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PiP Project

Troublesome Knowledge & Constructivism (April 2010)

## **Introduction**

This paper will explore potential sources of conceptual difficulty and troublesome knowledge within curriculum design and approval with particular reference to professional services and support staff. It will explore the approaches and activities of the PiP project in teasing out these issues and the potential improvements that a technical solution could bring to both process and pedagogy in this area. It will suggest a new approach to curriculum design and approval that facilitates better communication between staff across the institution and promotes a constructivist framework for staff development in this area. Encouraging staff to take charge of their own role within the curriculum and to feed into institutional thinking will hopefully result in a greater understanding of curriculum related knowledge. Embedding this new approach within institutional strategy will also help eradicate perceptions that curriculum design and approval are low-level activities and encourage new ways of thinking and working practices among staff.

The paper will discuss the application of a constructivist framework to the planning of staff development activities around curriculum design and approval and explore the use of Middendorf & Pace's (2004) model of Decoding the Disciplines as a staff development tool. It will identify a possible set of modifications to current approaches that could enhance the learning and experiences of professional services and support staff that will in turn impact upon academic thinking and working practices. It will also consider accessibility issues within this new approach, set out a plan for assessment and review and examine the benefit of introducing a technical web-based curriculum approval system, while considering the impact this may have on tacit practices.

## **Constructivist Framework**

Constructivism has its roots in cognitive psychology. Today it takes on several forms: individual, social, cognitive, postmodern (Steffe & Gale, 1995). The emphasis is on activities that help learners construct knowledge, building on what they already know and engaging in the process of learning. Constructivists argue that humans learn from experience and this can be translated into active learning for students and indeed staff, instead of relying on simple transmission (Biggs & Tang, 2007). For the purpose of this assignment a constructivist approach seems an appropriate framework as the emphasis is on what activities need to be engaged in to help learners construct appropriate knowledge and is therefore extremely relevant when considering how best to "decode" curriculum design and approval for both academic and professional services and support staff.

The University of Strathclyde is currently reviewing its approach to curriculum approval and design and this has necessitated the provision of activities that will facilitate better communication with stakeholders across the institution. Decisions made by course and class designers have a knock on effect on the decision making and workflow of the entire institution therefore a new approach is required that captures not only the role of academic staff in curriculum design but also the role of university management, professional services and other related staff in facilitating the translation, approval and efficient delivery of those designs.

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A learner-centred approach to teaching staff about what makes a good curriculum design emphasises building on prior knowledge, respecting diverse learning styles, rich, timely feedback and creating a supportive learning community (Lopez & Marsh, 2007). This approach would help bring together staff within the institution to discuss and evolve current approaches and help tackle some of the troublesome knowledge associated with these activities e.g. tacit practices or mixed messages about curriculum direction.

A constructivist approach also sits well with the introduction of technology solutions to aid both the design and approval workflow and the learning environment itself. One of the goals of the constructivist approach is to develop an independent learner, one who is comfortable being part of a learning community and relies upon sharing knowledge with both teacher and peer. Technology can help provide that independence and facilitate that communication. The PiP project will look at bringing institutional approval, curriculum design and best practice together in a technical solution to try to provide a more supportive, streamlined and strategically aligned approach to curriculum development.

### **Decoding the Disciplines**

Lopez & Marsh analyse the use of a constructivist approach along with Middendorf & Pace's model of *Decoding the Disciplines* (2004) in their article *Learner-Centred Philosophy as a Catalyst for re-designing Professional Development Opportunities* (2007). They advocate that staff development activities should be built upon the notion that decoding the disciplines can be extended to decoding the ways in which all staff learn and this provides a backdrop for consultations, workshops and activities with a less traditional audience, that of staff instead of students. They suggest that just as instructors are experts they are also learners, just as academics and professional services and support staff are also learners in the curriculum design and approval process. With this in mind the combination of a constructivist approach that also "decodes the disciplines" will be of benefit to the PiP project in bringing professional services and support staff into a process in which they previously struggled to understand their role. Involving new stakeholders will also spark new opinion on how best to tackle the troublesome knowledge associated with discipline specific thinking and tacit practices that currently shape the curriculum. Lopez & Marsh's examples of Digital Teaching Workshops for staff that are new to teaching with technology and a Faculty Fellow program set up for faculty staff to participate in seminars around technology enhanced learning are examples of activities that the PiP project could strive to emulate in their communications with staff. The technology aspects of this example are also very relevant to the PiP project and the technical solution being piloted.

Communication plans, workshops, and activities that encourage engagement between professional services & support staff alongside academics, will facilitate sharing of knowledge and experience and the establishment of an inclusive learning community. This will also be of great benefit to achieving the general objective of creating a new inclusive and self-reflective approach to curriculum design and approval at the University of Strathclyde.

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Using Middendorf & Pace's approach to decoding the disciplines will also be useful when educating staff about general good practice within curriculum design. Each of their seven steps could help transform the way staff approach design by making the process and difficulties faced more transparent and providing a collective group approach to tackling issues that arise. Some of these steps are being explored by the PiP project and are discussed later in this paper. The first step, exploring bottlenecks in learning, is particularly relevant as it provides an opportunity to bring staff together to document existing issues and grievances, not only an important practical activity but an excellent bonding experience.

### **Staff Development**

It is anticipated that encouraging staff to engage in High Impact Activities (Kuh, 2008) such as becoming part of the anticipated "curriculum design and approval" learning community and providing common intellectual experiences through dedicated workshops and communication activities, will help the PiP Project and the wider institution tackle the pockets of troublesome knowledge surrounding curriculum design and approval. Creating an informal learning environment for workshop participants with session goals, objectives, agenda, materials for learning activities and resources provided in advance will encourage staff to feel part of the process and this will ensure participants needs and interest as well as the resources available to them will shape outcomes (Lopez & Marsh, 2007). Encouraging an exchange of ideas and constructive feedback from peers who have common interests will stimulate not only knowledge that will benefit the development of curriculum but also the professional development of the staff involved in the process.

Using a constructivist approach to designing workshops for staff, where they are asked to categorize the key areas and non-negotiable aspects of a curriculum will help to open up a dialogue between staff from different backgrounds, disciplines and points of view. The overwhelming strength of bringing together staff across the institution in a workshop is the opportunity for co-inquiry it presents between subject experts and all other stakeholders in the curriculum design process, creating an approach that is neither student-centred nor teacher-centred but something in-between (Cousin, 2008).

### **Professional Services & Support Staff**

As identified by the engagement activities of the PiP project, it is apparent that one of the biggest issues faced for professional services and support staff is how to decode the tacit practices and knowledge of academic curriculum designers. Tacit beliefs and practices in education can cause problems that extend beyond the individual designing a curriculum. They surface in the language that is used, in the choice of what is to be taught, in the design of teaching spaces, in the allocation of time within the course, in decision about assessment (Toohey, 2002) Therefore understanding this tacit knowledge and behaviour is key to professional services and support staff identifying how they can best provide input and support to the curriculum design process.

## Learning Activities & General Approach

### Process Mapping

In order to ascertain current knowledge among this group of staff the PiP Project carried out some base-lining activities using a process mapping approach, where staff were given the opportunity to feed into and comment on a process flow that documented the main stages of curriculum approval and design, the main actors in the process, the departments and areas of practice impacted upon and the wider institutional considerations to be addressed. This was a useful process in ascertaining current process and establishing aspirations going forward.

### Workshops

A recent Workshop with Professional Services and Support Staff on Course and Class Approval, set up by the University's Educational Strategy Committee, Governance Management and Policy Team (GMAP) and the PiP project was the first step towards building a learning community that could prove crucial to ensuring the success of the institution's review of curriculum design and approval. The purpose of the workshop was to inform the group about the intended review of course and class approval; to canvass opinion about how best to ensure a coherent, joined up approach to the course and class approval review process; and to inform the group about the Principles in Pattern project and the proposed technical solution to course and class approval.

The attendees were split into two deliberate "course" and "class" groups and asked to discuss the essential features of a course and a class and the necessary business processes related to these. Participants were then asked to identify streamlining opportunities and ways in which current processes could be improved (based upon Middendorf & Pace's "Bottleneck" stage). The group were also asked to suggest possible communication activities going forward and identify opportunities to share knowledge and thinking about curriculum design and approval.

### Establishing a Learning Community & Knowledge Exchange

It was decided that a shared SharePoint<sup>1</sup> space would be set up to allow the sharing of documents and resources and the chair of the workshop was asked to compile a report on the activities of the workshop for the University's Educational Strategy Committee to ensure institutional buy-in going forward. This initial communication workshop could be seen as a "Constructivist" success for the project as it encouraged participants to take responsibility for their own learning, established the roots of a shared learning environment and recognised the need to involve management stakeholders through the Educational Strategy Committee & GMAP in getting this new forum for discussing course and class approval embedded in the institution.

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<sup>1</sup> <http://sharepoint2007.microsoft.com/Pages/Default.aspx>

## **Embedding Activities**

Further workshops are now planned with academics and the University's management team to ensure all areas are represented and a genuinely new inclusive approach to curriculum design and approval begins to be embedded within the institution. The next workshop planned with Director's of Professional Services will be pitched at relevant senior officers and professional services directors to demonstrate the considerable potential of the PiP project and the relevance of its outputs to the Corporate Strategy, Learning and Teaching Strategy, IT Strategy and issues around Enhancement of the Student Experience. An evaluation exercise will also be carried out at this event where participants will be asked to grade (level of importance) their main issues and motivations surrounding curriculum design and approval. These gradings will be carried out using the BIILS<sup>2</sup> evaluation methodology, which explores the ways in which the financial and non-financial benefits of investment in ICT are evaluated, established at the University of Strathclyde. Data gathered here will hopefully provide opportunities to assess and review achievements of the project and the institution in resolving the main issues expressed and will also provide an opportunity for self – reflection for the staff involved in the process.

Finding a common ground between pedagogy and practical process will not only mean a success for the project but a shift in working practices, that will hopefully in turn bring a shift in perceptions about curriculum design itself. In order to create a worthwhile quality curriculum, stakeholder opinion must be balanced with practical solutions and the institution must find a way to ensure the successful methods of the past are preserved but communicated better and shaped by all involved in the curricula instead of just the tacit practice of a few.

## **High Impact & Decoding Activities**

The following tasks and activities could prove useful in creating transparency and providing opportunities for High Impact Activities within a constructivist framework for staff across the institution. These tasks have been considered in terms of Pace & Middendorf's model for Decoding the Disciplines (2004);

- An identification of troublesome issues in current curriculum design practices and process that could benefit from enhanced support or different approaches. i.e. Asking the question; What is a Bottleneck to learning within current curriculum design and approval approaches?
- An investigation into how current and future curriculum design processes might be best represented to all stakeholders within the institution. i.e. Identifying how best to practice these skills and get Feedback.
- 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. This would also include a provision of better guidelines and policies that

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<sup>2</sup> [http://www.strath.ac.uk/learningservices/innovation/innov\\_projects/biils/](http://www.strath.ac.uk/learningservices/innovation/innov_projects/biils/)

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support both the procedural and pedagogical aspects of curriculum design i.e. Identifying how best to share knowledge.

- Introducing a more structured review process within curriculum design, through the provision of an on-line technical solution, 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. i.e. How can you be sure you are being successful? – review delivery and measure success.

The application of Pace & Middendorf's decoding the disciplines model has produced some useful outputs to date. Interviews and workshops to identify bottlenecks and motivations among staff have provided some interesting observations and have informed thinking on further communications with staff scheduled to take place throughout the course of the PiP project and indeed the institutions overall review of course and class design and approval.

Opportunities to assess the approaches taken and receive feedback will also continue to be explored throughout these tasks and accessibility and technology concerns be investigated. Please see Appendix(1) for project bottlenecks as explored through Pace & Middendorf's Decoding the Discipline's Model.

## Assessment

### **How can you be sure you are being successful? – review delivery and measure success? (Pace & Middendorf, 2004)**

Within workshops and communication activities staff will be invited to grade the issues they find most troublesome and then re-visit those gradings at the end of the project to establish if there has been an improvement in their knowledge and understanding about curriculum design and approval. The greatest assessment measure will of course be a perceived improvement in the quality of courses and classes being designed and approved and the achievement of greater efficiencies in workflow surrounding approval and other associated institutional activities. E.g. More efficient and timely information in the approval process could lead to measurable improvements in registry workflow or library resourcing. A new approach to communication with staff in this area is also an ideal opportunity to cultivate opportunities for self-reflection and peer review, it is anticipated that assessment opportunities will arise as the project evolves.

Building in a review period for a curriculum design within the new system will also encourage a greater degree of reflection and assessment and encourage all involved to reconsider objectives and anticipated achievements over time making amendments or modifications if required. It is envisaged that this will provide an excellent opportunity for academic staff to assess their own performance and for the institution to ensure course and classes are aligned with wider objectives. E.g. ELIR

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Applying principles of good assessment to workshops and communications with staff will also improve the general staff development experience of those involved in the process e.g. Nicol & Macfarlane-Dick's assessment principles (Nicol & Macfarlane, 2006) could be integrated into learning activities to;

- 1) Help clarify what good performance is (goals, criteria, standards)
- 2) Encourage interaction and Dialogue around teaching (peer, teacher, student)
- 3) Support the development of learning groups and communities
- 4) Provide opportunities to act on feedback

## Technology & Accessibility

### **How can you share the knowledge? (Pace & Middendorf, 2004)**

The PiP project is currently working on a prototype of an interactive web-based approval system to support decision-making and workflow management with dynamic guidance for users. The system will enable regular updating, central storage and data analysis of approval information. The plan is to support a range of enhancement processes (e.g. collecting examples of good practice, mapping provision against strategy, linking delivery and review) and to provide efficiency benefits to other areas of the university (e.g. Library, Registry, Room Bookings). Piloting this system among all staff, will provide a new dimension to understanding curriculum design and approval. This new dimension attempts to capture the tacit practices and knowledge of academics and extract information that can then be displayed in a more relevant and easily understood format for different audiences. It is hoped that this will help foster a learning community that will in turn support staff development and encourage quality and best practice in the area of curriculum design.

A technical solution also provides opportunities for a more accessible curriculum design and approval process. Building in Competent Standards<sup>3</sup> and advice and guidance on how to design more accessible courses and classes e.g. Teachability guidance materials<sup>4</sup>, could help minimise the requirement for reasonable adjustments at the delivery stage. Improving workflow around the identification of resources such as reading lists will hopefully give the library more timely information allowing materials to be prepared in a variety of formats as necessary.

From a practical perspective consideration must also be given to the workshops planned to engage staff in the process, ensuring staff have appropriate access to materials in different formats or have

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<sup>3</sup> Disability Discrimination Act Part IV Code of Practice, 2006

<sup>4</sup> <http://www.teachability.strath.ac.uk/>

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other options for engagement beyond face to face meetings if this provides practical or other difficulties. Full consideration must also be given to accessibility issues that may arise from the new on-line system being developed. E.g. look and feel considered in line with Disability regulations.

It is anticipated that support will be sought from the Disability Service within the university both for practical advice on staff engagements and also to ask for input into the new approach being developed, to ensure the needs of disabled students are better recognised in the approval process going forward. E.g. At present the paper based curriculum approval forms do not include any references to competent standards, equality or accessibility options, an issue that could easily be addressed with the new on-line approval system. A full impact and risk assessment would reveal challenges and possible solutions in this area.

## **Reflections for PiP Project**

Engagements with staff during project activities have aided in the developed of a better understanding of the complexities of curriculum design. The project team now realise that it is perfectly acceptable to find curriculum design troublesome and to be unsure of how to cope with an area that encapsulates such a diverse knowledge base and so many different variables and stakeholders. This is perhaps part of the project's journey towards conceptual clarity. The team looks forward to implementing the next stage of the project communication plan and hopes further engagement with pedagogical experts across faculties and departments will help capture their working practices and tacit knowledge and aid in translating it for a wider audience. Translating and understanding this knowledge will be imperative for the team and for other professional services staff who strive to support the curriculum design and approval process. It is also hoped that the new technical solution being developed by the Pip Project, will provide a proof of concept for improving curriculum processes and workflow, enriching the experience of those engaged in design and approval, while embedding institutional directives. No small task!



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## **Appendix 1 - Decoding Curriculum Design - discoveries to date**

Bottlenecks associated with curriculum design, as researched for this paper and the PiP project, are detailed below to demonstrate the potential for troublesome knowledge in this area.

### **Bottlenecks**

***What is a Bottleneck to learning within current curriculum design and approval approaches? (Pace & Middendorf, 2004)***

#### **Troublesome Language & Ritual Knowledge**

Language used within a discipline can be a source of conceptual troublesomeness (Meyer & Land) and this is indeed a major issue when trying to translate messages across a faculty or indeed an entire institution. When the PiP project attempted to baseline current curriculum design and approval activity it became apparent that introducing one set of curriculum language may alienate staff who are entrenched in discipline ways of thinking. Different views for different stakeholders within the technical system are being considered to address this but it must also be noted that there is also great potential here for the institution to regulate terminology and vocabulary based on sector standards and measures of quality e.g. ELIR.

As designs can be context and discipline specific they can also 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. It could therefore be said that clarity about key criteria across an institution and programme of study and investing considerable effort in creating an environment that transcends individual classes or courses is imperative for staff understanding and development in curriculum design. Recent work at the University of Strathclyde on investigating attributes of a 21<sup>st</sup> Century graduate further explores this idea by suggesting that institutions should seek to create attributes within their students that are built from a complete university experience and go beyond that which is discipline specific. To achieve this experience staff development activities must also attempt to transcend discipline specific knowledge and encourage Ways of thinking and Practising (Meyer & Land, 2003) that look beyond traditional boundaries.

#### **Alien & Tacit Knowledge**

Pedagogical foundations behind learning designs within curriculum are usually tacit. This notion is explored by Meyer & Land (2003) where it is suggested that what appears counter-intuitive in new knowledge is in fact over-ridden by existing tacit understanding. In curriculum design this could perhaps be likened to understanding not only discipline specific knowledge when creating

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curriculum but also the wider environment in which it sits. Curriculum Designs can simply be inherited or driven by learned behaviour. This could be seen within the context of Perkins (2008) where possessing knowledge about curriculum design does not necessarily mean this will produce true understanding. Further there are often confused messages for those involved with designing curriculum as to what is actually driving the curriculum. For example tensions between central institutional policy and strategy and pedagogical excellence.

### **Ways of Thinking and Practising (WTP)**

Curriculum design can be seen as a low level activity by some, simply involving the selection of teaching and assessment methods and filling in forms for approval, without having a real effect on the teaching and learning activities and approaches actually employed. Expertise in pedagogy and technology can be uncoordinated resulting in materials and tasks not being delivered appropriately and innovation being stifled if it is seen as out with the mainstream discipline, department or faculty community.

The design process itself is complicated and contains many variables – being economical with these variables can be difficult and inherently challenging. Ramsden (1984) suggests that overloading syllabuses with factual core concepts and theories may impede a student's ability to understand and analyse as they are overburdened with assessments that require them to reproduce well rehearsed answers and they are not stimulated to take a deeper approach to learning. A good curriculum design therefore could be one that considers key variables that are transformative and encourage students to go beyond simply core concepts and towards Threshold Concepts.

There is a difference between conceptual bottlenecks and other bottlenecks within the design process. Understanding that difference could help staff better understand their role within the curriculum. Some bottlenecks are practical and related to process and these seem to impact greatest upon professional services staff, some are conceptual and these are perhaps more troublesome for academic staff. Further bottlenecks were identified surrounding the fact that policies, document flow and approval can be unsupportive of the design process and can be seen as separate and unrelated activities (Pedagogy V Process). A lack of easily accessible materials or good design exemplars can also create feelings of isolation or professional insecurity among some staff, negatively impacting upon their own ways of thinking and practicing and challenging their academic identity.

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## Acknowledgements

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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.

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