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University teachers designing for active learning

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Abstract: Presented is a concept that forms the basis of a larger research project which aims to understand the university lecturers design practices to foster creativity. The research findings of author's PhD dissertation show that the university teachers' design practice can be improved by paying more careful attention to explanation of the rationale for each designed task. When the communicative function of a task design is given proper emphasis – acknowledging the need for students to make designed tasks meaningful – then better outcomes become more likely.

Key words: Educational design, university teaching and learning, creativity, how students learn

1. Introduction

Over recent decades, there has been a perceptible shift of emphasis in higher education from teaching by telling to learning by doing. This increases the importance of well-designed *tasks*, particularly in digital environments. Teachers design tasks for students, as a way of structuring and scaffolding their learning activities (Prosser & Trigwell, 1999). Task specifications rarely determine what students then do (Dave, 2017). Rather, task specifications can be understood as resources on which students draw in the process of shaping their own learning activities. How students make sense of the tasks they are set also becomes an important influence of what and how they learn.

Educational design is a hybrid practice. For some people, it is a professional practice with roots in systematic approaches to instructional design (Gagné, 1974). For others, it is just a part of what they do as lecturers – often 'taken for granted' and not seen as needing special skills, concepts, methods or training (Bennett, Agostinho, & Lockyer, 2016; Goodyear, 2015). A key concern of professional educational designers is to ensure rigor through the use of structured methods and appropriate learning theory in designing and/or selecting learning materials that align with learning outcomes . In contrast, few higher education lecturers have specific training in design methods or learning theory and little experience in using explicit methods and theory to guide the 'designerly' aspects of their work. How then do university lecturers design learning tasks for their students? Despite the practical importance of good task design for effective learning outcomes, there is little research on how university lecturers engage in task design.

2. Research Aims & Methodology

This study set out to improve our understanding of how university teachers design tasks and how students then interpret the tasks set for them. The research focused on three main objectives – to provide a better, empirically informed, understanding of: (1) university teachers' design decisions - with particular attention to their design rationales (2) students' interpretations of their teachers' design intentions, and (3) teachers' reflections on their students' interpretations of the designed tasks, with particular attention to potential areas of match and mismatch between intentions and interpretations.

A case study methodology was employed, involving close examination of nine individual cases – each being a course taught by a university teacher. Data were collected in three phases from teachers and students using semi-structured interviews with teachers, written responses from individual students and student focus groups. The three phases of data collection addressed each of the three research objectives in turn. Analysis was conducted using verbal data and thematic analysis techniques.

3. Results

Results show that when teachers explain how they designed tasks they draw upon a range of beliefs about what constitutes good teaching and learning, on contextual factors, and on particular needs and characteristics of the student cohort. Results also show that students interpret teachers' design intentions less accurately when

(a) the intended learning outcomes are complex and/or
(b) when the teacher is not explicit about the intended learning outcomes or the rationale for the task.

In this admittedly small sample, teachers' designs including explanations of the *how* of a task, rather than the *why*. Students expressed a need to get an explanation of this missing or implicit task rationale, so that they could better understand the task from a whole of course perspective. This study has practical implications for helping university teachers improve how they design tasks for students, particularly by paying more careful attention to explanation of the rationale for each designed task. When the communicative function of a task design is given proper emphasis – acknowledging the need for students to make designed tasks meaningful – then better outcomes become more likely.

4. Challenges & Questions

As the technology is invariable part of education now, it pauses new challenges for teachers simplify the intended outcomes. When technology is used to achieve learning outcomes, one more layer of complexity is added to the task. Thus, teachers may have to consider:

- Could the outcome be achieved without using technology?
- Why using that particular technology would be the best choice to achieve the outcome?
- Which technology is suitable for the particular task?
- Does use of the particular technology present any learning challenge for students? If students are expected to learn the new technology/part of technology, is it forming the part of assessment?
- Did the lecturer explored the affordances of the particular technology that he/she is trying to use?

In this research project, all the task used some form of technology and that paused some additional challenges for the teachers while designing the task and for students while doing the tasks.

The broader research project would involve the creation of structured guidance for the university teachers to help with their design in form of patterns (Goodyear & Yang, 2008). The work could expand to more practical work result into a repository of a well-designed tasks that the teachers could readily use in conjunction with the patterns.

The project could have the dimension of professional development for the teachers to understand what design is in their context and apply their customised notion of design to their own disciplines. Existing design support tools may be explored in context during this exercise (Laurillard, Kennedy, Charlton, Wild, & Dimakopoulos, 2018).

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