Chapter XVIII
Fostering Interactivity through Formative Peer Assessment in (Web-Based) Collaborative Learning Environments

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ABSTRACT

Extant literature on collaborative learning shows that this instructional approach is widely used. In this chapter, the authors discuss the lack of alignment between collaborative learning and assessment practices. They will argue that peer assessment is a form of collaborative learning and a mode of assessment that perfectly fits the purpose of collaborative learning. As such, the authors purposefully depart from the more traditional application of assessment as a summative tool and advocate the consideration of formative peer assessment in collaborative learning. This shift towards formative assessment they believe has the potential to enhance learning. Their goal in this chapter is to review both shortcomings of current peer assessment practice as well as its potential for collaborative learning. Interactivity is central to foster the alignment between assessment and collaborative learning and the authors present a set of guidelines derived from research for increasing interactivity through formative peer assessment among peers in collaborative learning contexts.

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INTRODUCTION

Most research on collaborative learning has focused on investigating the effectiveness of instructions to support and scaffold learning in small groups, as well as the applicability of web-based technology to foster such collaboration (see Fischer, Kollar, Mandl, & Haake, 2007; Jones, Cook, Jones, & De Laat, 2007; Ochoa, Gottschall, & Stuart, 2004; Strijbos, Kirschner, & Martens, 2004). Interestingly collaborative learning assessment practices have received less attention. Assessment practices tend to be teacher-directed (Chan & van Aalst, 2004; Slavin, 1995) and only few include self- (Barron et al., 1998) and/ or peer assessment (Trahasch, 2004). Where peer assessment components are used, they are summative (to determine whether a criterion is met) rather than formative (to determine where a student can improve). Not surprisingly a 'group score' is most often the unit of measure for any given group task, supplemented either with one or multiple individual tasks. Typically, the final score consists of the average with a weighting factor applied. However, as assessment strongly influences learning (Black & Wiliam, 1998; Crooks, 1988**;** Frederiksen, 1984), we propose in this chapter that any collaborative learning activity should apply an assessment that a) reflects both the collaboration process and product, b) promotes students' collaboration skills as well as cognitive skills, and c) promotes students' self-regulation skills. In fact, we will argue that assessment in collaborative learning does not fully tap the potential benefits of the interactive setting unless it includes a mode of assessment that evokes a high and active responsibility from the learner, a component we hold is a critical aspect in collaborative learning.

As a team of researchers from the education and behavioural science disciplines who share an interest and expertise in collaborative learning, web-based instruction, and peer assessment we first outline the value of peer assessment for collaborative learning settings, illustrated by recent developments in assessment. Subsequently, we present the main shortcomings of current peer assessment practice in light of collaborative learning and provide some reasons why these shortcomings hamper a formative and interactive use of assessment. From the perspective of interactivity, which we define in depth, we present various interactive forms of peer assessment (face-to-face and web-based) and also illustrate how peer assessment can be used to elicit interactivity and subsequently learning (i.e., in terms of collaboration skills, cognitive skills, and self-regulation skills). It should be noted that this chapter predominantly focuses on the pedagogical design issues of peer assessment in collaborative learning (which apply to classroom and web-based settings), and the technology design issues are beyond the scope of this chapter. We close the chapter with a set of guidelines for the application of peer assessment in collaborative learning, and directions for future research and practice of (web-based) peer assessment.

BACKGROUND

Collaborative Learning and Assessment: The Lack of Constructive Alignment

Collaborative learning refers to an instructional approach in which students work together in small groups toward a common goal. The assumption is that learning processes are more effective and productive when students solve problems in collaboration, as compared to when they work alone or only with the teacher (Webb, 1992; Slavin, 1995). In sum, advocates of collaborative learning hold that students learn more in groups than they do in traditional lecture-based instruction (Dochy, Segers, Van den Bossche, & Gijbels, 2003; Ochoa & Robinson, 2005). Research has also shown that collaboration enhances students'

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