

Threshold Concepts and Troublesome Knowledge in Curriculum Design

Introduction

This paper comprises a report of the findings of the PiP project from consultations with colleagues on best practice and innovation within curriculum design and it explores the notion of “threshold concepts and troublesome knowledge” within this domain. The focus is not on a particular discipline rather than on the wider academic, institutional and sector issues associated with curriculum design.

As curriculum design is such a broad area and colleagues consulted did not necessarily see classifying approaches to curriculum design as a threshold concept in itself, the paper focuses on a key “troublesome” issue that emerged from discussions with colleagues and analyses this within the context of the thresholds framework. The issue to be discussed is that of the tendency towards **tacit practices** and the use of **tacit knowledge** (Meyer & Land, 2003) within curriculum design and the problems this creates when trying to capture, translate or emulate good practice.

Curriculum design at the University of Strathclyde

The curriculum design and approval process at the University of Strathclyde is characterised by both distinctive faculty-led approaches that feed into institutional activities and by the design of key learning tasks, classes and courses embedded in disciplinary contexts and individual ways of thinking and working. While the relationship between class and course is formalised in the statutes of the institution, individual academics have greater freedom in the design of tasks within the curriculum itself and it could be argued that these designs are inherently different between disciplines and indeed individual course designers, although there may be a shared degree of commonality at higher levels. With this in mind characterising curriculum design and ensuring approval and delivery processes are both supportive to academic freedom and individual interpretation and in the best interests of the institution and indeed the students is no small task. Curriculum design in itself could be seen as an area of conceptual and practical difficulty - that can create pockets of troublesome knowledge.

Capturing, translating and emulating good practice within curriculum design is a challenge faced by not only academic teaching staff but also by extension professional services staff who strive to balance practical process, technology, training and support with pedagogical, disciplinary and individual approaches to curriculum design. Issues surrounding tacit practices and tacit knowledge add to this complexity making it difficult for academic and professional services staff alike to achieve a genuine understanding of what makes a good curriculum design and how best to support staff and students within a given curriculum. How academics “grasp the underlying game” (Cousin, 2008)

required to develop a worthwhile curriculum and indeed translate that for peers and indeed students through good designs could therefore be perceived as particularly troublesome.

In talking to colleagues within both academic disciplines and support departments it was clear that the overarching theme of curriculum design is indeed surrounded by “troublesome knowledge” and perhaps even threshold concepts – although there was some disquiet as to classifying approaches to curriculum development in this way. Meyer and Land (2003) suggest that threshold concepts are akin to a portal opening up a new and previously inaccessible way of thinking about something. This is indeed an interesting way of looking at curriculum design and the five characteristics that define threshold concepts as: transformative, irreversible, integrative, bounded, and troublesome – do seem to sit well with descriptions of concepts and knowledge surrounding curriculum design.

Academic colleagues interviewed, however, although they found many areas “troublesome” within curriculum design, could not necessarily agree on “threshold concepts” as such. Addressing issues associated with tacit practices and tacit knowledge however could go some way towards ensuring a greater understanding of key concepts within curriculum design and towards altering the mind sets and working practices of those engaged in design. Greater transparency around knowledge and practice could in turn encourage a shift from tacit practices and towards a deeper understanding of tacit knowledge that would open that “portal” and allow curriculum design to be considered in a new way, perhaps even eventually leading to clearer discussions about threshold concepts not only in the curriculum content but within the design process itself. Reaching an understanding about tacit practices and tacit knowledge could be seen as a threshold concept as the outcome could be transformative, irreversible (because tacit knowledge often supersedes and influences the acquiring of any new knowledge) and extremely troublesome as tacit practices involve and create so many variables that need to be explored and balanced.

Tacit practices and tacit knowledge

Pedagogical foundations behind learning designs within curriculum are traditionally tacit. This notion is explored by Meyer and Land (2003) who suggest that what appears counter-intuitive in new knowledge is in fact over-ridden by existing tacit understanding. Tacit knowledge is knowledge that remains mainly personal and implicit (Polanyi, 1958) and this knowledge can be troublesome because it can close a student’s (in this case curriculum designer) mind to new knowledge or approaches because they are so entrenched in existing ways of doing things. In curriculum design understanding not only discipline specific knowledge but also the wider environment in which curriculum sits and the influence of individual opinion and perception on subject areas and concepts is critical. If designers are consumed by tacit practices and tacit knowledge it can become almost impossible to embrace new knowledge or to monitor changes in the external environment. This could explain why some academics involved in curriculum design are more closed to innovation or the use of new technologies in curriculum.

Each discipline has its own way of approaching the development of curricula. These approaches are often based upon a number of “characteristic epistemes....manners of justifying, explaining, solving

problems, conducting inquiries” (Perkins, 2006) but perhaps common to all is the difficulty faced when trying to formalise, write down or easily transfer the methods employed or knowledge required to develop a worthwhile curriculum. For this reason the translation of tacit practices and knowledge into practical outputs, whether for student, peer understanding or institutional bureaucratic process could indeed be perceived as troublesome.

Within academic institutions approaches to curriculum approval and delivery can also be contrary to the notion that design process and knowledge is often tacit. Institutional process often requires designers to be descriptive and absolute e.g. provide learning outcomes and assessment protocols and this can result in institutional stored curriculum data being a far cry from the original curriculum design and even further from the curriculum actually delivered. Increasingly there is a trend towards capturing curriculum and shaping it within the strategic aims of an institution, sector trends or the financial constraints of a business case. This may have a significant impact upon the tacit processes a curriculum designer traditionally engages in and the tacit knowledge called upon when developing a curriculum. It may now become impossible to have a curriculum design approved for delivery without first going through a more formal and prescriptive approach that has been shaped and directed by the institution, changing the essence of the personal and implicit tacit approach to curriculum design.

Curriculum designers are often discipline experts with a bank of tangible, formal and prescriptive knowledge already in place ready to be produced as required. If a curriculum designer was asked to write down some well known theories or speak at a conference about some formulas or concepts then this would probably be an easy task for most of them. However when it comes to describing the methods they employ when transferring that knowledge into curriculum to bring students or indeed peers to their level of understanding it is not such an easy task. Transferring any kind of knowledge using tacit practices is undoubtedly troublesome. What must also be considered is the notion that it is even more troublesome to transfer tacit knowledge using tacit practices.

It could therefore be said that instilling the “ability” to design a worthwhile curriculum within academics is reliant upon the interpretation of existing tacit knowledge and the emulation of associated tacit practices. This notion is also troublesome, as although it is possible to develop strong subject knowledge and be considered an expert in a given field, it does not necessarily correlate that the development of the attributes required to create good curriculum designs or become a good curriculum designer will happen automatically as a result. Transfer of knowledge often comes hard (Perkins, 2008) and understanding what knowledge needs to be transferred and in what way to ensure students have access to an appropriate curriculum experience is indeed extremely troublesome and requires a deeper level of understanding beyond that of simply grasping the main concepts of a given discipline or subject area.

As knowledge about design is often tacit it makes it troublesome to document or model good practice and difficult for institutions to monitor or measure quality in curriculum or the anticipated learning experience for students. Further, emphasis on “linear, incremental progression” (Meyer & Land) within curriculum learning outcomes is also troublesome as it demands the designer be

prescriptive in their approach to knowledge transfer and methods of curriculum delivery, something that is at odds with the tacit practices and knowledge associated with the previous designing curriculum phase.

Ways of Teaching and Practising (WTP) are never stable or uncontested (McCune & Hounsell, 2005), and this lack of an absolute can prove challenging to those who wish to understand and engage in curriculum design activities and indeed support and deliver those designs. Without hard and fast rules it is difficult to find validation in method or confidence in approach. However yearnings for clear and safe explanations (Perry, 1970) of how one should engage in designing courses or classes in a given curriculum may in fact be contrary to the very essence of being a curriculum designer. It is indeed troublesome to consider the notion that to become a proficient curriculum designer you must develop skills or knowledge that is intangible and perhaps even without formal definition or description. Some of the skills and knowledge required exists outside the discipline or subject specific expert's traditional domain. Often good designers find it difficult to put their finger upon what they actually do when developing curricula. Thought process and instinct is hard to capture and even more difficult to transcribe or transfer. It could be questioned if it is even possible to capture and teach the art of good curriculum design behaviour. Further still, can it even be presumed that students' aims are, or can be made to be, the same as the aims of the academics designing their learning (Haggis, 2003)? Moving from thinking about what to do from a teaching perspective towards what learning outcomes will actually benefit their students is a transformative shift in practice for academics (Cousin, 2008) and for some it creates a struggle with academic identity and status as they have to allow students to take centre stage at times.

Good curriculum designs seem to rely upon the designers themselves grasping a number of threshold concepts surrounding not only discipline or subject specific knowledge, but also knowledge relating to student and peer behaviour and how to interpret practical institutional demands and sector trends into curriculum activities. Threshold concepts are problematic for any learner, teacher or student, and there is a requirement for all staff involved in curriculum design to accept a transformation of their own understanding (Land et al, 2005) while trying to provoke such a reaction in the learners at which the curriculum is targeted.

Therefore one of the most complex issues affecting the understanding of curriculum and the working practices surrounding its design is the method of deciphering the tacit practices and tacit knowledge of individual academics engaged in designing courses and classes. Without appropriate translation tacit practices will remain alien to both other staff and students and continue to be a source of troublesome knowledge within curriculum design (Perkins, 1999).

PiP project reflection

Part of the PiP Project's involvement with curriculum design within the University of Strathclyde has been in the provision of concept and process mapping representations for projects and the wider institution. This has proved a challenging approach to baselining current University activities and some colleagues have found it difficult to understand and translate their approaches and concepts

through visual representations. Using Kinchin and Hay (2000) it seems that a conceptual visual representation works best with a Concept Map Analysis table¹ and the project will be adopting this approach and other process mapping good practice techniques in future endeavours.

PiP will also attempt to capture and formalise curriculum design process and thinking by contributing to the development of an expert system that will attempt to streamline workflow while storing examples of good practice and acting as a catalyst to encourage staff engaged in curriculum design to employ a more formal approach to designing that clearly shows institutional alignment, methodology and encourages review and revision. This in time will hopefully encourage a movement towards a more formal approach to designing and documenting curriculum, although it must be noted that research must also be made into the impact of a perceived eroding of tacit practices and tacit knowledge as a result of the introduction of a system- based approach, as tacit paper-based approaches have undoubtedly produced good and worthwhile designs in the past.

The project believes that greater transparency, formality and a movement away from dependency on tacit practices and knowledge could provide better opportunities for a shared understanding of the issues at stake and, in turn, help to tackle and find solutions to the “troublesome knowledge” associated with curriculum design. It is therefore important to consider some “high impact” activities (Kuh, forthcoming) such as establishing learning communities and engaging in collaborative research and dedicated projects in this area. It is hoped that this will engage staff (as it does students) at a higher level and produce new experiences and the ontological shift required for staff to understand and properly engaged in curriculum design and take ownership for the processes that support it.

The following tasks could prove useful in creating transparency and providing opportunities for high impact activities:

- An identification of troublesome issues in current curriculum design practices and process that could benefit from enhanced support or different approaches. Using concept maps here has already proved positive in communications for the PiP project.
- An investigation into how the current and future curriculum design processes might be best represented to all stakeholders within the institution.
- Gathering together best practice and encouraging sharing of designs. Facilitating discussion around good designs and best practice within curriculum design and sparking more formal mechanisms for capturing knowledge and less reliance on tacit practices and tacit knowledge.
- A provision of better guidelines and policies that support both the procedural and pedagogical aspects of curriculum design that will help tackle issues around tacit practices and tacit knowledge.

¹

- The introduction of a more structured review process within curriculum design to ensure delivery is better aligned with design and all involved are grasping the core objectives (or threshold concepts?) of a given curriculum design and, indeed, of the wider approval, review and practical processes that surround it.

For the purpose of this project, staff and students could be considered as one in the same as the nature of supporting academics within the curriculum design process suggests that the designers themselves must be open to learn and grasp the concepts behind the process itself and to engage with others in tackling and clarifying troublesome knowledge or indeed threshold concepts. The ability to transfer a coherent message about particular theories and concepts to students within a curriculum design could be seen as inherently troublesome as it assumes that the teacher or curriculum designer has already completely grasped the task at hand and is without constraint of troublesome knowledge or threshold concepts themselves. Individual designs can be context/discipline specific and therefore get lost when translated at an institutional level. Ramsden (1984) writes of the importance of environment and context to a student's perception of teaching, assessment and course content and of how these perceptions can shape and influence how they learn. If designers continue to rely upon tacit practices and tacit knowledge it will be extremely difficult for students and associated staff to understand their own role within the curriculum process.

Further tacit practices and tacit knowledge often lead to confused messages for those involved with designing and indeed interpreting curriculum as to what is actually driving the curriculum. For example tensions between central institutional policy and strategy and pedagogical excellence. It could therefore be said that clarity about key criteria across an institution and course of study and investing considerable effort in creating a curriculum environment that transcends that of the individual working practices of curriculum designers is paramount to breaking down the Troublesomeness associated with tacit practices and tacit knowledge within curriculum design.

References

- Haggis ,T. (2003) Constructing images of ourselves? A critical investigation into 'approaches to learning' research in higher education, *British Educational Research Journal*, 34 (1) pp. 89-104
- Meyer, J.H.F and land, R (2003) 'Threshold Concepts and Troublesome Knowledge 1 – Linkages to Ways of Thinking and Practising' in *Improving Student Learning- Ten Years On*. C. Rust (Ed), OCSLD: Oxford
- Kinchin, I.M., Hay, D.B and Adams, A., (2000) How a qualitative approach to concept map analysis can be used to aid learning by illustrating patterns of conceptual development, *Educational Research*, 47, (1), 43-57

Kuh, G (forthcoming) High Impact Activities: What they are and why they matter. Washington: Association of American College and Universities

Perkins, D. (2008) Beyond Understanding. In Land, R., Meyer, J.H.F. and Smith, J. (Eds) *Threshold Concepts within the Disciplines*: Sense Publishers: Rotterdam

Ramsden, P (1984), The context of learning, in Marton, F., Hounsell, D and Entwistle, N (Eds), *The experience of learning*, Edinburgh: Scottish Academic Press

Acknowledgements

Thanks to academic colleagues in academic roles and professional services at the University of Strathclyde

This paper is based on research, discussion and material gathered for the Principles in Patterns (PiP) project at the University of Strathclyde and from observations, interviews and materials of project team members and associated institution employees.

www.principlesinpatters.ac.uk