Chapter 28

The Impact of a Scaffolded Assessment Intervention on Students’ Academic Achievement in Web-based Peer Assessment Activities

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ABSTRACT

Web-based peer assessment has been considered an important process for learning. However, students may not offer constructive feedback due to lack of expertise knowledge. Therefore, this study proposed a scaffolded assessment approach accordingly. To evaluate the effectiveness of the proposed approach, the quasi-experimental design was employed to investigate the effects of scaffolded assessment for self-critiques and peer assessment on students’ learning effectiveness in the web-based assessment activities. A total of ninety 7th graders participated in the experiment, and divided into three groups with or without the scaffolding critique. The results show the use of the scaffolded assessment in the web-based peer assessment activities did not show a significant difference in the students’ learning effectiveness. Even though the results show that learning effectiveness of the participants in the two experimental groups is significantly enhanced, there is no significant effect of providing the scaffolded assessment on the participants’ learning effectiveness in the three groups. In addition, the participants showed a positive learning attitude toward the web-based assessment activities and agreed that the activities could enhance the participants’ interactions between the peers and instructor.

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INTRODUCTION

Research on web-based peer assessment had been extensively studied and indicated that web-based peer assessment has positive effects on self-perceived learning (Chang & Tseng, 2011), indicating that web-based portfolio assessment could help students understand what they did in the learning process. Due to rapid development of network technologies, disadvantages of paper-pencil based peer assessment have been gradually corrected and then replaced by assessment on the Internet. Individuals who share common interests, feelings, or ideas over the Internet form a virtual community in which learners evaluate peers’ works, receive feedback from peers, modify their original works based on peer assessment, and then make their works become better (Topping, 1998; Tseng & Tsai, 2007). Peer assessment enables learners to gain diverse ideas and inspiration, enhances their higher order thinking skills, and offers peers opportunities to learn from each other, which can promote learners’ learning motivation and achievements (Jaillet, 2009; Tsai & Liang, 2009; Tsai, Lin, & Yuan, 2002; Yang & Tsai, 2010). Results of web-based peer assessment are consistent with those of student assessment (Sadler & Good, 2006; Sung, Chang, Chiou, & Hou, 2005). Johnson (2000) stated that adding a third evaluator can enhance the validity of assessment. Anonymity in web-based peer assessment can prevent interference from human relationships and increase the validity of assessment. If learners possess a high degree of self-efficacy in web-based peer assessment activities, they tend to have high confidence and less anxiety in activities which would lead to great learning effectiveness (Tseng & Tsai, 2010).

However, the development of expertise requires sustained practice and learning. The lack of expertise may result in weak peer feedback and reviews due to incomprehension and misunderstanding of works which reduce the validity of peer assessment. Cho, Schunn, and Wilson (2006) stated that scaffolded assessment facilitates evaluators to assess given tasks precisely. The essence of scaffolding is similar to the construction of a new building. Scaffolding is the support given during the learning process which is adapted to the needs of students and offers appropriate assistance to ensure that learners can achieve their learning goals. Scaffolding can be gradually reduced and then entirely eliminated when learners can independently solve various problems and complete tasks without assistance (Wood, Bruner, & Ross, 1976). Cho (2006) stated that the use of scaffolding can ensure the reliability and effectiveness of peer assessment by proposing scaffolded assessment which provides guidance of peer assessment for students, shows concepts and rules of peer assessment, and promotes explicit motivation or stimuli to examine whether peer assessment is accurately performed. Commonly used web-based peer assessment includes instructor assessment, student self-assessment, and peer assessment (Chang, Tseng & Lou, 2012).

Most assessment activities are carried out by teachers which increase their workload. Self-assessment can enable students to promote self-reflection, understand advantages and disadvantages of works, be responsible for learning and assessment behaviors, and enhance motivation to improve original works (Burch, 1999; Chang, 2008). Learners are allowed to observe peers’ works, understand their learning progress, reflect on self-learning, and then provide feedback to peers for further improvement (Chang & Tseng, 2011). In addition, learners could obtain more inspiration from peer feedback than that of teachers’ because peers have a better understanding of themselves than that of teachers (Chen, 2010). Thus, this study proposes the scaffolded assessment for self-critiques and peer assessment by using self-critiques and peer feedback as an evaluation basis.
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