Peer Assessment and Self-Assessment in Social Learning Environments Through a New Crowd-Sourced Mechanism

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ABSTRACT Social learning environments generally provide learners with the grounds to collaboratively create and share different learning contents. The variety and considerably large amount of created contents makes them infeasible for students to read through and often results in a continuous reduction in students’ contribution. Therefore, social learning environments should be equipped with effective mechanisms to evaluate and accredit learner-created content relying on students’ participation. In order to suggest a voluntary mechanism for peer assessment with the least overhead, the current study proposed a new crowd sourced approach. The approach called content-dependent multi-label voting (COMVO) offers various assessment options for each type of learning content consisting of resource, assignment, forum, discussion, reply, and comment. COMVO was implemented in a social learning environment and was utilized by students and experts during educational activities in a university course. Peer voting, self-voting, voting to experts, and expert voting were qualitatively analyzed. The results indicated that in contrast to peer voting, which mostly consists of positively describing labels, self-voting labels match those given by experts. Analysis implied that peer voting is reliable and expert-independent. This paper also provided insights about student behaviors and reciprocal effects in identified voting, investigating the role of students’ extrinsic and intrinsic motivational orientation in their voting behavior. Results of a subjective evaluation indicated that the majority of respondents found COMVO an enthusiastic and efficient tool with the potential to complete other similar crowd sourced peer assessment mechanisms.

INDEX TERMS Online peer-assessment, crowd-sourced assessment, voting, social learning, online

1. INTRODUCTION
Social learning environments which provide students with a wider range of facilities to contribute and interact, require more complicated assessment mechanisms. According to social learning theory, when students observe peers’ behaviors and the corresponding feedbacks received, they model those behaviors and imitate in the future [1], [2]. In online or blended courses which are designed and applied according to this learning theory, students can observe peers’ activities and contribute content creation and sharing as teachers do. The variety and considerably large amount of created contents makes it hard for students to follow peers contribution and often results in a decrease in students’ contribution [3]. Hence, social learning environments require effective and flexible assessment mechanisms which should benefit peer contribution in addition to expert evaluation and automated tools.

Online peer assessment (PA) has been mostly realized as students’ participation in evaluating assignments submitted by peers through grading, scaling, feedbacking, and reviewing [4]. Such assessments are validated in different ways: peer grading is close to that of expert [5], [6], students ranking matches instructors one [7], and peer feedback is consistent with expert feedback [8]. Crowdsourced peer assessment is defined as interactive feedback from a large and diverse group of peers, and consists of interactions such as voting, ranking, and commenting [9]. These types of assessment presume that all learners can observe and evaluate peer activities, and hence they are more suitable for online social learning environments than other peer-assessment mechanisms.