Designing with Constraints: Are we designing for creativity or compliance?

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Presented is a concept that forms the basis of a larger research project aiming to understand the university lecturers design practices around bureaucratic constraints and, as a result, if they were still able to be creative. This idea was developed from the research findings of one of the author's PhD dissertation (Dave, 2017) wherein the lecturers expressed their design practice impacted by the various constraints which are explained in this paper. The authors argue that like other professional designers (engineers, architects), lecturers should be able to be creative despite the constraints. Also raised are the higher-level issue of learning and training in the area of higher education which makes people more responsive to creativity.

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

Introduction

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. This is where the use of structured methods and appropriate learning theory in designing and/or selecting learning materials and tasks is critical to learning outcomes (O'Reilly, 2004). In contrast, few higher education lecturers have specific training in design methods or learning theory, or with 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 students' learning outcomes, there is still limited research on how university lecturers actually engage in task design, or on how they explain what they expect students to do when tackling tasks that they have designed.

Background study

The research proposed in this paper is based on the results of a PhD study conducted by one of the authors Dave (2017). It is relevant to present the study briefly. The project explored university teachers design practice by conducting a series of case studies which included semi-structured interviews along with the other data provided by the teachers. Total of nine courses from a range of disciplines (mathematics education, social work, pharmacy, accounting, psychology, human resource management, Australian sports culture) participated. Out of the nine courses, four courses were undergraduate, four courses were postgraduate, and one course was combined degree. Almost all the data gathered was qualitative in nature such as verbal audio recordings,
transcripts, written documents. Some quantitative data was produced – mainly the numbers of students in each course and some demographic data about them. The study was conducted in three phases.

The first phase was semi-structured interviews with the teachers from different disciplines. In the first interview, the teachers nominated a task which they talked about. Teachers explained how they designed the task and what was the rationale for the task and why did they think the task was the best choice to achieve the learning outcome. Therefore, phase one provided teachers' intention for the choice of the design.

The second phase was the students' focus groups from each teachers' class. The students were asked: "what do you think your teacher is trying to achieve here?", "how the task was communicated to you?" "was the rationale for the task explained to them?" and so on. This phase was divided into two stages. The first stage was the written individual responses from the students on the above questions. In the second stage, the students discussed the same questions in the focus group.

The third phase then was to take the results of phase two (what students think of the task and task rationale- design intention) and ask teachers feedback on students' interpretation of the design. This was the opportunity for the teachers to reflect on their choice and get feedback from the students on their design through the researcher. At this stage, the alignment/misalignment of teachers design intentions to students' interpretation was prepared and

discussed. In the cases where the misalignments between intention and interpretation were emerged, one of the reasons teachers provided was bureaucratic constraints that limited their creativity. The results showed that design practice is constrained by policy-related factors. As a result, lecturers are more focused on compliance with those policies and not on the curiosity that the task needs to generate among the students. The following section outlines those constrains and discusses the idea of designing with constraint and its impact on student engagement.

Designing with constraint

When academics design an activity or assessment tasks for students, one of the challenges that they are dealing with is bureaucratic or regulatory constraints. For instance, one can only give student so many assessment tasks, it could be worth so many points and it could only take so many hours to do. Lecturers also have to map the assessment tasks to the unit/subject and curriculum outcomes, graduate attributes, learning outcomes and so on (Prosser & Trigwell, 1999; Ramsden, 2003). There are a lot of constraints to deal with. It contrasts with how people used to set the assessment task in the past. Academics setting up the activity (particularly assessment tasks) are much more conscious of the regulatory constraints than they are of educational purposes and what suffers is the opportunity for students to make personal meaning of the assessment task through their own creative input.

To contrast lecturers' role as a designer with the serious designers from the other disciplines such as architecture, product design or mechanical engineering, we need to take the analogy, let's think about the architecture designer – an architect. The constraints that an architect deal with are much more complicated and much more numerous than lecturers in higher education have to typically deal with (Alexander, 1977). The architects have constraints of space, context, material, approvals related regulations, and so on. If one is a trained professional designer such as an architect, one has to deal with numerous constraints and yet able to make the activities creative. It could be argued that in taking this constraint seriously, one becomes more creative (Alexander, Ishikawa, & Silverstein, 1977). This leads to how the academic task sets in context, where academics have to be conscious of the constraint, and yet manage that creativity. Expanding on this analogy further, we want more than the creativity or a creative piece of work from academics, who are designing the task, but also want to be open for the user of that designed task (students in this case) to be able to adapt creatively in the same way architects want their users to take ownership of the building and personalise for their own use (Dave, 2017). Design professionals nowadays often manage to work with multiple constraints and still come out with creative tasks. This raises an important question as to how academics in universities can be assisted to manage this complexity.

Freedom to interpret

Fig. 1 below illustrates the conceptual distinction between the task and the activity in which students actually immerse themselves. A point of contention can arise when what students do is different from what the teachers want them to do. One clear message stemming from the distinction between the aim of the task (design intention) and the activity carried out (interpretation of the design by the students) is that teachers need to design tasks allowing flexibility for students - with adaptive properties, to allow for students' interests, needs and capabilities. For example, a teacher's design *ideally* might set some requirements for a project and let students relate the task to their views or work situation. Also, students have to judge for themselves how much time and effort they need to dedicate to an activity given other competing for academic and non-academic demands on their time and energy.

Mann (2005) suggests that the students are alienating their labour in the sense that they cease to see the intrinsic value of the task and they trade their labour for marks in the way that people at work trade their labour for wages. If the students being in the mode in their higher education where that is how they typically make sense of the task, then it is very hard to get them to undertake tasks other than fairly simple trade of their time and marks. Mann (2005) refers to this as an issue with communication without referring to the design. This does not mean that once alienated, always alienated or alienated a bit means alienated a lot. Never-the-less, even in situations in which students often adapt that alienated position, it is still possible from time to time to set up a task that they will interpret in a different kind of way (Goodyear, 1997).
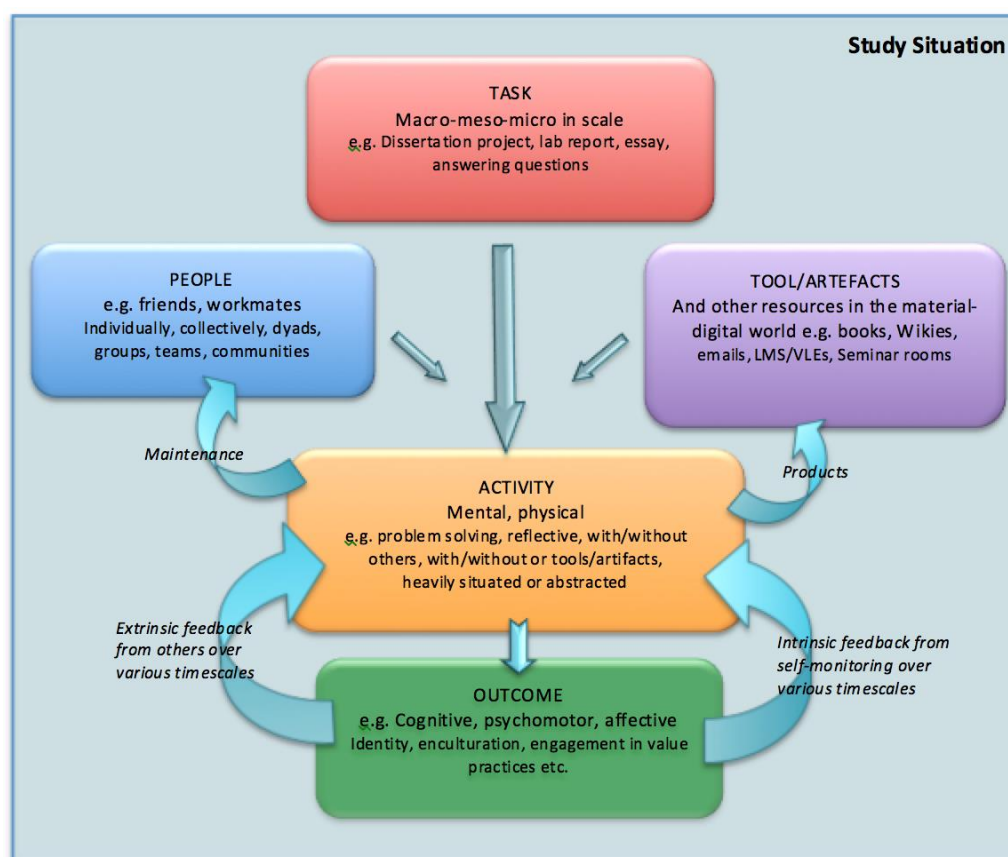
Figure 1: Conceptualising the problem space of educational design: adapted from (Goodyear & Retalis, 2010)

Students, when they are faced with a new task, are often prepared to be open to the ideas such as 'this could be something interesting', 'this could be different' or 'this could be something I want to do'. A good design must encourage their enthusiasm and creative responses. However, it is a matter for another wider research on how the task design should support students and sustain their interest in the activities that they do.

Addressing bigger issues in higher education

The issue of *good* design is partly about the bigger issues, such as quality of teaching, the way university education is conducted (design, delivery, mode and so on), how students engage and if something needs to be done to improve those aspects (Agostinho, Lockyer, & Bennett, 2018). But even if we did not have that alienating relationship, we still have a problem about how we design *good* tasks (Goodyear, 1997). The issue is about having a right mixture of structure and creativity, structure and openness. Curriculum and assessment design does not seem to be working for many students. Going back to the architectural analogy, what architects produce is multiple representations of, and multiple documents about, the building. Some of the documents would be in response to the planning requirements and that would be very different from the architecture drawing or an artist rendering of the completed building which is what one needs in order to excite the clients. Applying this to the higher education context, the design team can map the task to the certain quality assurance framework (addressing bureaucratic constraint) but the design team also can say that here is the part of a task that engages students' intellect and imagination. For instance, Dave (2017) provides an example of a task when the students of the Bachelor of Teaching degree participated in the task in mathematics education. The task was designed to meet the requirement of the NSW Teacher Education Standards (compliance with policies), but there were also other components such as working in team (graduate attributes), assessing a child on his mathematical ability (excitement) and use the tool prescribed by the Department of Education (required intelligence) and figuring out how to move forward in the testing depending on the answer given by the child (component of imagination).

There is a lot to be done in higher education and more generally in the area of learning and training to help people respond creatively to challenges. Technology can play a major role in helping teachers to design creatively. This

brings to the bigger issue of how university teachers can be supported for design work (Sue Bennett, Agostinho, & Lockyer, 2017).

Way Forward

As per Dave (2017), the university teachers perceive the creative design process is limited by various constraints. This project is designed to understand university lecturers' design practices when they design with constraints and get a first-hand account of what are the constraints that they face while designing tasks and how those constraints limit their ability to be creative. The research also aims to find out if creativity is something that the lecturers consider while designing the tasks and if they do, how they maintain the creativity while complying to the constraints and, if they don't, what can be done to support university teachers to be more creative in designing their tasks.

This project is broken into two stages. Stage 1, the pilot of the project, aims to begin with participants from one university. The data would be gathered through triangulation of the data collection methods – a survey and then interview. Firstly, an initial survey would be sent out to ascertain demographics and gather data from open-ended and closed survey questions from the lecturers. The participants would be invited to participate via email from the researchers to participate in a 30-40 minute follow-up interview. The semi-structured interviews will focus on the constraints that teachers face while designing the tasks and how they [try] to overcome it to add creativity. Stage 2 the project would be extended to a further institution, asking the same interview questions. The results of this data will be published in a further publication.

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