

The Impact of Technology-supported and Triangulated Writing Tasks on a Pilot Interdisciplinary Undergraduate Subject for Construction Disciplines

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Abstract

This article presents findings from the technology-supported implementation of triangulated writing tasks in a pilot interdisciplinary subject for construction disciplines in a Hong Kong university, and discusses these findings in relation to the broader issues of collecting, assessing, and reporting evidence of student learning in higher education. The writing tasks were writing-intensive activities delivered through Blackboard Learn 9.1, including 5 ePortfolio-based (TreeDBNotes 3.38) individual writing assignments, at least 1 individual blog entry, and 1 end-of-semester group report. 53 students from all departments within the Faculty of Construction and Environment participated in the study. The study was driven by two questions: (i) how might these technology-supported writing tasks provide triangulated data to demonstrate student learning? (ii) what kinds of other learning evidence could be collected from these writing tasks? The directed content analysis of these writing tasks found that (i) a longitudinal inclusion of various technology-supported writing tasks had a positive effect on the attainment of the subject learning outcomes, and that (ii) the educational issues associated with student learning processes and others could also be determined from them. These results suggest that the writing tasks piloted here can serve as a rigorous alternative for demonstrating evidence of student learning. More studies are needed on the generalizability of such an alternative.

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1. Background of the study

This article presents findings from the technology-supported implementation of triangulated writing tasks in a pilot interdisciplinary subject for construction disciplines in a Hong Kong university, and discusses these findings in relation to the broader issues of collecting, assessing, and reporting evidence of student learning in higher education.

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Originated from the Hong Kong government's proposed reform of the academic structure of the senior secondary education and higher education (UGC, 2004; UGC, 2006), the undergraduate structure in Hong Kong universities was stipulated to change from the ≥ 3 -year to the ≥ 4 -year undergraduate structure starting from 2012. The change, commonly known as the "3 + 3 + 4" reform, denoted 3 years junior secondary education, 3 years senior secondary education, and ≥ 4 -year undergraduate education. In essence, the change was not simply a 1-year deduction in the original secondary education and 1-year addition to the original undergraduate programs (Hyland, 2014). Its overarching aim was "to move away from a focus on specialization to a more holistic approach to the educational experience" (HKCAAVQ, 2008). The change, in particular, had quite a number of common goals such as (i) including a broader academic experience outside students' major disciplines, (ii) focusing more on non-academic learning experiences, (iii) linking with workplace and foreign exchange, (iv) focusing on the holistic development of students, and (v) developing graduates who can excel in the global knowledge economy and meet Hong Kong's rapidly changing needs, etc. (HKCAAVQ, 2008). Hong Kong universities were charged with developing approaches that fit with their own university contexts to address these goals. The pilot interdisciplinary subject in this study was one of many new subjects along with other initiatives in Hong Kong universities to accommodate the change.

The pilot interdisciplinary subject, namely, Construction for Better Living, was a 14-week-long mandatory subject for students of the Faculty of Construction and Environment in their first year of the new undergraduate education in a Hong Kong university. Consistent with the common goals laid down in the "3 + 3 + 4" reform, the objectives of the pilot subject were to: (i) introduce students to how their chosen disciplines can contribute to "Better Living," and get them excited about their major study; (ii) cultivate students' creativity, problem-solving, and global outlook abilities; (iii) expose students to the concepts and an understanding of entrepreneurship; and (iv) engage students, in their first year of study, in desirable forms of learning at the university level that emphasized self-regulation, autonomous learning, and deep understanding. After piloting and further enhancements, this subject would officially serve as a part of the discipline-based first year curriculum within the Faculty of Construction and Environment to support students choosing a major, developing graduates' attributes advocated by the university, being active agents in academic pursuits, and in short, the adaptation and transition to their university studies in the new undergraduate structure.

For this study, researchers were interested in the use of technology-supported and triangulated writing tasks and their impact on this pilot interdisciplinary subject for demonstrating evidence of student learning. Specific interest in technology-supported and triangulated writing was partly in response to the funding requirement of the study and partly due to researchers' interest in investigating whether these writing tasks could serve as another kind of evidence-oriented practice to address the broader issues of collecting, assessing, and reporting evidence of student learning in higher education, predominately given the pressures facing higher education to account for student learning outcomes (ENQA, 2014; QAA, 2014; UGC, 2013). In essence, this research was mainly guided by two questions: (i) How might these technology-supported writing tasks provide triangulated data to demonstrate student learning? (ii) What kinds of other learning evidence could be collected from these writing tasks in the piloted context of an interdisciplinary subject?

2. Guiding theoretical framework

Growing trends show that evidence-oriented practices of learning and teaching in universities are increasingly influenced by technologies (Arola & Wysocki, 2012; Barnes, 2003; Bradley, 2014; Buyarski & Landis, 2014; Chen, 2012; Daunert & Price, 2014; Jayaprakash et al., 2014; Neal, 2011; Siemens, 2014; Watson & Doolittle, 2011). Whether for improved ways of analyzing, assessing, collecting, composing, or showcasing evidence of student learning, it is not uncommon to note that technologies such as blogs, eJournals, ePortfolios, learning analytics tools, online discussion forums, and wikis, to name a few, have their contributing roles to play.

A single use of any of these technologies or a purposeful blend of them can transcend what and how the technology-supported practices of learning and teaching can do for demonstrating evidence of student learning. From the perspective of collecting evidence of student learning, for example, many of these technologies actually help digitize students' work as a kind of documentation that makes both student learning processes and student learning outcomes visible. Even dating back to the pre-Web 2.0 era in the late twentieth century, computer-mediated communication technologies such as eJournals (e.g. LiveJournal) and online discussion forums (e.g. GeoCities Bulletin Boards) at that time were already used to capture both students' work as the final products of learning and students' efforts in coming up with these products, which were otherwise difficult to investigate in non-technology-supported practices (Barnes, 2003; Takayoshi, 1996).

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