Preliminary Study on Factors Affecting Aptitude Level for Social Learning Focusing on EFL Online Discussion

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Abstract: The purposes of this preliminary study are (1) to investigate possible factors for English as a foreign language (EFL) learners' behavior and attitudes towards computer-supported collaborative learning focusing on online discussion. Comment numbers, satisfaction and perceived group contributions on two online discussions of 58 EFL students were analyzed with multiple regression correlation, in relation with items of six inventories; (a) social skill (Kikuchi, 2007), (b) Self-efficacy for English learning with CSCL based on Matsunuma (2006), (c) English learning strategy (Kubo, 1999), (d) Social presence and cognitive presence with text-chat developed based on Gunawardena & Zittle (1997), (e) Felder-Soloman Index of Learning Style (ILS) (Felder & Silverman, 1988), and (f) researcher-developed questionnaire for a discussion task. The results show that 11 items collectively account for 76.2% of the comment number variance ($F(11,46)=13.39$, $p<.01$), 15 items and "sequencel" type score of learning style significantly explain 89.2% of the learners' satisfaction ($F(16, 41)=21.12$, $p<.01$), and 2 items and "sequential" type score of learning style describe 32.8% of the learners' perceived contribution ($F(3, 54)=8.80$, $p<.01$). There are three overlapped items and one learning style type for all prediction equations. It indicates that 25 items and 11 items for sequential/global type in the learning style types may be utilized to predict EFL learners' behavior and attitudes towards online discussion.

Keywords: online discussion, CSCL, EFL, social skills, learning style, social learning

Introduction

The purposes of this preliminary study are to investigate possible factors for English as a foreign language (EFL) learners' behavior and attitudes towards computer-supported collaborative learning (CSCL) focusing on online discussion. As social media has become popular, trials of applying it to educational setting is increasing. One of major problems of such applications is that learning activities with social media seems beneficial for learners with high aptitude towards online social activities. In other words, learners with low aptitude seem not to obtain much benefit from social learning. This research is placed as a basic research for a central algorithm to determine learners' aptitude level towards social learning in order to provide individualized appropriate supports.

1. Research Methods

There were 109 Japanese university students of CALL class as initial research participants. The data of the 58 students with all research tasks completed were analyzed. Three discussion topics were prepared. First one was used to provide learners chances to practice using the bulletin board system of the learning management system (LMS), and the discussion 1 was not included for the data analysis. Students were required to discuss on each topic in a group of four to six members in their class. A span for each discussion was one week between two classroom instructions. Teachers provided some feedback only in the face-to-face instructions, not during the discussion spans.

In order to collect data related to learners' attributions and characteristics, six inventories were employed; (a) social skill (Kikuchi, 2007), (b) Self-efficacy for English learning with CSCL based on Matsunuma (2006), (c) English learning strategy (Kubo, 1999), (d) Social presence and cognitive presence with text-chat developed based on Gunawardena & Zittle (1997), (e) Felder-Soloman Index of Learning Style(c) (ILS) (Felder & Silverman, 1988), and (f) researcher-developed questionnaire for a discussion task. Brief description of each inventory is as followed. All inventories except for (e) and (f) are 5-point-Likert scales (1: Not agree at all - 5: very much agree). (a) Social skill inventory includes 21 items in four categories. (b) Self-efficacy for English learning with CSCL consists of 17 items. (c) English learning style inventory contains 13 items. (d) Social presence and cognitive presence with online discussion provides 25 items and six items are related to online discussion. (e) ILS consists of 44 dichotomous items for four dimensions, with the internal consistency reliability of ranging .55 to .77 (Litzinger, Lee, Wise & Felder, 2007). (f) Researcher-developed questionnaire consists of four questions; a 4-point Likert item for satisfaction of the discussion, a perceived contribution to the discussion group with a response of percentage, and two open-end questions about pros and cons of the learning activity. It's conducted on each discussion topic before the instructors' feedback.

For the data analysis, the comment numbers recorded on LMS, the satisfaction points with the inventory (f), and the perceived contributions (%) with the inventory (f) were utilized as dependent variables (DVs). The average numbers for two discussion topics were employed as DVs. Fifty one items of the inventories (a) to (d) and the raw scores with the full score of 11 for each dimension of learning style were used as independent variables (IVs). Each DV was performed with multiple regression correlation (MRC) analysis in the presence of all IVs. MRC would be repeated three times to create three prediction models for each DV and its experimental-wise *alpha* is .03 with the priori-set alpha level .01.

2. Results and Conclusion

According to the results of stepwise MRC analyses (Table 1), three models for the DVs were suggested with statistical significance. Eleven items collectively account for 76.2% of the comment number variance ($F(11,46)=13.39$, $p<.01$), 15 items and "sequence" type score of learning style explain 89.2% of the learners' satisfaction ($F(16, 41)=21.12$, $p<.01$), and two items and "sequence" type score of learning style describe 32.8% of the learners' perceived contribution ($F(3, 54)=8.80$, $p<.01$). There are some overlaps for three items and one learning style type among the all prediction equations. It indicates that 25 items and 11 items for sequential/global type in the learning style types may be utilized to predict EFL learners' behavior and attitudes towards online discussion. Furthermore, there could be a possibility to apply them to classification of learner aptitude types for social learning. The limitations of this research should be considered in the future research; grouping and group memberships, kinds of discussion topics, and learners' English proficiency.

Table 1. Inventory Items in Each Prediction Model and Its Entry Order

DV	Entry Order	Inventory*	Item #	*B*	Item
Number of Comments	a**			1.26	
	1	d	6	0.39	I felt comfortable participating in the course discussions.
	2	c	10	-0.74	I guess meanings of the contents based on a whole story.
	3	c	8	0.67	I guess meanings of unknown words when I read English materials.
	4	d	23	-0.46	I can describe ways to test and apply the knowledge created in this course.
	5	b	2	0.19	I can get high marks and scores in English classes.
	6	d	17	0.14	I felt motivated to explore content related questions.
	7	c	7	0.28	I make tables and charts of relationships when I learn English grammar.
	8	c	5	-0.27	I determine what I don't understand when I read English materials.
	9	a	6	-0.20	I can handle criticisms from others well.
	10	d	16	0.37	Course activities piqued my curiosity.
	11	d	25	-0.34	I felt motivated to explore content related questions.
Satisfaction	a**			2.90	
	1	a	11	-0.27	I can come to a composition with uncomfortable peoples.
	2	d	12	0.16	I was able to form distinct individual impressions of some participants via a text-based medium.
	3	b	8	-0.35	I think that I know how to study English.
	4	d	17	0.17	I felt motivated to explore content related questions.
	5	b	5	0.27	I know a lot about learning contents of English.
	6	b	10	-0.25	I can read English newspaper.
	7	c	7	-0.22	I make tables and charts of relationships when I learn English grammar.
	8	d	24	0.20	I have developed solutions to course problems that can be applied in practice.
	9	a	19	0.11	I like discussions and debates.
	10	e		0.07	Learning Style "Sequence" score
	11	a	14	0.15	I can help others well.
	12	a	10	-0.15	When I feel fear or anxiety, I can handle them well.
	13	d	7	0.13	The members created a feeling of an online community.
	14	c	13	-0.12	When I read English materials, I first check the meanings of unknown words and write them down on the text.
	15	a	6	-0.10	I can handle criticisms from others well.
	16	c	9	-0.09	I try to comprehend the overall meaning without caring details that I don't understand well when I read English materials.
Contribution	a**			-28.65	
	1	d	8	7.00	The moderators facilitated discussions on the online discussion.
	2	e		2.48	Learning Style "Sequence" score
	3	b	4	5.22	I can comprehend What to be taught in English classes.

Note. *Alphabets are match to the inventories in 1. Research Method. **Constant Number.

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