

# Chapter XLVI

## Internet–Based Peer Assessment in High School Settings

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### **ABSTRACT**

*Many educators have suggested the usage of peer assessment for the improvement of learning outcomes. Peer assessment facilitated by Internet technology can enhance anonymity and lead to better interactions between students and peer reviewers. In addition, online peer assessment can effectively store students' peer interactions and learning progression portfolios for further analyses or evaluations. However, most peer assessment studies have been conducted with higher education students, such as college or graduate students. This chapter reports an initial meta-analysis of a series of research utilizing online peer assessment involving Taiwanese high school students. This study also summarizes some practical principles for conducting online peer assessment in high school settings. Finally, this chapter proposes the required literacy of using Internet-based peer assessment, both for the learners and teachers.*

### **BACKGROUND**

In recent years, educators have suggested some alternative ways of evaluating students' learning outcomes, such as interviews and concept maps (Keiler, 2007; Stoddart *et al.*, 2000). However, these methods are still guided by the teachers, who judge and determine the learning performance. Peer assessment is also proposed as an alternative method of assessment of student learning (Fal-

chikov, 1995, 2001), but it requires that learners should carefully review peers' work. In this way, the learners themselves are engaged in the assessment process. Thus, the learning environments are more student-centered, emphasizing the autonomy of learners and peers' viewpoints. Clearly, the features of these environments concur with the practice of constructivism proposed by contemporary educators (Falchikov & Goldfinch, 2000; Gijbels *et al.*, 2006; Kearney, 2004; Tsai, 2001a).

In fact, the ideas of using peer assessment are recognized by the practice of social constructivism where individuals provide feedback or guidance to their peers (Lin, Liu & Yuan, 2001; Tseng & Tsai, 2007). The social interactions among peers during the peer assessment process are quite important. If the quality of the social interactions is not good enough, such as in the situation where they do not offer constructive comments to their peers, educators cannot expect desirable learning outcomes from peer assessment.

In addition, the development of online technology can create better learning environments for utilizing peer assessment for school settings (Prins *et al.*, 2005; Reeves, 2000). For example, with the assistance of online technology, the students can review peers' work without the constraints of time and location. Also, the students can dynamically modify their work through the online learning environments. The online systems can ensure better anonymity of peers (Davies, 2000), and can input or survey some peer reviewers' background information (such as gender, achievement or preferences for certain issues), and then automatically assign each learner's work to reviewers of more heterogeneity or homogeneity, depending on the researchers' or teachers' intentions. For example, the teachers may hope that each peer's project (or assignment) is reviewed by students of a different gender or achievement level, or, in the opposite situation, the teachers may hope that the work can be evaluated by a similar level of reviewers. The online systems can have the capacity of assigning each peer's work to fit the peer reviewers' interest or expertise if relevant information is available for matching the pairs between author and reviewer. In addition, the online systems can record thorough data about all of the students' assignments for each round of peer assessment, as well as all of the peer review comments. The teachers and researchers can acquire a better understanding of the progression of the work and the role of peers' comments in its development. Clearly, traditional peer assessment (basically paper-and-pencil) can not fulfill this purpose.

The utilization of peer assessment or online peer assessment has gradually become popular in higher education settings. For example, Topping (1998) has reviewed many studies in higher education which have implemented peer assessment for learning. However, until now, there have only been a few studies involving high school students (e.g., Graham, Slocum & Sanchez, 2007), and those using online peer assessment are even fewer (Hsu, Tsai & Chen, 2002; Tseng & Tsai, 2007). The reasons behind this may be that many educators may have concerns about high school students' knowledge and ability as peer assessors, and the students may also lack the experience of using online systems for learning or assessment. Nevertheless, in this chapter, I provide a summary of my research team's findings and experiences of high school students or those of similar age using online peer assessment for learning.

## **OVERVIEW OF THE CHAPTER**

In 2003 Taiwan launched an E-Learning National Program (ELNP), with a fund of about US\$22 million per year. Many e-learning Websites, systems and platforms have been developed through the support of ELNP. The use of information technology for assisting teaching is common across elementary school, high school and higher education settings. It is easy to find some platforms to implement Internet-based peer assessment. Hence, in recent years, my colleagues and I have conducted a series of online peer assessment studies involving Taiwanese high school students (e.g., Tseng & Tsai, 2007; Yang *et al.*, 2008; Yang & Tsai, in press). The purpose of this chapter is to provide an initial meta-analysis of these studies. By summarizing the findings, it is expected that this chapter can offer guidance for those educators who want to undertake online peer assessment for high school students.

This summary chapter covers the following issues. First, based on the research literature, this

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