Investigating the allocation and corroboration of individual grades for project-based learning

Simon Williams

Centre for Languages, Taylor's University, Malaysia

ABSTRACT

Concerned with grade allocation, contribution and an emphasis on final product production in a project-based class, a study was conducted in order to investigate methods in which to address these issues. The researcher of the study, also the teacher, utilised a technical action research approach with two cycles in order to investigate his own classroom practice at a private university. The researcher created and ran two projects with the class to coincide with each cycle. Results were collected in the form of passive observation, a questionnaire, reflections, self-assessments, group-evaluations, and wiki logs. Results from the study yielded a number of aspects for practitioners to consider when developing project-based assessment, and a discussion on aspects of group assessment including free-riders, co-created assessment, and weightage, and validation.

© 2017 Elsevier Ltd. All rights reserved.

1. Background

Project-based learning (PBL) can provide opportunities for learners to engage in active learning as well as the opportunity to learn new soft skills such as collaboration, communication, and negotiation. Nevertheless, PBL can also create stress and disagreement in regards to grade allocation. While observing my class, which consisted of English as a second language learners, and engaging with them in PBL, I noticed that assigning a single grade for a group did not take into consideration the notion of individual contribution. This caused the learners in the class to lose motivation to complete the project, as they were aware that certain members would receive a grade for simply standing on the sideline. Two projects were created and required students to work collaboratively in groups of three to complete the aims, which revolved around gathering and consolidating information on a new culture in the first project, and designing a new classroom environment in the second. Concerned with how individual contribution was not taken into consideration in previous projects, I set out to study how a single grade could be allocated for each group member.

2. Literature review

The benefits of group work, collaborative and co-operative learning have been well theorised and researched (Gokhale, 1995; Li, 2002; Slavin, 1996, 1991; Vygotsky, 1978). A review of the literature by Lai (2011) claims that collaboration can have positive effects on student learning, for instance increasing critical thinking (Gokhale, 1995), informative retention (Johnson & Johnson, 1986), and the opportunity to become active learners (Hew & Cheung, 2008). Since then, to further develop this type of learning methodology, task-, project-, and problem-based learning have attempted to give teachers a framework in order to create effective group learning environments which follow a pedagogical framework. The work by Willis (1996) uses an approach whereby students are put in groups to complete a pre-designed task, which is carried out collaboratively. However, any teacher attempting to implement this in their classroom may not only be faced with the challenge of using a new methodology, but creating a system for assessment (Elliott, 2008).

Project work significantly reshapes the classroom, as aims and objectives are stretched over longer durations, which often leaves teachers in the dark as to whom is contributing (McLaughlin & Simpson, 2004). Teachers now have to rely on students to be their eyes and ears, as the inner workings of the project process is known only to each student within the group (Race, 2001). A number of possible issues could arise when a collaborative project is created; the first being free riders (James, McInnes, & Devlin 2002): a term given to a group member who does not equally

E-mail address: simonjwilliams79@gmail.com (S. Williams).

contribute to the overall group process. The free rider, then, may create a frustrating and stressful environment for the remaining members of the group, as they are left to take on the extra workload (Strauss & U, 2007). Consequently, awarding a single grade to the group would not accurately reflect the contribution of each member (Gibbs 2009; Sluijsmans, Moerkerke, Van Merrienboer, & Dochy, 2001).

This issue may in some part be attributed to the assessment system used to provide a grade to a group. When the final product of the project is viewed as the sole outcome, the process involved in which to create it may seem to be relegated to a position of less importance. Mclaughlin and Simpson (2004) note that by disregarding the process aspect of projects we are devaluing the collaborative aspect that underpins this learning theory. To further illustrate the importance of assessment, Boud, Cohen and Sampson (1999) note that: "Assessment is the single most powerful influence on learning in formal courses and, if not designed well, can easily undermine the positive features of an important strategy in the repertoire of teaching and learning approaches" (p.413).

2.1. Assessing group work

A number of studies have investigated collaborative assessment (Brooks & Ammons 2003; Caple & Bogle, 2011; De Wever, Van Keer, Schellens, & Valcke, 2011; Exley, 2010; Gibbs, 2009; Hartford, 2005) and in each study, different methods were used in order to assess collaborative work. One such method utilised was self-assessment (SA) and group-evaluations (GE), as a way to provide the teacher with additional information on the group process. One dilemma with the use of SA is the question over its validity (Hughes, 2001; Kennedy, 2005), due to a finding by Boud and Falchikov (1989) concerning over- and underrating: the former refers to learners who give themselves higher grades than they may deserve, whereas the latter refers to learners who may give themselves lower grades than they may deserve. This finding has also been substantiated by later studies that find weaker learners tend to overrate while stronger learners tend to underrate (Lejik & Wyvill, 2001; Sadler & Good, 2006; Wilmot & Crawford, 2005).

To date research into assessment on project-based work has generally taken a micro approach to investigating specific areas of interest. Though a focused investigation wields valuable insight, the narrow approach does not address the complexities that teachers will face as they attempt to implement a project-based learning environment in an actual classroom setting. To address this concern, this study utilised an action research design to investigate the 'actual practices' (Kemmis & McTaggart, 2005) of a lecturer as he attempts to discover methods in which to provide individual grades for a project. To guide this research, two research questions were formulated and are presented below.

2.2. Research questions

1. How can individual grades be allocated for each student working collaboratively within a group?
2. What evidence can teachers collect in order to substantiate individual grades when segments of the work are completed outside of the classroom and/or online?

3. Research design

For this study it was decided that an Action Research (AR) approach would be best suited to address the research questions. Kemmis (2009) states that: "action research aims at changing three things: practitioners' practices, their under- standings of their practices, and the conditions in which they practice" (p.463). It is with this concept of AR that the study set out to research and understand the 'practitioner's practice' in the assessment of project-based activities. Technical action research (TAR) was specifically selected for this study. In this form, TAR is suited to research scenarios whereby the practitioner seeks to improve his practice with the focus laid solely on him, and where the aim of the study is to improve a specific outcome (Kemmis, 2009; McNiff, 2002). Criticism of this approach has been noted by Leitch and Day (2000) who claim that TAR has the potential to reduce the reflective process, as practitioners may preoccupy themselves with immediate concerns thus decreasing the opportunity for reflective thought. Though this is a concern, the study has taken precautionary measures to address this aspect of the research design by establishing a 'critical friend' (McNiff, 2002). The critical friend (CF) is a colleague of the researcher at the same university in which the study took place. The CF is a PhD holder with expertise in education with an emphasis on the teaching of mathematics and assessment. As a colleague from a different school and department at the university, he provided a critical view of the researcher's findings from an outsider's perspective.

This study adapted an action research framework suggested by Kemmis and McTaggart (2005). The framework (Fig. 1) contains two cycles and six steps. Stage one asks the researcher to identify what needs to be researched, in the case of this study, the allocation of individual grades. Stage two requires the researcher to plan an intervention, which is subsequently implemented in stage three. Data is collected in stage four in the form of observations, questionnaires, or live data from online tools and assessment
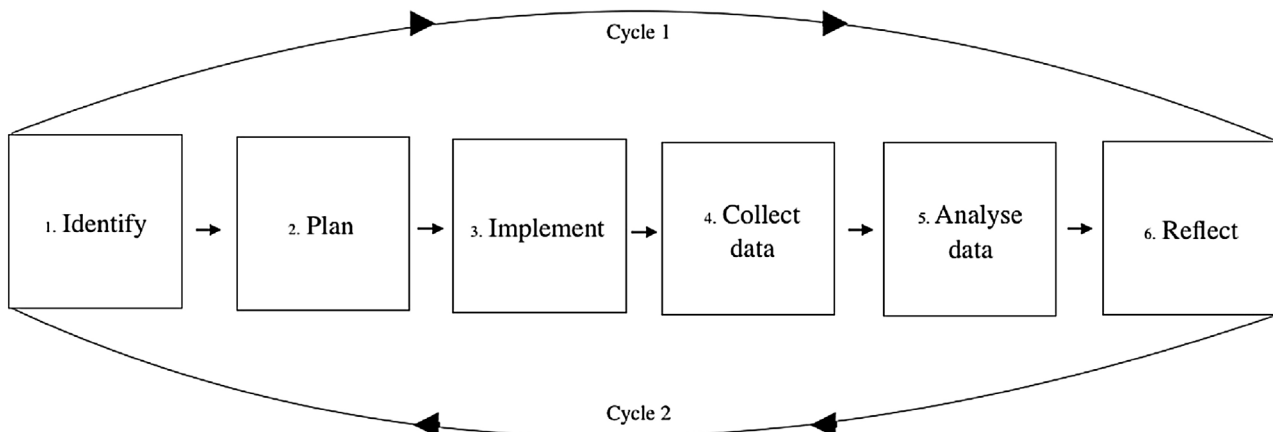

Fig. 1. Action Research Framework Adapted from Kemmis and McTaggart (2005).