000$ ), indicating a significant positive linear relationship between the two variables. The numbers of social and cognitive presence are related significantly; high social presence yields high cognitive presence, and vice versa.

According to the coefficient of determination (*R* square), approximately 93 percent of the variation in the numbers of cognitive presence could be explained by the differences in the numbers of social presence. A strong significant regression equation was found ( $F(1, 28) = 377.151, p < .001$ ), with an *R*<sup>2</sup> of .931. A positive unstandardized coefficient for social presence ( $\beta = .647$ ) it also indicates a positive relationship with cognitive presence. Predicted cognitive presence is equal to  $3.589 + .647$  (social presence) when cognitive presence is analyzed in number of occurrences. The model indicated that the numbers of social presence could be used to predict the numbers of cognitive presence; specifically, for every 1 social presence increases, there increases .647 number of cognitive presence. Based on the

findings, the level of social presence being positively related to the level of cognitive presence in online discussions was statistically substantiated.

#### 4. Discussion

The current findings support our hypothesis that there is a strong relationship between the degree of social presence and cognitive presence in an online discussion. In particular the amount of cognitive presence depends on the amount of social presence; high social presence results in high cognitive presence. The results support the notion that social presence played an important role in encouraging cognitive presence in online discussions (Garrison et al., 2000). The reason that social presence promoted cognitive presence could be accounted for by the fact that social presence created affective communication and established a social connection that stimulated a learning environment for participants to share and contribute more knowledge and ideas. According to Rourke et al., (2001), the existence of social presence indicators illustrates the levels of social presence in an online discussion. High frequencies show that the social environment is "warm and collegial" while low frequencies indicate the environment is "cold and impersonal".

#### 5. Conclusion

The study revealed a positive relationship between the levels of social and cognitive presence in non-academic online discussions. The results confirmed that social presence helps support critical thinking in online communication. This suggests that individuals involved with online learning should pay a great deal of attention to the creation of a social environment that encourages cognitive thinking.

The findings of the current study provide significant contributions and implications for research on asynchronous online discussions and on online teaching in terms of instructional design and teaching strategies in Iran. The study showed that social presence was a major factor in supporting higher order thinking in online communication and suggested that online teaching should focus more on the social aspect of online learning together with pedagogy and content (Garrison & Anderson, 2003). These findings not only confirm the results of the previous study (Garrison et al., 2001) but also have further provided implications for instructional design and teaching strategies.

#### References

- Arnold, N., & Ducate, L. (2006). Future foreign language teachers' social and cognitive collaboration in an outline environment. *Language Learning & Technology, 10*, 42-66.
- Demo, D. A. (2001). Discourse analysis for language teachers. *Online resource Digests*. EDO-FL-01-07. Retrieved April 10, 2007, from <http://www.cal.org/resources/Digest/0107deiTio.html>

- De Wever, B., Schellens, T., Valche, M., & Van Keer, H. (2005). Content analysis schemes to analyze transcripts of online asynchronous discussion groups: A review. *Computer and Education*, 46(1), 6-28.
- Garrison, D.R., Anderson, T., & Archer, W. (2000). Critical thinking in a text-based Environment: Computer conferencing in higher education. *Internet in Higher Education*, 2(2), 87-105.
- Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence, and computer conferencing in distance education. *American Journal of Distance Education*, 15(1), 7-23.
- Garrison, D. R., & Anderson, T. (2003). *E-learning in the 21st century*. London: RoutledgeFalmer.
- Gerbic, P., & Stacey, E. (2005). A purposive approach to content analysis: Designing analytical frameworks. *Internet and Higher Education* 8, 45-59.
- Garrison, D. R. (2006). Online collaboration principles. *Journal of Asynchronous Learning Networks*, 10(^). Retrieved August 16, from <http://www.sloanc.org/publications/JALN/v1On1/v1On13garrison.asp>
- Guan, Y-H., Tsai, C-C., & Hwang, F-K. (2006). Content analysis of online discussion on a senior-high-school discussion forum of a virtual physics laboratory. *Instructional Science*, 34, 279-311.
- Rourke, L., Anderson, T., Garrison, R., & Archer, W. (2001). Methodological issues in the content analysis of computer conference transcripts. *Journal of Artificial Intelligence in Education*, 12,42-63. Retrieved April 28, 2007 from <http://cbl.leeds.ac.uk/ijaid/>