Exploring the effect of incorporating Facebook with project based learning activity on learners' creativity – A preliminary investigation

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Abstract: Social interaction is known to be one of the key elements in Computer-supported collaborative learning (CSCL). Through frequent social interaction, learners are expected to obtain heterogonous perspectives and develop divergent thinking, which could awake creativity, in the learning process. Facebook (FB), a popular social networking service, provides functions that allow people to interact with each other. Recently, educational researchers have looked into the potential of adapting FB in teaching activity. However, relative few attentions have been devoted to the relationship of the extent of engagement in online discussion using FB and the quality of learning outcome in collaborative learning. Therefore, this study incorporated FB with a group project teaching activity to explore the relationship between the extent of students' engagement in online discussion using FB and the quality of their project outcomes. Results showed that students' engagement is positively correlated to the completeness of the group project. Based on our preliminary findings, discussion and subsequent research are presented in this paper.

Keywords: Creativity, CSCL, Facebook, Project-based learning, social interaction

1. Introduction

Previous studies suggested that social interaction could be one of the key elements in Computer-supported collaborative learning (CSCL) [1][8]. Frequent social interaction is beneficial in forming positive climate for knowledge sharing and group member cohesion, which could contribute to effective learning and better learning outcome [6-7]. Meanwhile, by the productive discourses with peers, learner could be able to learn from heterogonous perspectives and experiences of peer learners [10]. In other words, a divergent thinking, which is helpful in triggering creativity, could be achieved during the social interaction [4].

In recent years, Facebook has shown exponential growth in the number of its users. Facebook (FB) created a social space for people to interact with each other. And, social interaction is known to be beneficial in achieving better learning outcomes [1]. In this manner, numerous educational researchers have explored the potential of incorporating FB into teaching activity (e.g. [5][9]). Despite many studies have addressed the applications of FB in education and learners' perceptions, However, in the context of CSCL, research that further investigate the relationship of the extent of learners' engagement in online

discussion using FB and the quality of their learning outcomes, e.g. creativity and completeness, is still quite limited.

To better understand this phenomenon, this study incorporated FB as an online discussion platform with a group project teaching activity in an electronic commerce course. The purpose of this study is to explore the relationship between the extent of students' engagement in online discussion using FB and the quality of their project outcomes in terms of creativity and completeness. As a preliminary investigation, discussion and future research are provided based on the findings of this study.

2. Research method

2.1 Participants and procedure

The participants of this study are 39 students from a university of northern Taiwan. Students were enrolled in the course – Electronic commerce. The purposes of this course are to introduce business models, the affordance of novel technologies, and successful case studies, etc. Students were divided into 7 groups to complete a required group project that incorporated Facebook discussion. In specific, each group was asked to collaboratively design a tablet as well as innovative services using the tablet they designed. Seven Facebook secret groups, i.e. closed discussion group, were created for each group to discuss their project. Students can only access the content of the secret group they belonged to. At the end of the semester, each group had to give oral presentation of the project in the class. In order to explore the interaction among students during and the content structure of the project discussions, this study retrieved messages that each group posted in the Facebook secret groups. A total of 1472 messages were retrieved for further analysis.

2.2 Data analysis

The assessment of creativity has not come to a universal agreement [3]. Various criteria for assessing creativity have been proposed, one commonly adopted approach is to evaluate the degree of creativity exhibited in one' work. Amabile (1996) suggested that the degree of creativity of a work can be assessed based on one's subjective and holistic evaluation of it [2]. Following this approach, the instructor of the course rated each group's final project proposal in terms of the degree of creativity. Meanwhile, one more dimension, i.e. completeness, was also adopted to assess the overall richness of elements include in the project. The instructor then scored each group project from 1 to 10 according to the two dimensions mentioned above. The number of messages retrieved as well as the scores of creativity and completeness for each group are available upon request.

In this preliminary report, we analyzed the relationship between the extent of students' engagement in online discussion, i.e. the number of post in each FB groups and the quality of their project outcomes in terms of creativity and completeness. Pearson correlation was conducted to analyze the relationship between the number of post in each FB groups and the creativity score as well as complete score. Results showed that the number of posts of each group is not significantly correlated with the creativity score ($r=0.495$, $p = .129$). On the other hand, the number of posts of each group is significantly correlated with the completeness score ($r=0.784$, $p = .018$).

3. Conclusion and subsequent research

This study provides a quick glimpse over the relationship of the extent that students engaged in online discussion and the learning outcome of their project. Our results showed that the extent of students' engaging in online discussion showed positive relationship with the completeness of their group project. In other words, the higher the level that students interact, in terms of the number of posted messages, in the Facebook secret groups, the higher the completeness score of their respective group project would be. Nonetheless, our initial data analysis showed no evidence of the relationship between the extent of engagement in online discussion and the creativity score. However, these results should be taken as tentative as the preliminary stage of this study is in. An elaborate quantitative content analysis (QCA) of students' posted messages in helpful in depicting a clearer picture of the pattern of students' interaction, the content structure, and the creative discourse during online discussion in FB.

In this brief report, we didn't address the individual differences issue, such as gender or personal style of creativity, in our research context. In the subsequent phases, this study is to extend the current results, by taking individual differences into account, to further explore the behavioral patterns and creative interaction in the context of online discussion using Facebook. Moreover, the relationship between students' behavioral patterns and the degree of creativity in the project outcomes can also be further addressed.

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