

Defining innovation: what counts in the University of Cape Town landscape?

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This short paper explores what educational technologists in one South African Institution consider innovation to be. Ten educational technologists in various faculties across the university were interviewed and asked to define and answer questions about innovation. Their answers were coded and the results of the overlaps in coding have been assimilated into a definition. Soft systems methodology (SSM) was used as a method to approach the complexity of innovation in educational technology in one setting. The initial definition formed the 'situation definition' in SSM terms. The method proved useful in producing a picture (based on rich pictures drawn by each person) and a root definition (based on CATWOE a mnemonic that enables the interviewer to ask each participant to identify processes and role players).

The problem

The work of the Centre for Educational Technology (CET) at the University of Cape Town (UCT) has shown that there are pockets of innovation occurring across the institution-these need to be identified, showcased, acknowledged and assessed. As a staff developer it is essential to be aware of these innovations but in the rapidly changing landscape where technology is ubiquitous it is more difficult than previously to track these developments. It is important because CET's role is to promote the effective use of educational technology and if we are not aware of innovative use we cannot share examples and help staff to find the best solution to their teaching challenges.

Why is it important to study innovation? An understanding of the nature of innovation will enable educational technologists (ET's) to identify and showcase it in order to share ideas and inspire colleagues with the goal of enhancing student learning. Our concern now is with good practice, quality interventions, and innovation where the pedagogical benefits of technology have been harnessed. The first step in this process is to find some kind of consensus as to how ET's define innovation. Ten practitioners (including educational technologists and others working in the field of computer science) from various faculties of the university were interviewed to find out: What counts as innovation in the current educational technology landscape?

In the literature innovation is defined in generic terms, for example, one definition is as follows: "...the real essence of innovation is fresh thinking that leads to value creation...". Vijay Vaitheeswaran (2007). But there appears to be no definition that applies specifically to educational technology. Rowan and Bigum (no date) discuss the common criteria for measuring innovation and from their point of view the most crucial measure for innovation is "...will it improve the educational experiences of a diverse student group..." Both these examples are useful but they are not specific enough and so in this paper we define innovation in terms of educational technology.

This research has been planned in four phases the first being to interview educational technologists. The second is to interview academics identified by the educational technologists as innovators, the third to get feedback from students on these courses and the fourth is to set up a way of monitoring and tracking and sharing innovative ideas across campus.

The work reported here is part of the first phase: the analysis of part of the transcriptions of 10 open question interviews using standard interview techniques and testing Peter Checkland's Soft Systems methodology (SSM) as a way of approaching the complex views surrounding innovation in educational technology.

The next step in the first phase is to get feedback from those interviewed about the results outlined here. SSM is designed to be a starting point in a process of debate and negotiation around the situation that is being analysed.

This research highlights the problems and contentions around innovation, and as educational technologists, (and in the authors case a staff developer) we need to resolve these issues and form purposeful activity (to use SSM terminology) to overcome these obstacles.

In 2003, when our unit launched our first staff development project at our institution, the idea of using online learning environments (OLE) was still a relatively new concept as it was in many other institutions around the world. Now in 2008 we have one centrally supported OLE (as opposed to three or more) and to date have approximately 4720 course sites. We aspire to have all academics who would benefit from using technology in their courses and their students online and we are still trying to achieve this goal. Including an OLE in a course is no longer innovative for much of the university although there are still departments who are not teaching online. Our emphasis has begun to shift and is not so much about convincing people of the benefits of using technology but rather how it is used to enhance teaching and learning.

Educational technology today

Salmon (2005) describes educational technology (ET) as having gone through two stages: the first was when 'learning technologies' were used as a new way of doing something familiar-some aspects of teaching move online but essentially no underlying assumptions about pedagogical approach are changed. For example a learning management system is introduced and this in itself is considered an innovation. The second phase is when technology is used in new ways not previously possible in the classroom and learning technology combines with traditional approaches to "meet new objectives and purposes of teaching and learning". This second phase is in progress at many universities at present including our own but it is complex and involves change at the individual practice level and possibly also at the institutional level if exciting innovations are identified as possibilities for many faculties.

Salmon (ibid) stresses the lack of institutional learning about the thousands of isolated examples of innovation because in the UK experience (as is our own) there is little or no reward, recognition and support for systematic change or experimentation.

The result is a basic use of OLE's to post notices and store lecture notes. Many lecturers do not move beyond this point without specific help and do not see the pedagogical ability of educational technology (Cox 2008, Deacon & Jaffer 2008). "Learning technologies are not transparent" and cannot in themselves achieve learning benefits- to do that you need support and pedagogical input (Salmon ibid).

The areas that Salmon (ibid) suggest should be researched now include the identification and promotion of "excellent sustainable, transferable practice and models of change related to human intervention and sustainability."

Method

Interviews were conducted with 10 key individuals in the educational technology field. Five were members of the Centre for Educational Technology at the University of Cape Town. The others included academics from Computer Science, Information systems and technology support staff from Humanities and Health Sciences. These individuals were chosen to give a range of experiences across the institution as it seemed from experience running staff development workshops across faculties that ideas of innovation would vary.

The first four stages (of seven) of Soft systems methodology are tested. Soft systems methodology has been developed over the last 40 years (Checkland 1990, 2006a & b). It was developed at Lancaster University as part of an action research programme. It emerged when Checkland and other researchers started out using Hard systems methodology and found it was inadequate in dealing with 'messy' human problems where the social realities and different perspectives of participants were complex. The first two stages involve defining the situation and this is completed in two ways. Each interviewee is asked to define innovation and draw a 'rich picture' of the innovation and its complexities at our institution. A 'rich picture' "...is a good way to show relationships; in fact it is a better medium for that purpose than linear prose" (Checkland 2006b). The third stage is to develop a root definition based on the rich pictures and Peter Checkland's "CATWOE" mnemonic: C: Customer (also Beneficiary from Bergvall-Kareborn et al. 2004); A: Actor; T: Transformation process; W: worldview; O: owner and E: environmental constraints. One of the criticisms of SSM is that it is too simple upfront (Houghton & Ledington 2002). The method often used upfront is a focus group. To counter this, individual interviews were done first to get different perspectives and a richness of views and group discussions will be part of the next stage.

Interviews also included questions around the theme of innovation in ET and each person was asked to give examples of innovation, how they would assess the effectiveness of an innovation and if they had any ideas on how to monitor or track innovation across the institution (these aspects are not covered here).

Results

In the interviews the educational technologist were asked to define innovation. There was no time to prepare a simplified definition but rather they were asked to reflect on terms and key words they felt should form a definition. The transcriptions of the answers to this question were read repeatedly by the author and key phrases and words identified. This text was uploaded into NVivo qualitative software and the phrases and words were coded across all the answers to look for repetition and patterns. Here is a list of the results: new (6), change (4), solving problems (4), context (4), useful (4) improve student understanding of content (3), using an existing tool (2), adds value (2), innovation of processes (2), clever (1), low cost (1), mutually beneficial (1), creative (1), cutting edge (1), effective (1), efficient (1), qualitative and quantitative change (1), smart (1) and sustainable (1).

If we consider the most repeated phrases and words a definition would look something like this: “Innovation can be defined as a new and useful way of solving existing educational problems, for example, improving student understanding of content. The innovation does not have to be a new tool it could be changing the way an existing tool is used. Importantly any innovation needs to be understood in terms of its context, for example, what is new in a third world university may not be new in a first world one”

All interviewees were asked to draw a diagram of how they viewed innovation in the institution. They were asked to draw them with no preparation as a “rich picture” and an example of this was given to them. I have used the various aspects highlighted by the interviewees in these pictures and combined them into a picture of innovation at our institution (Figure 1).

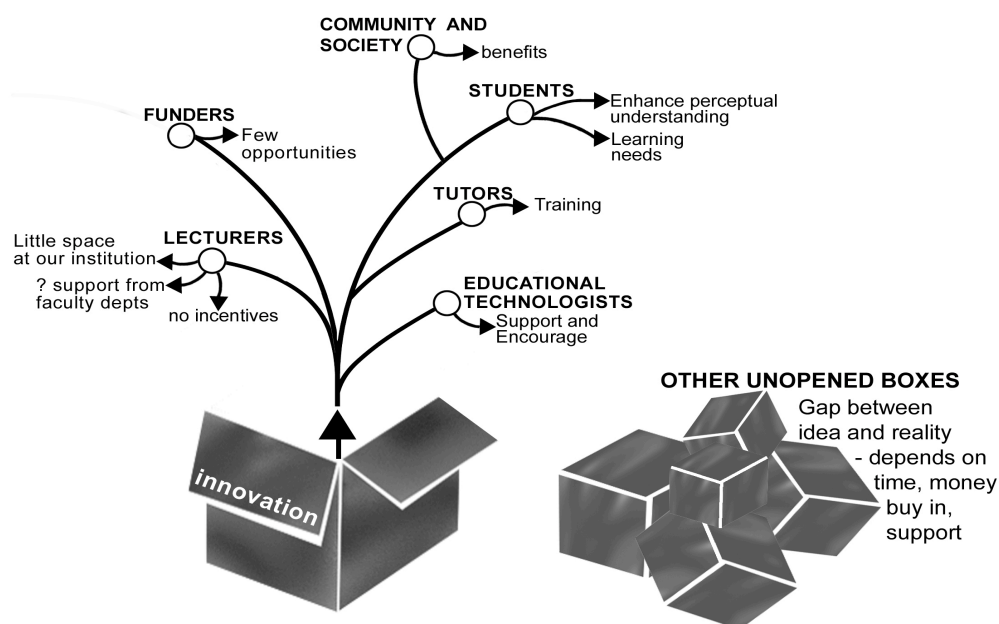


Figure 1: Innovation in the institution

Participants gave similar answers for the different aspects of CATWOE. They almost all said that the “Customer” was the student and the lecturer although 4 said the student only. The “Actors” were identified as being the lecturers, who were also referred to as change agents and people with original thought. Two talked about the developers or educational technologists working with the lecturers. Most stated that teaching and learning would be “transformed” through innovation. “Worldviews” varied as expected and will be discussed in more detail in further research, some examples are; improve throughput and most spoke about enabling deeper learning. The “owner” was also clearly a complicated issue where variation occurred some said the lecturers and /or the developers but others felt that ownership could lie with management of the institution. All agreed about the “constraints”: time, money, lack of reward, insufficient infrastructure, alack of buy in by colleagues and limited funding opportunities.

An attempt at aggregating a 'Root definition' is as follows: "Despite a lack of institutional support and encouragement lecturers find the time to innovate using educational technology in order to enhance their students learning experience as well as their teaching practice. However there is a concern here about who owns the innovation which needs to be investigated further"

Discussion

All three outcomes (definition of innovation, rich picture and root definition) are valuable and have given the author a much clearer idea of how educational technologists view innovation. The next step is to take this research to the interviewees and to other colleagues. The definition is informative but will be more powerful when the author can get feedback from others in the field. The picture provides a practical visual to open areas of concern. For the purposes of this short paper the root definitions were aggregated. It was predicted that individuals would have different worldviews and this will be explored in further research. What is particularly revealing was the varied views on who the owner of an innovation should be. This feeds into the lack of institutional support and positioning of teaching innovation in the structure of the University. This is a key finding that will be explored in more detail.

Despite a number of constraints identified in the picture and the root definition there are many examples of innovation at our institution. Institutional reward systems are not going to change in the near future and in the meantime it is our role to find a way of tracking and encouraging those starting innovations as well as those who have been innovating for some time.

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