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Chapter 13
Multidimensional Assessment of Open-Ended Questions for Enhancing the Quality of Peer Assessment in E-Learning Environments

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ABSTRACT

In online learning environments, peer assessment activities lack the observation and supervision by the teacher or instructor. Therefore, students may be lacked full effort to assess their peers. There exist the students' hesitation about criticizing their peers and scoring their peers honestly, the likelihood for peer assessment to be occasionally unreliable and unfair. The present assessment methods focus only on the single-dimensional assessment of content rather than the activities and collaborations among the students. Students also have no chance to analyze and comment on their peer answers. This study explored the multidimensional assessment method on open-ended question to foster positive attitudes and full effort among students engaging in E-learning environments. The objectives are as follows: 1) To develop a process model for multidimensional assessment (M-DA) to enable effective learning 2) To develop free-text answers assessment by using vector space model and semantic extraction model 3) To develop an algorithm for evaluating students' based on multidimensional assessment. Two groups of parallel students taking an e-course were tested on the system. The results of experiment noted that the proposed method overcomes the method just focuses on student assessment only without consideration and evaluation of the quality of the peer assessment. In light of the findings, the proposed method actively impacted on the development and improvement of learning and the quality of peer assessment among students in E-learning environments.

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INTRODUCTION

In traditional classes, students study and interact in a face-to-face learning environment, so they can learn faster because they are able to seek guidance from their peers and instructors directly. On the other hand, in a traditional class, student studying for an examination supervised by the teacher; tools are appropriately supported for such things as supervision and instruction. Therefore, students are required to study actively and more serious in their approach to the examination. In their class, students can assess and observe each other as well as obtaining feedback and guidance from their teachers or peers. Conversely, the online learning environment lacks of an observation and an appropriate environment to accommodate students to study actively. The barriers still exist which inhibit the efficiency of online teaching and learning (Assareh & Bidokht, 2011; Wong, 2007). Students are required to complete a test based on question types, namely multiple choice, true/false, short answers, matching, and so on. This holds not fully significance when regarding assessment because the accurate comprehension levels of students is only known by assessing their free-text answers. Moreover, students are less self-awareness when they are studying in a virtual learning system without teacher observation.

The assessment in E-learning is facing lack of assessment quality and interaction among students, which hinder students learning. To enhance qualitative evaluation of knowledge and skills of students, there are some assessment techniques that have been researched and published to support the assessment of free-text answers. For example, in (He, Hui, & Quan, 2009), (Alfonseca & Pérez, 2004), (Zhang, Yoshida, & Tang, 2008), etc. However, these assessment methods just focused on enhancing the accuracy of assessment on free-text answers. The assessment contents were put at the centre of method instead of students' activities and interactions to enhance learning efficiency. The current assessment on open-ended question is also one-dimensional assessment. One-dimensional assessment just focuses on the assessment contents rather than the students' activities and interactions among students.

In addition, Peer assessment (PA) has a lot of usefulness in teaching and learning processes. It improves learning, self-assessment capabilities and helps students identify their weak and strong points in their studying, and also fosters collaborative learning. For example, the authors in (AlFallay, 2004; McGarr & Clifford, 2012; Zundert, Sluijsmans, & Merrienboer, 2010) researched on psychology and attitudes of students of peer assessment; Elliott et al. in (Elliott & Higgins, 2005) used self and peer assessment to evaluate contributions of members in a group work, and the authors in (Cho & MacArthur, 2010; Gielen, Peeters, Dochy, Onghena, & Struyven, 2010) analyzed and evaluated the effectiveness of peer feedback for learning and writing revision.

Online PA makes peer assessment more efficient, freedom of time and space for student assessment, ensures anonymity, and facilitates willingness to critique. Online peer assessment was used to develop science activities (Lu & Law, 2012; Tsai & Liang, 2009), to assess the students' projects (Tseng & Tsai, 2007), and to improve science writing (Liang & Tsai, 2010). In (Yu & Wu, 2011a, 2011b), the authors designed an online system with multiple peer-assessment modes to assess their designing questions to improve making question skills.

However, online peer assessment has several disadvantages, including students' hesitation about criticizing their peer (Kaufman & Schunn, 2011), students' fear of scoring their peers honestly, the likelihood for peer assessment to be occasionally unreliable and unfair (Papinczak, Young, & Groves, 2007; Strijbos & Sluijsmans, 2010), and the limited ability to evaluate the work

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www.igi-global.com/article/context-design-impact-system-wide/69788?camid=4v1a