

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

Teaching & Learning Development Grant Application 2011 ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

Principal Applicant (PA): Dr. George Bradford, Learning and Teaching Unit

Project Team Members: Dr. Carol Grech, Acting Head of School (Academic), School of Nursing & Midwifery; Dr. Colleen Smith, Associate Head of School: Academic, School of Nursing and Midwifery; Dr. David Birbeck, Learning and Teaching Unit

Reference Group: Professor Esther May, Dean: Health and Clinical Education; <Empty>, Acting Head of School (Academic), School of Nursing & Midwifery; Professor Margaret Hicks, Director Teaching and Learning; Associate Dean (Nursing and Midwifery) Karen Flowers RN, Ph.D. Australian Catholic University; Ms LohLan Lee, Project Director, PCMS.

OVERVIEW

The reality of curriculum design is that educational complexity affords what can be called a *hidden curriculum*. However, in Australian higher education the focus is increasingly on the rigor and coherency of curriculum design and alignment particularly as accrediting bodies demand education providers to produce evidence of how the intended curriculum is enacted in the classroom. Acknowledging the potential for a gap between ideology and classroom reality provides the context for a project at the University of South Australia (UniSA) to support the Bachelor of Nursing program with design processes, while simultaneously providing a mechanism to surface the *hidden curriculum* and avoid *curriculum creep*.

Informed by the field of curricula design, a mapping alignment tool is devised and populated with institutional data. Program directors and course coordinators contribute to course-level design discussions covering implicit themes, health priorities and domains of nursing practice, that flow through the program, while simultaneously identifying pedagogical or technology enhancements made to the curriculum, such as Inquiry-Based Learning and Web2.0 technologies – wikis, blogs, YouTube, virtual classroom, lecture capture recordings, course web sites, and more. Adding this information into the tool permits tracking, analysis, and evaluation across the curriculum to support design intent with delivered reality.

In short, this project will 1) identify data that characterize the visible and the hidden curriculum for the Bachelor of Nursing program; 2) develop prototype tools and processes necessary to capture the data from the Bachelor of Nursing program; 3) capture similar data from a participating project partner to validate data characteristics; 4) analyze the comparative data characteristics for use with other disciplines; 5) identify necessary steps for generalizing process and tools for use in local and international applications; and 6) disseminate findings to audiences within UniSA, at the partnering university, and to national audiences.

BACKGROUND

In 2011, the School of Nursing and Midwifery at UniSA undertook re-writing the curriculum for the Bachelor of Nursing program, and two academic developers (same individuals as participating in this grant proposal) supporting the effort participated in planning meetings with program leadership. From the planning meetings, one identified challenge is the difficulty in tracking program elements (e.g., integrated themes, health care priorities, and domains of practice) that are treated throughout the course of study and which are not specifically identified within the articulation of course-level objectives or assessments. Attaching the needed details into a framework that includes details tracked by the School and the University

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

was discussed and a prototype tool to capture the data was developed over a couple of weeks. The prototype underwent a series of development steps as the concept was refined and a goal to have the curriculum mapping tool (i.e., the prototype) available at the time the re-writing effort was set. As the goal was met by the deadline for this UniSA grant application, the prototype is fully functional. In addition, roughly a third of the Nursing program was entered into the prototype and meetings with academic theme leaders and course writers were initiated to secure details regarding Health Care Priorities, Themes, and Domains of Practice.

One initial technical challenge arose and was initially resolved: course design details provided by UniSA's Program and Course Management System (PCMS) are in an incompatible format that with the first version of the prototype. Some structural changes were made once a suitable conversion utility was identified and tested. (NOTE: The problem with data compatibility arises from the UniSA format that can be described as customized tables in PDF, and which are unreadable as text data. As a result, the table data must be extracted for read-access in a programmable environment that permits further data manipulations.) Additional programming is not expected (nor planned) during this grant project. However, to continue with format conversions of the remaining course design files from PCMS, a software conversion program will need to be purchased and used. (The cost is minor, and the details are included in the project budget proposal.) Format conversion is necessary as the prototype converts course design data into numerical values for analysis and reporting. Therefore, the PCMS data must be brought into the prototype. The Principal applicant has been in discussion with the PCMS team and a future plan is a possible upgrade to PCMS that will store data in numerical form once optimal formats and structures have been identified. The latter is not an outcome of the project. Instead, such work will be part of a future project.

During the time the prototype was designed and developed, multiple meetings were arranged and demonstrations of the technology were provided. Attending these various meetings were the following:

- Course coordinators and course writers for the Bachelor of Nursing program
- Dean of Health Sciences, Esther May
- The Online Academic Developer Team
- Leadership staff for the Learning and Teaching Unit, Margaret Hicks and Gavin Sanderson
- learnonline leadership and project team members Paul Sherlock, LohLan Lee, Karl Sellman, Richard Lamb, Wayne Pedder, and other staff attached to PCMS development
- Presentations were also given to Associate Professor Neil Murray of the LTU, Dean of Engineering, Brenton Dansi, and to academic staff in CSI.

It is clear that initial dissemination and feedback have taken place.

AIMS

The project's principal aims include identifying data characteristics and validating an analysis approach to inform future design characteristics of the program and course management system, and disseminating both the approach and data characteristics to the broad community in higher education through conference presentation and journal article publishing. This grant will be used to include participation of another university to improve validity to the data characteristics, the collection process, and analytic methods to derive findings. These aims can be further described as six project objectives:

- (1) Develop a process for conducting program curriculum mapping
- (2) Identify critical characteristics specific to particular discipline domains (e.g., nursing) and develop the mapping process to fit identified informational requirements
- (3) Adjust and evolve a tracking tool to support derived informational requirements
- (4) Conduct a program curriculum mapping process on a minimum of two programs, one from University of South Australia, and one from Australia Catholic University (ACU)

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

- (5) Evaluate the process, the informational requirements, and program design characteristics to improve curricula design considerations
- (6) Disseminate the results through journal article publication and conference presentation, as well as to produce information requirement specifications to improve the university system PCMS (i.e., Program & Course Management System) features.

ADDRESSING SELECTION CRITERIA

An identified area of priority for practice improvement in teaching and learning is curriculum design methodology. The project aims will provide tools and approaches to improve curriculum design – either as a planning exercise, an approach to analyze and evaluate existing programs targeted for improvement, or as a means to produce evidence necessary for program accreditation. Within the literature on curriculum design, mapping, or identifying the hidden curriculum, this project builds upon and extends the work of other research in a variety of contexts and geographies.

DEMONSTRATED NEED

Kopera-Frye and Mehaffy (2008, p. 9) argue for curriculum mapping to improve scholarly teaching and learning through alignment, and if alignment is missing, the identification of necessary adjustments. “A curriculum map also helps guide program design and improvement, including consistency, fairness, quality, and effectiveness (Matveev, Okala, & Cuevas, 2006).” The authors note that curriculum mapping can be used to meet two different needs: 1) examine a curriculum at its design stage or creation (i.e., what they term “Front-end analyses”); and 2) refine/evaluate an existing curriculum (i.e., “Back-end analyses”). An example of front-end analyses would be a case study seeking to answer the question, “Did the research [course] sequence reinforce key research principles? Did assignments fit the skill level of students to minimize anxiety and maximize learning?” (Kopera-Frye & Mehaffy 2008, p. 11). Back-end analysis includes identifying the sequence of outcomes across course numbers and to look for instances of redundancy or overlap of course objectives, artefacts, and course content.

Ozolins, Hall, and Peterson (2008) focus on identifying hidden curriculum and informing and improving curriculum design. Hidden curriculum is described as including unofficial expectations, unintended learning outcomes, the construction of social relations, and how students construct “the hidden curriculum as they respond to formal statements about what is expected of them” (Portelli 1993 as reported in Jaye, Egan, & Parker 2005). The authors note there is little discussion about the informal learning that occurs between students, and how this helps them address the formal curriculum. According to Prideaux (2003), curriculum has three components: 1) what is planned for students, 2) what is delivered to students, and 3) what students experience. From their study, researchers found students could not clearly distinguish conceptually between an “informal” and “hidden” curriculum, but students find value in the informal or hidden curriculum for “...providing ‘richness’ and depth to their learning and for acquiring the skills needed for lifelong professional learning” (p. 608). The authors also find that students consider their informal learning experiences as very important in the preparation for and achieving of success with exams. The authors note that while constructive alignment of the curriculum, teaching methods, assessment, and constructivism promote deep learning (Biggs 2003), they also add Dearn’s perspective (2004, p. 6) to remind the reader that outwardly apparent design may not tell the whole story: “...even a fully aligned curriculum would still fail to address fundamental issues related to the hidden curriculum.” This perspective further emerges as students in the study identify a mismatch and imbalance between assessments’ associations to the formal and informal curriculum that will be significant to their learning. The authors conclude that further work to explore how hidden and informal curricula might influence student learning is needed. Finally, a call is made for an exploration of the strategies students use to cope with the hidden and informal curriculum to identify what is hidden that would seem to be critical to their academic success.

Highly relevant to this project was a similar effort in 2005 to map the Bachelor of Veterinary Medicine and Surgery (BVM&S) program across all years at the Royal (Dick) School of Veterinary Studies at the

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

University of Edinburgh. Bell, Ellaway, and Rhind (2009) clarify their purpose of the project was for “...facilitating curriculum review, improving integration across the curriculum, providing a clear and transparent means of demonstrating outcomes for QA purposes, including accreditation visitations, and providing clarity in an increasingly integrated curriculum” (p. 102). The authors note that medical and related professions are increasingly integrated, while losing discrete discipline emphasis – knowledge and skills associated with specific disciplines become lost in the increased complexity of the education. Further, the authors note the difficulty embedding emerging themes into the curriculum, which become design challenges. Not only is the effort of curriculum mapping useful for the four points previously identified, the authors contend students also benefit as sharing a curriculum map becomes useful for students in their understanding of how course and program elements are embedded and supported in their entirety within the full curriculum. The authors identified the stakeholders in their project as being students, staff, prospective students, and quality-assurance and accreditation bodies, and they provide sample questions these stakeholders might wish to be able to ask as a result of the project. In their project, the team initially developed a spreadsheet tool to capture and categorize course elements and the relationships between elements to identify and ensure constructive alignment. These details were subsequently moved into a database, and other web-based tools were designed to streamline data capture. The authors recommend that curriculum mapping as a project is not to be entered into lightly, as dedicated staff will be necessary not only for capturing data, but to sustain the program. Further, the authors effectively argue for the integration of the curriculum map “...with the rest of the online environment and to align it closely with the program’s culture and dynamics” (Bell, Ellaway, & Rhind 2009, p. 104). The authors conclude their curriculum mapping approach demonstrates its value for curriculum management, review, and development.

Following the work from these studies, the proposed project similarly recognizes the general need to be able to identify and track knowledge and skills across a curriculum with the more specific need to extract and quantify overlap, redundancies, missing, or hidden knowledge and skills. Further, one area the published projects fail to address adequately is the alignment of educational strategies to targeted program outcomes. Developing tools and processes aimed at capturing such information is expected to provide strong insight into strengths and weaknesses of course and program design. Indeed, this is a core part of the project.

Additionally, this project follows Kopera-Frye and Mehaffy (2008) and Bell et al. (2009) to permit program design support, as well as program design evaluation. Both strategies are centrally important to schools and universities in their efforts to build new programs, while also being able to study the effectiveness of existing programs. Further, the project will take a stronger approach than Bell et al. as the aim is to leverage easily developed technology (e.g., spreadsheets) to inform design requirements for robust database analysis systems, such as PCMS. Where Bell et al. note the need to place curriculum data in a formal database system, they acknowledge the level of effort required to build and sustain such a system is beyond the means of many institutions. However, at UniSA, a system is in place (i.e., PCMS), but the missing components are validated data types and a data processing approach (i.e., that includes data capture, analysis, and reporting) that provide curriculum mapping to fulfill institutional needs, similar to the needs as articulated by Bell et al (2009).

In recent years, two grants have been funded by the Australian Learning and Teaching Council (ALTC). Professor Bev Oliver (Curtin University) through a fellowship grant “Assuring graduate capabilities: evidencing levels of achievement for graduate employability” (ALTC 2011) created as one component an Excel spreadsheet tool she refers to as “CCMap”. Dr Romy Lawson (University of Technology Sydney) leads the ‘Hunters and gatherers’ project which maps graduate attributes and collects assurance data (Lawson, Bajada, & Lee 2010). It must be said that in both instances, there are a number of similarities, which is inevitable given that for curriculum development and analysis we seek to achieve many of the same outcomes. For example, in terms of mapping assessment types and aligning course objectives to assessments, all the tools look and do essentially the same thing. Attribution and acknowledgment need to

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

be given to Dr Lawson, as an early version of the Hunters and Gatherers software, shared by Dr Lawson, was important in the very early discussions about the UniSA tool.

A rough comparison between the proposed UniSA prototype to Oliver’s CCMaP follows. CCMaP supports curriculum analysis across six, well-developed, areas (Oliver 2010b) (Note: below “course” refers in UniSA terms to “program/ unit”, which is essentially a UniSA “course”):

1. Course Analysis related to Unit Learning Outcomes
2. Course Analysis related to Assessment
3. Course Analysis related to Learning Experiences
4. Course Analysis related to Learning Resources
5. Course Analysis related to Curriculum Themes
6. Course Analysis related to Career Development Learning

The UniSA tool differs from CCMaP in a number of ways, but there are two major differences. Firstly, area 1 in CCMaP simply collects numbers of reference points and indicates whether or not Graduate Attributes are obtained, as well as other more problematic data relating to the use of specific verbs across the program as a kind of indication to the degree of mental effort (or “thinking”) based on Anderson and Krathwohl’s revision to Bloom’s Taxonomy of the cognitive domain (Oliver 2010a). The proposed UniSA tool does this as well, but to a much greater depth in being very explicit about Program Objectives aligning to Course Objectives. This is a much tighter fit as courses are then conceived as contributing to the attainment of explicit Program Objectives.

Secondly, regarding course analysis related to themes, Oliver’s CCMaP collects data against assessed themes. However, the UniSA prototype is designed around the idea that not everything needed in a curriculum is and can be assessed. For example “quality and safety” is a theme through the nursing curriculum, which every course needs to develop, yet not all courses will specifically assess.

The project team is familiar with Lawson’s Hunters and gathers tool, as Romy was kind enough to show us her technology earlier in 2011. Similar to the UniSA prototype, it has a tighter link between Program Outcomes and Course Objectives than does CCMaP but lacks, like CCMaP, the ability to map the hidden curriculum (i.e., course elements that are not assessed). The Romy technology is very much about assurance for learning: when you can sign off a Program Objective as “done”.

Further, the UniSA prototype is designed to track more course elements to later permit an effectiveness analysis of mediators (i.e., course elements) to learning, such as employing particular teaching and learning strategies (e.g., Inquiry-based Learning), technology enhancements (e.g., ePortfolio, LRS, Wikis, Blogs, etc), and formative assessments. Formative assessments can be linked to Course Objectives as well. There is the possibility of entering scheduling data associated with summative and formative assessments to provide program-wide analysis of academic load to facilitate curriculum planning. Each mediator, or course element, can be described with text to explain, for example, the rationale for its inclusion. This can later be revisited should assumptions or conditions change, and the rationalizations require revisiting for validity.

In summary, the UniSA prototype shares some features, but it also captures to greater depth the course elements being employed and the relationships between major drivers Course Objectives, Course Assessments, and Program Outcomes. Most importantly, the prototype permits tracking of elements that would otherwise remain invisible because they are not assessed, such as discipline-specific priorities, themes, domains of practice, or similar content areas.

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

TARGET OUTCOMES, ANTICIPATED IMPROVEMENTS, MEASUREMENT STRATEGIES

The project aims to validate approach and data types to analyze curricula. This information will be used to support future development of a university system that tracks details associated with course and programs. Further, this project will disseminate the approach and data types to the broad educational community. Through the approach to improve data validity, this project will collaborate with at least one additional University. By working with another University, the collected data will represent a more fully authentic sample.

The anticipated improvements to result from this project include an increased ability to track the details in a program that can be lost within the complexities. Following the terminology of Kopera-Frye and Mehaffy (2008), this project will yield a tool and an approach to facilitate conducting either front-end or back-end analyses for program design or evaluation. This project will also facilitate how Program Directors can respond to requests to provide evidence where and how varying knowledge, skills, or enhancements, such as technology or pedagogy, are embedded across a curriculum.

One specific target outcome of this project is to favorably improve the features and functions of UniSA's Program and Course Management System (PCMS). With regards to course and program reporting and analysis, the current version of the system offers basic functions that permit inquiries to generate reports on administrative details relating to courses and programs. To be useful for educational research and analysis, a deeper level of detail needs to be added into and tested with the prototype. Additionally, some programs include program outcome targets that are not tracked, as this information is not articulated within the objective statements of assessment details. The prototype is designed to store this information and produce reports that have a multitude of uses, including but not limited to the alignment between objectives, assessments, program outcomes, and a diverse set of design elements such as discipline-specific priorities, themes, and domains of practice, as well as technology-enhancements, formative assessments, and rationales for inclusion. Part of the scope of the project is to identify and develop reports that the School of Nursing will find useful for reasons, such as reporting how changes to an element of a course such as an assessment item will impact on the overall coherence of the program. Ongoing discussion will continue with the PCMS Development Team about this developed and tested prototype with the potential to inform future upgrades of PCMS.

One potential application of this level of data and formatting of information will be to permit research into course and program design effectiveness. Currently, such research is not possible without manually assembling the information, converting the data into workable formats, and analyzing student retention and academic achievement against that data. The long aim is to direct the development of PCMS to permit such analysis. This type of analysis will not be restricted to the School of Nursing but can be extended into other disciplines. The directing philosophy for the project is to identify data structures and formats that will scale to permit University-wide application.

Curricula that have accreditation requirements including reporting responsibilities (e.g., Bachelor of Nursing) have complexities that are different to non-regulated professional programs. For instance, within the Bachelor of Nursing, the accreditation body requires demonstration of a clearly aligned curriculum that shows a scaffolded approach to the development of integrated themes, national priorities, skills and domains of practice. The linear nature of current curriculum design makes it difficult to demonstrate the horizontal and vertical alignments within curriculum. This mapping tool will make this possible and opens the door to a new level of analysis, evaluation, and reporting. The simplified alignment approach of assessments to objectives will need to be re-addressed within this context. Future work will likely expand to improve the data mapping technology, as well as explore other disciplines at a national level.

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

APPROACH

The approach includes the specification of details to manage the activities and resources to complete the proposed project within the time specified and the estimated budget. Therefore, the approach includes the following subcategories to describe how this project is to be managed: Project Scope – presents scoping statements and limitations; Project Stakeholders – identifies key groups or individuals who have a stake in this project; Project Timeline and Milestones – identifies the schedule and set of deliverables; and Risk Management – identifies the key factors that may negatively impact the successful completion of the project.

Project Scope

The scope of the project includes the six project targets as described in the AIMS section. This project is limited to the Division of Health Sciences, while the project team recognizes the potential for future application in other Divisions. Accordingly, resources available to support the project are limited to Division of Health Sciences and the City East Campus Learning and Teaching Unit (CE LTU) team members. Further, this project includes inviting participation to at least one outside institution (ACU) to provide validity to results and findings. The budget and timeline for the proposed project is the limiting factor to include only one outside partner.

This project is also limited to a single discipline to support the target of validating the approach and derived informational requirements: the inclusion of different disciplines would increase the number of variables and decrease the validity of results. The selected discipline is undergraduate nursing and the program of study will be the Bachelor of Nursing & Midwifery, since this is the program that initiated the project conceptualization. As the School of Nursing and Midwifery at UniSA already holds strong ties to the Australian Catholic University (ACU), the scope of this project is to include ACU as the collaborative partner. Associate Dean (Nursing and Midwifery) Karen Flowers RN, Ph.D., has been approached and has committed to participating in this project.

Project Stakeholders

Project stakeholders for this project include the following groups or individuals:

- **LTU – UniSA:** Professor Margaret Hicks, Director LTU and PCMS Owner; Associate Professor Gavin Sanderson, Deputy Director LTU and Team Lead to project participants
- **Chancellery:** Professor Joanne Wright, Deputy Vice Chancellor & Vice President: Academic
- **PCMS Development & Support Team:** Lohlan Lee, and others To Be Determined (TBD)
- **Division of Health Sciences – UniSA:** Esther May, Dean: Health and Clinical Education; <Not yet appointed>, Acting Head of School: School of Nursing and Midwifery
- **LTU – ACU & Division of Health Sciences, School of Nursing and Midwifery:** TBD

This project has the potential to serve many in the University. Therefore, the stakeholders provide counter-balance and University-wide perspective to the project team to ensure that the outcomes not only serve the project team and the immediate needs of the School of Nursing and Midwifery, but also to the wider audiences at UniSA. The level of involvement expected of the Project Reference Group includes attending to communications (e.g., emails) and meeting demonstrations with discussions. The estimated time commitment is 2-3 hours per month.

Carol Grech will remain as a member of the project team throughout the time the project is active. Carol is currently acting Head of the School of Nursing and Midwifery until the new Head of School is appointed. The requirement that the Head of School be a member of the reference group will be met when the new Head of School is appointed.

The identified Project Team have a complementary and extensive set of skills, knowledge and experience to complete this project and, as previously indicated, have a well established working relationship with key staff at Australian Catholic University. An invitation will be extended to Dr Cath Hall to join the Reference

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

Group which will provide an avenue of broader consolation and collaboration related to the millstones and outcomes of the project.

Project Timeline & Milestones

The project timeline comprises process steps mapped strategically to bring the project to a successful conclusion. Process steps and milestones should not be confused with each other. Milestones represent key dates by which specific activities or events take place. The dates are “key” because they represent critical deadlines set to keep a project on target. While it is possible that a process step and a milestone occur on the same day, not all process steps are milestones since they may be adjusted without affecting critical deadlines. The concepts and terms are not interchangeable.

The timeline is structured around a systems development model that is based on rapid prototyping – roughly **design, test, design, implement, evaluate, and finalize**. The process steps are titled to convey the major effort that describes a particular step, but other efforts are underway simultaneously. For example, as the curriculum mapping tool is being populated with data that will be part of the study, the tool is simultaneously being re-designed to fit needs. While “design” is mentioned twice, this reflects that there will be two major design process steps: one for UniSA and one to support the partner university. The “test” process reflects activities to ensure proper tool functioning. The “implement” step recognizes that populating the tool for the partner university may include a number of additional sub-steps to support data population. For example, if the partner university does not have similarly well-articulated objectives, some strategy may need to be developed to provide a work-around. The “evaluate” step includes both analysis of collected data, as well as an evaluation of the approach to conduct this type of work. The “finalize” step reflects the production of final reports, as well as dissemination through article writing and conference presentations.

Anticipate timelines for the process steps will be the following:

- (1) Design: October – December 2011
- (2) Test: November – December 2011
- (3) Design: January – March 2012
- (4) Implement: February – April 2012
- (5) Evaluate: March – May 2012
- (6) Finalize: April – September 2012

Regular progress reports will be disseminated on a monthly basis to project stakeholders: Margaret Hicks, Gavin Sanderson, Carol Grech, and LohLan Lee from the PCMS development and support team.

Milestones for this project include the following five:

Milestone 1: Project Proposal and Grant Submission

Target date: Friday, October 21, 2011, 4pm / Revised date: Monday, January 16, 2012, 5pm

Details: Audience: Project Team, Project Reference Group, and Grant Review Board

The deliverable for this milestone is this document. The purpose of this milestone and deliverable is to kick-off the project with disclosure of the project details and formulation of communication and resource needs, and how these will be derived and adjusted through the work of project team members during the project’s schedule.

Milestone 2: UniSA Data Entry Complete

Target date: On or before Friday, December 16, 2011, 4pm/Revised date: February 24, 2012, 5pm

Details: Audience: Project Team, Project Reference Group, and Project Stakeholders

The deliverable for this milestone is the completed entry of course and program design data from UniSA sources into the tool.

Milestone 3: Partner University Data Entry Complete

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

Target date: On or before Friday, April 6, 2012, 4pm

Details: Audience: Project Team, Project Reference Group, Project Stakeholders, and Extended Stakeholders at Partnering University

The deliverable for this milestone is the complete entry of course and program design data from partner university sources into the tool.

Milestone 4: Analysis and Evaluation Complete

Target date: On or before Friday, May 25, 2012, 4pm/Revised date: June 29, 2012, 5pm

Details: Audience: Project Team, Project Reference Group, Project Stakeholders, and Extended Stakeholders at Partnering University

The deliverable for this milestone is the documentation of the analysis and evaluation results of the project. Further, the basis of the documented results is used to present at a conference (14th National Nurse Education Conference, Perth, Western Australia) and to prepare an article for publication.

Milestone 5: Project Complete

Target date: On or before Friday, June 29, 2012, 4pm/Revised date: September 28, 2012, 5pm

Details: Audience: Project Team, Project Reference Group, and Project Stakeholders

The deliverable for this milestone is the completion of internal presentations and associated documents to Project Stakeholders and Reference Group.

Intellectual Rights and ACU Involvement

The legal framework regarding the prototype and other supporting resources for this project will be that UniSA will retain all intellectual rights. ACU contributes personnel to support mapping and gets their Bachelor of Nursing program mapped. They do not contribute to project costing because they will not receive intellectual rights to the technology.

Staff from the Australian Catholic University (ACU), specifically Assoc. Prof. Karen Flowers (Associate Dean of Health Sciences: Nursing and Midwifery); Ms Paula Williams (Faculty of Health Sciences e-Learning Coordinator); and, Ms Natalie Gamble (Faculty of Health Sciences Project Officer: Learning & Teaching Enhancement) have collaborated with the UniSA School of Nursing & Midwifery since early 2010 regarding undergraduate nursing curricula design and inquiry based learning (IBL). Three members of the project team (A/Professors Carol Grech, Colleen Smith and Dr David Birbeck) have conducted IBL workshops for ACU and in October 2012, Paula Williams and Natalie Gamble met with the Project Team at the City East campus to discuss, among other collaboration activities, this proposed curriculum mapping project. As A/Prof Karen Flowers is currently on leave from ACU (returning in the New Year) a formal agreement will be developed through UniSA Contracts Execution and Grants Management Services and submitted in February 2012.

Ms Paula Williams (ACU Faculty of Health Sciences e-Learning Coordinator) and Ms Natalie Gamble (ACU Faculty of Health Sciences Project Officer: Learning & Teaching Enhancement) will contribute to data entry for ACU.

Workload Description for Data Entry

The work of data entry can be generally described as requiring two steps: 1) course details are set up from PCMS-derived data; and 2) deep-level details entered on a per course basis. For step 1, course details set-up, a course worksheet is created by copying a worksheet template from the tool and pasted into a new, blank worksheet. Then, course details are received from the PCMS support team, converted into an Excel format and pasted into the course worksheet. For step 2, the deep details, the work can vary depending on the level of information available (i.e., and can likely be derived from course coordinator interviews or investigation into existing resources). In essence, the details are entered into specific areas of the worksheet. The information may be pasted or manually keyed. In many instances, a check box approach is used. This

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

step will be the most time consuming, as it will be dependent upon the level of detail obtained. The two steps are repeated for each course in a program.

The project will be led by Dr George Bradford who has extensive experience in instructional technology including supporting technology-enhanced learning (TEL) development and evaluation. Members of the project team will work with the project leader and the partner university to ensure the relevance and quality of the data that goes into the prototype, involved in the testing analysis and evaluation of the design process. A research assistant will convert the PCMS data and work with Course Coordinators from UniSA and the Partner University to populate data into the mapping tool. This person will also regularly liaise with the project team, leader and reference group, and organise the delphi component of the mapping tool evaluation.

Risk Management

Managing risk associated with the project can be reduced to identifying mitigating strategies for three critical areas of the involved work: curriculum development, programming in the prototype technical environment, which currently is Excel, and relationship management with ACU. Firstly, curriculum development expertise is not at risk as each project team member has experience with it, so the loss of any individual during the project lifecycle will not place a successful conclusion at risk. Secondly, Excel programming expertise is held by a single project team member, George Bradford. While the loss of the expertise does pose a risk, the risk is relatively small given that the extensive programming is already complete, leaving an expectation for minor adjustments only.

The Excel environment was intended only for prototyping. The development of future technical solution will lie in a different programming environment, and in this way, Excel programming expertise is not critical: future developers only need to gather what data is being stored; how that data is formatted; what relationships are made between connected data variables; and what reports are found to be useful and which variables they are derived from. These details will be mapped out of the Excel programming environment and into another, such as PCMS. Should Bradford for any reason no longer be a member of the project team, his research interests lie in this area of curriculum development, analysis, and evaluation, so he will remain engaged with the project howsoever. Thirdly, the relationship between the Nursing program at UniSA and ACU has been developed over time with coordinated visits and meetings covering a variety of different goals. While the strongest relationship is managed by Carol Grech, each of the other project team members knows some of the ACU academic staff as well. The associated risk should be characterized as typical of any project, given the personal relationships involved, and therefore the risk should be considered as acceptable.

EVALUATION STRATEGY

The evaluation of the project will include a qualitative methodology. As a preliminary investigation into the utility of the prototype, a delphi group design will be developed to explore four aspects of the prototype: 1) the identification of reports (and their formats) that will be seen as useful to the School of Nursing and Midwifery, inclusive of Partner University, as well as reports that may be seen as useful to other disciplines; 2) establish a priority of reports as regards their utility to the School; 3) envision future reports or data capture and analysis that will extend the utility the prototype can provide; and 4) an open-ended inquiry into the perceived utility of mapping course details across a curriculum – what is critical and what is not. The rationalization for the delphi group design is to address attendance challenges: it may prove quite difficult to have key representatives available at the same time to permit participation in focus groups. Further, the delphi approach is appropriate: it is iterative and leads to agreed understandings. For this type of analysis, it is presumed that ethics approval will not be necessary.

The delphi group approach in general is conducted asynchronously, usually via email. Participants are advised of communication and response details; each participant may not necessarily know the other participant identities. Participants respond to an instrument (e.g., a questionnaire) anonymously, and their

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

responses are revised following a pre-set protocol. The revisions are then assembled into a revised questionnaire, and the participants are again asked to consider and respond. It is possible a third iteration may be used. The final data will then be analyzed for emergent themes and priorities that will be used to direct future work beyond the current grant. The evaluation analysis will not be extensive, but rather indicative: follow on work should include a much more extended analysis and evaluation. The proposed qualitative analysis should indicate where further work will be necessary to permit future quantitative analysis, while also establishing general utility. The scope of this project proposal is to provide proof of concept, not a finished product.

The aforementioned evaluation strategy seeks to build the future case for exploring how courses and programs can be described as *effective* when considering their design characteristics. The use of the term *effective* refers to the statistical results of student retention and achievement. To conduct such explorative research, a follow-on project focus will be on differences or relationships of course or program design characteristics against student retention or achievement. This means the independent variable for course or program design characteristics must be *identified* and *isolated* – hence the need for *consistent* data characterizations and curriculum mapping of the program. With such analysis requirements in place, research might proceed by using the Independent-T test to explore differences between UniSA sampled population and the partner university sample population or by using multiple regressions to test for relationships. While these particular tests **are not included** in the scope of this study, they are mentioned to explain the requirement to evaluate the prototype and data characterizations. For this type of analysis, future ethics approval will be necessary.

DISSEMINATION OF FINDINGS

Dissemination of findings includes internal and external presentations, conference presentation, and expected journal article publication. Internal presentations will be to Dean Esther May, the Program Directors and Course Coordinators for the Bachelor of Nursing program, the PCMS development and support team, and to organizations at the partnering university.

Disseminating information to the stakeholders will include monthly progress reports as emails (possibly including attachments, such as but not limited to Word-based reports and inserted graphics) that will include costs incurred and progress made. These reports will be delivered to all stakeholders / reference group members. Several presentations to demonstrate progress will be organized at key moments in the project lifecycle. These presentations will be given to all stakeholders / reference group members.

Dissemination to the wider University should be through TALC. All four divisions have functional TALCs where this tool can be shown. Further, the dissemination strategy will stretch beyond the University by means of publications and conference presentations, as well as future grant applications. Academic Developers (ADs) will be pivotal in the dissemination strategy around program development. It's important to highlight that the prototype technology is not one you just pick up and use. It is one that needs to be strategically used when it can provide maximum returns for the effort needed. Few programs have coherent program objectives and developing these will be stressful and require long work for any program.

A conference in Perth has been identified and an abstract submitted and accepted by the 14th National Nurse Education Conference being held in Perth, on the 11 – 13 April 2012 (Please see the following website: <http://www.iceaustralia.com/nnec2012/>).

The benefits from this project are many. As articulated by Bell et al. (2009), the project will facilitate curriculum review, improve integration across the curriculum, provide a clear and transparent means of demonstrating outcomes for QA purposes (including accreditation visitations), and provide clarity in an increasingly integrated curriculum in Nursing. Further, the project will yield useful design information for PCMS and set the stage for deeper analysis and evaluation of what might characterize *effective* program

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

designs. In addition, the community at UniSA will likely benefit in later iterations as the project is scaled out to support new design and development of curricula across the four divisions, or as an evaluation approach to improve existing designs. Finally, for the community beyond UniSA, at least one partner university will directly benefit in similar ways as the Nursing program at UniSA, and other universities will see an approach to conduct similar projects on their own campuses.

BUDGET

A Research assistant will be appointed for 7.5 hours per week for 18 weeks to undertake the duties outlined previously. No teaching buy-out is required for the principal applicant or the project team members. The travel related costs were provided by Phil Hoffman Travel. Project costing is divided across two stages:

- 1) Stage 1 reflects the cost for data entry and includes two items: 1) procurement of software to convert PCMS generated reports into a format suitable for the prototype (i.e., Excel); and 2) the cost of a Research Assistant to support data entry. Added cost for PDF-Excel Conversion Software: Wondershare (see this URL: <http://www.anypdf.com/pdf-converter-win-buy.html>). Single license cost for PDF Converter Pro is \$79.95 US or \$159.90 US for 2-5 licenses. Costs for the Research Assistant, ARA 5 for 11.5 hours per week for 20 wks (6th Feb – June 22nd 2012) @ \$41.45 per hour = \$6,217.50 plus 16.5 % on costs = \$7,243.39 – Total \$7,481.31 (includes licensing for 2-5 PCs) and a completion date of May 2012 (for details, please see accompanying document, “Staged Budget Pro Forma – HSC Nursing 2011);
- 2) Stage 2 reflects the costs for analysis, evaluation, and dissemination– Total \$2,521.00 and a completion date of September, 2012;

Total projected expenses are \$10,002.30.

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APPENDIX A – EXTENDED DISCUSSION OF THE LITERATURE

In a study to map 31 courses in a Pharmacy program at the University of Arizona, Plaza, Draugalis, Slack, Skrepnek, and Sauer (2007) conducted a mapping process that included three data sets: expected educational outcome details derived from reviewed syllabi from the 2004-2005 academic year (this information was entered into a document titled “Outcomes Expected of Graduates of the Doctor of Pharmacy Program” or more succinctly, “Outcomes Expected”); student ratings of domain coverage identified in the Outcomes Expected document; and instructor responses to a questionnaire on if they teach to competencies identified in the Outcomes Expected document. The authors follow Porter’s (2001) topographical maps to display the curriculum to indicate any relationship between competencies and knowledge and skill domains. To facilitate comparative analysis, the authors conducted some data conversion to permit uniform presentation (e.g., translation to numerical data, proportions, and means to proportions). The authors note that while their methodology to map the curriculum was free of recall bias (Litaker, Cebul, Masters, Nosek, Haynie, & Smith 2004) from participating academics and students, there was no way to determine the extent particular knowledge or skills are reinforced. The authors also note the study’s major limitation was that the intended and delivered curricula were the same. This bears on the validity of the analysis since student responses would reflect delivered curriculum and academic responses to the questionnaire would reflect the intended curriculum, so while similar language was used in each data set, responses would reflect different experiences. The authors highlight the need to rectify the inability to differentiate between the two experiences but do not offer how this might be achieved. However, the authors do note that using graphical curriculum maps to identify potential redundancies or excessive review, and even potential areas in the curriculum that are hidden is useful.

REFERENCES – EXTENDED DISCUSSION OF THE LITERATURE

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T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

Porter, A. C., & Smithson, J. L. (2001), Defining, developing, and using curriculum indicators. *CRPE Research Report Series Consortium for Policy Research in Education, Philadelphia, PA.*

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

Appendix B: Prototype tool screen captures

	A	B	C	D	E	F	G	H	I	J	K	L
1												
2		Welcome to the...										
3												
4		Curriculum Mapping Tool										
5												
6	What's in this tool?											
7	1	Index		Here :: Overview and easy access to contents of this tool								
8	2	HELP		<Under construction>								
9	3	Reports		Tables extracting course information from across program								
10	4	GQs-Pos		Mapping doc between Grad Qualities and Program Outcomes								
11	5	Template1		Use this when adding course maps to the tool								
12	6	Sample		Example of a course map with supporting word tables						Course Nr	Course ID	
13	7	1		Nursing(NURS)						NURS 1033	1033	
14	8	2		Biological Sciences(BIOL)						BIOL 1047	1047	
15	9	3		Health(HLTH)						HLTH 1036	1036	
16	10	4		Biological Sciences(BIOL)						BIOL 1048	1048	
17	11	5		Health(HLTH)						HLTH 1038	1038	
18	12	6		Health(HLTH)						HLTH 1037	1037	
19	13	7		Nursing(NURS)						NURS 1055	1055	
20	14	8		Nursing(NURS)						NURS 2024	2024	
21				.								
22				.								
23				.								
24				.								
25				.								
26				.								
27				.								
28				.								
29				.								
30				.								
31				.								
32				.								
33				.								
34				.								
35				.								
36				.								
37				.								
38				.								
39				.								
Index Help Reports GQs-POs Template1 Sample 1 2 3 4 5 6 7 8												

Figure 1: Index page presents contents of the file with hyperlink access to content. The Index, Help, Reports, GQs-POs, Template, and Sample pages are fixed. Course pages (see numbered tabs) are added as course information is entered into the prototype. The indexed links to these course pages are automatically added to the Index page.

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

	A	B	C	D	E	F	G	H	I	J
1	Index									
2		Welcome to the...								
3										
4		Reports Worksheet								
5										
6	What's in this report worksheet?									
7		List of Tables								
8	1	Program Outcomes to Courses								
9	2	Courses to Enhancements (e.g., TEL, Specified Pedagogy)								
10	3	Courses to Health Care Priorities								
11	4	Courses to Themes								
12	5	Courses to Domains of Practice								
13	6	Courses to Assessments, Student Loads								
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										

Figure 2: Reports page presents the initial list of prepared reports that can be generated from the data in the course pages.

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

	A	B	C	D	E	F	G	H	I	J	K	L
28												
29	TOP											
30	V	Program Outcomes to Courses										
31	1	Abbrev. # Chars:	40		Index Nr:	1	2	3	4	5	6	
32												
33		Table V										
34		Table V: Program Outcomes to Courses										
35						Course Numbers						
36		Program Outcome	Abbreviated Program Outcome			NURS 1033	BIOL 1047	HLTH 1036	BIOL 1048	HLTH 1038	HLTH 1037	
37		1	demonstrate an understanding of the body...									
38		2	relevant legislation, regulation and pr...									
39		3	underlying knowledge that informs the ra...									
40		4	contemporary practice relevant to the co...									
41		5	research approaches used to generate fur...									
42		6	apply knowledge in clinical and simulati...									
43		7	support and direct the accumulation of e...									
44		8	locate, evaluate, manage and use informa...									
45		9	understand the limitations of, and have ...									
46		10	understand and accept personal weaknesse...									
47		11	utilize self learning to support career...									
48		12	sustain intellectual interest and critic...									
49		13	gather, evaluate and deploy relevant inf...									
50		14	apply strategies to conceptualise proble...									
51		15	determine appropriate priorities to assi...									
52		16	evaluate progress and amend actions to s...									
53		17	define researchable questions in nursing...									
54		18	practise autonomously in the provision o...									
55		19	work collaboratively with different grou...									
56		20	evaluate and support the learning needs ...									

Figure 3: Reports page – example report – Program Outcomes to Courses - presents an inventory of which Program Outcomes (POs) are treated in all courses in the program.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
79														
80														
81														
82														
83														
84	TOP													
85	W	Courses to Enhancements (e.g., TEL, Specified Pedagogy)							x	: Display character				
86	2	Index Nr:	1	2	3	4	5	6	7	8	9	10	11	
87														
88		Table W												
89		Table W: Courses to Enhancements (e.g., TEL, Specified Pedagogy)												
90														
91	Index Nr	Course Nr	eP - Mahara LRS - Echo3i Connect - A4 Discussion bo			Quiz Tool			Lesson Bran Blogs		Wikis	Social Bookn Screencastir IBL		
92	1	NURS 1033												
93	2	BIOL 1047												
94	3	HLTH 1036												
95	4	BIOL 1048												
96	5	HLTH 1038												
97	6	HLTH 1037												
98	7	NURS 1055												
99	8	NURS 2024												

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

Figure 5: Reports page – example report – Courses to Enhancements - presents an inventory of which enhancements (e.g., TELs or pedagogies, such as Inquiry-based Learning) are treated in all courses in the program.

	A	B	C	D	E	F	G	H	I	J	K	L
127												
128												
129	TOP											
130	X	Courses to Health Care Priorities										
131	3	Abbrev. #:	9	Index Nr:	1	2	3	4	5	6	7	8
132												
133		Table X										
134		Table X: Courses to Health Care Priorities										
135		Course details			Health care needs and priorities							
136					1	2	3	4	5	6	7	8
137	Index Nr	Stage	Course Nr		Arthritis...	Asthma...	Cancer co...	Cardiovas...	Diabetes ...	Injury pr...	Mental he...	Obesity...
138	1	1	NURS 1033									
139	2		BIOL 1047									
140	3		HLTH 1036									
141	4		BIOL 1048									
142	5		HLTH 1038									
143	6		HLTH 1037									
144	7		NURS 1055									
145	8		NURS 2024									

Figure 6: Reports page – example report – Courses to Health Care Priorities - presents an inventory of which priorities (e.g., Arthritis, Asthma, Cancer Care, Cardiovascular Diseases, etc.) are treated in all courses in the program.

Special note: The format of these reports are designed following APA publishing guidelines for ease of reading, consistency of presentation, and for possible inclusion into published papers. Given UniSA follows Harvard Style, these reports could be redesigned following those style-guide conventions; however, this is not within the scope of the proposal.

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

L152																	Nr						
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S				
1	Index																						
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							
13																							
14																							
15																							
16																							
17																							
18																							
19																							
20																							
21																							

Program Specific Outcomes Mapped to Graduate Qualities (GQs)									
(Final cross-reference table located at Row 5, Col BR)									
Graduate Quality Map									
GQ Nr	Col Nr	Row Nr	Col	Row	Target	Text			
1	9	b			9 b9	Operates effective			
2	16	b			16 b16	is prepared for life			
3	21	b			21 b21	Is an effective prot			
4	26	b			26 b26	can work both aut			
5	31	b			31 b31	is committed to et			
6	37	b			37 b37	communicates effe			
7	42	b			42 b42	demonstrates inte			
Program Specific Outcomes Map						Number of program outcome			
PO Nr	GQ Nr		Col Nr	Row Nr	Col	Row	Target		
1	1				c		7 c7		
2	1				c		8 c8		
3	1				c		9 c9		
4	1				c		10 c10		
5	1				c		11 c11		
6	1				c		12 c12		

Figure 7: GQs-POs page presents a centralized resource where program-wide details (e.g., graduate qualities, health care priorities, themes, domains of practice, technology enhancements, specialized pedagogy, etc.) are entered for referencing in all of the Course Pages. The illustrated document mapping GQs to POs is a sample from Nursing that is pasted into the prototype, then coordinate details are entered to the right allowing for nearly automated extraction without need for re-keying.

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

	L	M	N	O	P	Q	R	S
58								
59								
60	Health care needs and priorities							
61	HC Nr		Text					
62	1		Arthritis and musculoskeletal conditions					
63	2		Asthma					
64	3		Cancer control					
65	4		Cardiovascular health					
66	5		Diabetes Mellitus					
67	6		Injury prevention and control					
68	7		Mental health					
69	8		Obesity					
70								
71								
72								
73								
74								
75								
76								
77								
78								
79								
80	Integrating themes							
81	IT Nr		Text					
82	1		Safety and quality					
83	2		Population health					
84	3		Cultural competency					
85	4		Evidence-based practice					
86								
87								
88								
89								
90	Domains of practice							
91	DP Nr		Text					
92	1		Professional practice					
93	2		Critical thinking and analysis					
94	3		Provision and coordination of care					
95	4		Collaborative and therapeutic practice					
96								

Figure 8: GQs-POs page – Nursing specific choices – where program-wide details (e.g., graduate qualities, health care priorities, themes, domains of practice, technology enhancements, specialized

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

pedagogy, etc.) are entered for referencing in all of the Course Pages.

	K	L	M	N	O	P	Q	R
106								
107								
108								
109								
110		Group Offering Details						
	Nr	Text						
112	1	Lecture						
113	2	Tutorial						
114	3	Workshop						
115	4	On-Campus Workshop						
116	5	Seminar						
117	6	Online Delivery						
118	7	Practical						
119	8	Practicum						
120	9	Computer Practice						
121	10	Studio						
122	11	Case Study						
123	12	Fieldwork						
124	13	Clinic/Clinical Placement						
125	14	Industrial Placement						
126	15	Directed Study						
127	16							
128	17							
129	18							
130	19							
131	20							

Figure 9: GQs-POs page – Group Offering choices – where program-wide details (e.g., graduate qualities, health care priorities, themes, domains of practice, technology enhancements, specialized pedagogy, etc.) are entered for referencing in all of the Course Pages.

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
148																		
149																		
150																		
151		Activities - Technology Enhancements										Other Enhancements						
152		Nr		Text								Nr		Text				
153		1		eP - Mahara								0						
154		2		LRS - Echo360														
155		3		Connect - Adobe														
156		4		Discussion boards / Online Forums														
157		5		Quiz Tool														
158		6		Lesson Branching														
159		7		Blogs														
160		8		Wikis														
161		9		Social Bookmarking														
162		10		Screencasting														
163		11		IBL														
164																		
165																		
166																		
167																		
168																		
169																		
170																		
171																		
172																		

Figure 10: GQs-POs page – Enhancement choices – where program-wide details (e.g., graduate qualities, health care priorities, themes, domains of practice, technology enhancements, specialized pedagogy, etc.) are entered for referencing in all of the Course Pages.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	
1	Index	Reports																							
2																									
3																									
4																									Map
5																									Section
6																									1. Course de
7																									
8																									
9																									
10																									
11																									
12																									
13																									
14																									
15																									
16																									
17																									
18																									
19																									2.1 Prerequi
20																									
21																									
22																									
23																									
24																									
25																									2.2 Course A
26																									
27																									
28																									
29																									
30																									2.3 Course C
31																									
32																									
33																									
34																									
35																									
36																									

Figure 11: Template page contains the space for pasting current details with course information, which can originate as Template 7-type documentation or converted PCMS reports. To the right is the extraction logic that nearly automates taking the details from the forms and converts it into formats that can be used for analysis and reporting.

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM
1															
2															
3	Map						TargetCol	TLength	T-Char	LabLength	Label	KeyText (Ext	KeyText Clean 1	KeyText Final	
4	Section	Target w/in Sect	Col	Row	Guess Col	Guess Row									
5	1. Course details	1. Course name:		d	5	d5					Paste Table 1 Her	0			
6		Subject Area:		d	6	d6					Subject Area:	0	0	0	
7		Catalog Nr:		d	7	d7					Catalog Nr:	0	0	0	
8		Course Level:		d	8	d8					Course Level:	0	0	0	
9		Career:		d	9	d9					Career:	0	0	0	
10		Unit Value:		d	10	d10					Unit Value:	0	0	0	
11		School Owner:		b	13	b13					School Owner:	0	0	0	
12		Year of Introduction:		d	14	d14					Year of Introducti	0	0	0	
13		NOT USED		b	14	b14					NOT USED	0	0	0	
14		Exam Administered:		d	18	d18					Exam Administer	0	0	0	
15		Campus: NOT USED		d	19	d19					Campus: NOT USED	0	0	0	
16		Grading Basis:		d	21	d21					Grading Basis:	0	0	0	
17		Field of Education:		d	22	d22					Field of Education	0	0	0	
18		Work Experience/Placement:		d	23	d23					Work Experience,	0	0	0	
19	2.1 Prerequisite(s) and corequisite(s)	Prerequisite(s)		d	20	d20					Prerequisite(s)				
20		Prerequisite(s)		d	21	d21					Prerequisite(s)				
21		Corequisite(s)		d	20	d20					Corequisite(s)				
22		Corequisite(s)		d	21	d21					Corequisite(s)				
23															
24															
25	2.2 Course Aim & Content	Course Aim:		b	31	b31	End Row:	32	b32	Course Aim:	0	0	0	0	0
26		Course Content:		b	34	b34	End Row:	40	b40	Course Content:	0	0	0	0	0
27															
28															
29															
30	2.3 Course Objectives	Course Objectives		c	43	c43	Course Objectives				an = a1 + (n - 1)d, n = 1, 2, ...				
31		Nr of objectives	7				1	Col	Row	Col + Row				4	
32							FIRST	c	43	c43	43 c			FIRST	Col
33							LAST			c43	43 c			LAST	
34															
35							2			CO 2				5	
36															

Figure 12: Template page – part of the logic for data extraction from the different course reports (e.g., Template 7-type documents or PCMS generated course reports).

	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL
181																
182																
183			2.9 Activities - Enhancements	Activities - Enhancements (Quick List - most used)			Rationale / Description of use								Activities (Extended)	
184			1	eP - Mahara											11	IBL
185			2	LRS - Echo360											12	
186			3	Connect - Adobe											13	
187			4	Discussion boards / Online Forums											14	
188			5	Quiz Tool											15	
189			6	Lesson Branching											16	
190			7	Blogs											17	
191			8	Wikis											18	
192			9	Social Bookmarking											19	
193			10	Screencasting											20	
194																
195																
196																
197																
198																
199																
200			2.10 References	References		214	b	214	b214						Reference(s) - Set Row Number	
201				Nr of References		4									Textbooks and references	
202															1	Resource 1
203															Col	Row
204															FIRST	b
205															LAST	214
206																b214
207															2	Resource 2
208															Col	Row
209	BE32														Guess C	
210				Health care needs and priorities			Evidence / Supporting description								FIRST	b215
211															LAST	b215
212				Arthritis and musculoskeletal conditions												
213				Asthma												
214				Cancer control											3	Resource 3
215				Cardiovascular health											Col	Row
216				Diabetes Mellitus											FIRST	Guess
217				Injury prevention and control											LAST	b216
218				Mental health												b216
219				Obesity												

Figure 13: Template page – part of the area where additional details regarding the course may be entered, such as figured here enhancements and the matching of health care priorities to Course Objectives.

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[illegible]

Figure 14: Sample page – demonstrating how pasted-in PCMS course report data is displayed and the extraction settings.

	A	B	C	D	E	F	G	H	I	J	K	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN		
28		Comment only																					
29																							
30		Course Aim																					
31		The aim of this course is to develop the knowledge and frameworks to understand professional healthcare,																					
32		nursing and midwifery practice in a global context.																					
33		Course Content																					
34		Health practitioners as learner, cultural awareness, competencies and codes, Information literacy, regulation,																					
35		accountability, professional framework, numeracy, digital literacy, learn online, e-profile, critical thinking,																					
36		evidence based, Occupational Health and Safety Act, personal safety and safety of others, theories and																					
37		concepts of human development: physical, emotional, cognitive and psychosocial. Basic nursing activities:																					
38		decision making, infection control, bed making, hygiene professional standards and codes of practice: reflective																					
39		practice, communication and teamwork skills: health assessment, interviewing, introduction to legal, ethical and																					
40		regulatory frameworks: manual handling.																					
41		Course Objectives																					
42		No Objective																					
43		1 Examine what it means to be a health professional in a global environment.																					
44		2 Demonstrate the range of literacies that inform health care and practice.																					
45		3 Demonstrate the basic communications and team skills required for inter-professional practice in																					
46		multicultural environment.																					
47		4 Describe the professional, legal and ethical requirements which underpin health care and practice																					
48		5 Identify principles and practice that inform quality care.																					
49		6 Identify the physical, social, emotional and cognitive aspects of human development.																					
50		7 Apply the knowledge and skills that support the fundamental activities comprising health care and																					
51		practice.																					
52		Graduate Qualities																					
53		GQ1	GQ2	GQ3	GQ4	GQ5	GQ6	GQ7															
54		1	Y	N	N	Y	N	Y															
55		2	Y	Y	Y	N	N	N															
56		3	Y	Y	Y	N	Y	Y															
57		4	Y	N	N	Y	Y	Y															
58		5	Y	N	Y	Y	N	Y															
59		6	Y	Y	Y	N	Y	N															
60		7	Y	N	Y	N	N	Y															
61																							
62		Offer Delivery	Mode	Partner Name	Location	Language	Teaching Method	Intensive Mode?	Course Staff														
63		No.																					
64		1	INT		ENG		N		Dr Merri Paech														
									Dianna														

Figure 15: Sample page – demonstrating how pasted-in PCMS course report data is displayed and the extraction settings.

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	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM
88															
89			Col	Row				Col	Row					Col	Row
90	2.6 Assessment	Offer 1			c	115		Offer 2			c	119		Offer 3	
91		Nr assessments	4					Nr assessments	4					Nr assessments	4
92	Summative	A - Type			d	115		A - Type			d	119		A - Type	
93		Length			e	115		Length			e	119		Length	
94		Duration			f	115		Duration			f	119		Duration	
95		Pct%			g	115		Pct%			g	119		Pct%	
96		Objectives			h	115		Objectives			h	119		Objectives	
97		Scheduled (week nr)			AA	97		Scheduled			AG	97		Scheduled	
98		B - Type			d	116		B - Type			d	120		B - Type	
99		Length			e	116		Length			e	120		Length	
100		Duration			f	116		Duration			f	120		Duration	
101		Pct%			g	116		Pct%			g	120		Pct%	
102		Objectives			h	116		Objectives			h	120		Objectives	
103		Scheduled (week nr)			AA	103		Scheduled			AG	103		Scheduled	
104		C - Type			d	117		C - Type			d	121		C - Type	
105		Length			e	117		Length			e	121		Length	
106		Duration			f	117		Duration			f	121		Duration	
107		Pct%			g	117		Pct%			g	121		Pct%	
108		Objectives			h	117		Objectives			h	121		Objectives	
109		Scheduled (week nr)			AA	109		Scheduled			AG	109		Scheduled	
110		D - Type			d	118		D - Type			d	122		D - Type	
111		Length			e	118		Length			e	122		Length	
112		Duration			f	118		Duration			f	122		Duration	
113		Pct%			g	118		Pct%			g	122		Pct%	
114		Objectives			h	118		Objectives			h	122		Objectives	
115		Scheduled (week nr)			AA	115		Scheduled			AG	115		Scheduled	
116		E - Type			d			E - Type			d			E - Type	
117		Length			e			Length			e			Length	
118		Duration			f			Duration			f			Duration	
119		Pct%			g			Pct%			g			Pct%	
120		Objectives			h			Objectives			h			Objectives	
121		Scheduled (week nr)			AA			Scheduled			AG			Scheduled	
122		F - Type			d			F - Type			d			F - Type	
123		Length			e			Length			e			Length	
124		Duration			f			Duration			f			Duration	
125		Pct%			g			Pct%			g			Pct%	
126		Objectives			h			Objectives			h			Objectives	
127		Scheduled (week nr)			AA			Scheduled			AG			Scheduled	

Figure 16: Sample page – extraction and data entry area for course details of summative assessments.

	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM
127		Scheduled (week nr)			AA			Scheduled			AG			Scheduled	
128															
129			END SUMMATIVE (Offer 1)					END SUMMATIVE (Offer 2)						END SUMMATIVE	
130			BEGIN FORMATIVE (Offer 1)					BEGIN FORMATIVE (Offer 2)						BEGIN FORMATIVE	
131															
132															
133															
134	Formative	A - Type	a	X	1	Examine what it means to be a hea		A - Type		X	1	Examine what it mea		A - Type	
135		Length			2	Demonstrate the range of literac		Length			2	Demonstrate the rai		Length	
136		Duration			3	Demonstrate the basic communic		Duration			3	Demonstrate the be		Duration	
137		Scheduled			4	Describe the professional, legal ai		Scheduled			4	Describe the profess		Scheduled	
138				X	5	Identify principles and practice thi				X	5	Identify principles ai			
139					6	Identify the physical, social, emoti					6	Identify the physical			
140		Targeted Objectives	1,5		7	Apply the knowledge and skills the		Targeted (1,5			7	Apply the knowledge		Targeted Ob 1,5	
141															
142		B - Type	a	X	1	Examine what it means to be a hea		B - Type		X	1	Examine what it mea		B - Type	
143		Length			2	Demonstrate the range of literac		Length			2	Demonstrate the rai		Length	
144		Duration			3	Demonstrate the basic communic		Duration			3	Demonstrate the ba		Duration	
145		Scheduled			4	Describe the professional, legal ai		Scheduled			4	Describe the profess		Scheduled	
146				X	5	Identify principles and practice thi				X	5	Identify principles ai			
147					6	Identify the physical, social, emoti					6	Identify the physical			
148		Targeted Objectives	1,5		7	Apply the knowledge and skills the		Targeted (1,5			7	Apply the knowledge		Targeted Ob 1,5	
149															
150		C - Type		X	1	Examine what it means to be a hea		C - Type		X	1	Examine what it mea		C - Type	
151		Length			2	Demonstrate the range of literac		Length			2	Demonstrate the rai		Length	
152		Duration			3	Demonstrate the basic communic		Duration			3	Demonstrate the be		Duration	
153		Scheduled		X	4	Describe the professional, legal ai		Scheduled		X	4	Describe the profess		Scheduled	
154					5	Identify principles and practice thi					5	Identify principles ai			
155					6	Identify the physical, social, emoti					6	Identify the physical			
156		Targeted Objectives	1,4,7	X	7	Apply the knowledge and skills the		Targeted (1,4,7	X		7	Apply the knowledge		Targeted Ob 1,4,7	
157															
158		D - Type		X	1	Examine what it means to be a hea		D - Type		X	1	Examine what it mea		D - Type	
159		Length		X	2	Demonstrate the range of literac		Length		X	2	Demonstrate the rai		Length	
160		Duration		X	3	Demonstrate the basic communic		Duration		X	3	Demonstrate the be		Duration	
161		Scheduled		X	4	Describe the professional, legal ai		Scheduled		X	4	Describe the profess		Scheduled	
162				X	5	Identify principles and practice thi				X	5	Identify principles ai			
163				X	6	Identify the physical, social, emoti				X	6	Identify the physical			
164		Targeted Objectives	1,2,3,4,5,6,7	X	7	Apply the knowledge and skills the		Targeted (1,2,3,4,5,6	X		7	Apply the knowledge		Targeted Ob 1,2,3,4,5,6,7	
165															
166		E - Type		X	1	Examine what it means to be a hea		E - Type		X	1	Examine what it mea		E - Type	

Figure 17: Sample page – extraction and data entry area for course details of formative assessments and relating each to specific course-level objectives.

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

	Z	AA	AB	AC	AD	AE	AF	AG	AH	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	C
128																					
129		END SUMMATIVE (Offer 1)						END SUMMATIVE (Offer 1)													
130		BEGIN FORMATIVE (Offer 1)						BEGIN FORMATIVE (Offer 1)													
131																					
132																					
133																					
134	A - Type	a	X	1	Examine what it means to be a health professional		A - Type		X												
135	Length			2	Demonstrate the range of literacy skills		Length														
136	Duration			3	Demonstrate the basic communication skills		Duration														
137	Scheduled			4	Describe the professional, legal and ethical responsibilities		Scheduled														
138			X	5	Identify principles and practice of health care				X												
139				6	Identify the physical, social, emotional and cultural needs of patients																
140	Targeted Objectives	1,5		7	Apply the knowledge and skills to practice		Targeted	1,5													
141																					
142	B - Type	a	X	1	Examine what it means to be a health professional		B - Type		X												
143	Length			2	Demonstrate the range of literacy skills		Length														
144	Duration			3	Demonstrate the basic communication skills		Duration														
145	Scheduled			4	Describe the professional, legal and ethical responsibilities		Scheduled														
146			X	5	Identify principles and practice of health care				X												
147				6	Identify the physical, social, emotional and cultural needs of patients																
148	Targeted Objectives	1,5		7	Apply the knowledge and skills to practice		Targeted	1,5													

Figure 18: Sample page – demonstrating how formative assessment details are entered (see Xs to the left) and their extraction as numerical data for later analysis and reporting.

	V	W	X	Y	Z	AA	AB	AC	AD	A
206										
207										
208				Mapping objectives to health care priorities, integrated themes, and domains of practice, with supporting evidence						
209		BE32		Examine what it means to be a health professional in a global environment.						
210				Health care needs and priorities	Evidence / Supporting description					
211		1		Arthritis and musculoskeletal conditions						
212		2		Asthma						
213		3		Cancer control						
214		4		Cardiovascular health						
215		5		Diabetes Mellitus						
216		6		Injury prevention and control						
217		7		Mental health						
218		8		Obesity						
219										
220										
221				Integrating themes	Evidence / Supporting description					
222		1		Safety and quality						
223		2		Population health						
224		3		Cultural competency						
225		4		Evidence-based practice						
226										
227										
228				Domains of practice	Evidence / Supporting description					
229		1		Professional practice						
230		2		Critical thinking and analysis						
231		3		Provision and coordination of care						
232		4		Collaborative and therapeutic practice						
233										
234										
235		BE33		Demonstrate the range of literacies that inform health care and practice.						
236				Health care needs and priorities	Evidence / Supporting description					
237		1		Arthritis and musculoskeletal conditions						
238		2		Asthma						
239		3		Cancer control						
240		4		Cardiovascular health						
241		5		Diabetes Mellitus						
242		6		Injury prevention and control						
243		7		Mental health						
244		8		Obesity						

Figure 19: Sample page – demonstrating how nursing specific details are entered, related to course-level objectives, and rationalization or explanatory text may be provided.

T&L Development Grant Proposal 2011: ‘Clarifying Curriculum Design Requirements: A Curriculum Mapping Tool’

	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK
389																
390																
391																
392																
393				Mapping Program Outcomes to Course Objectives			Course Objectives									
394		PO Nr		Program outcome		professional in a global environment	health care and practice					and team skills required for inter-			requirements which underpin health	
395		1		the Registered Nurse including:		X										
396		2		relevant legislation, regulation and professional standards /codes of practice		X										
397		3		practice												
398		4		contemporary practice relevant to the context of a beginning practitioner					X							
399		5		research approaches used to generate further knowledge and understandings												
400		6		protocols, equipment and techniques appropriately									X			
401		7		practice									X			
402		8		locate, evaluate, manage and use information in a range of contexts												
403		9		knowledge												
404		10		styles, have knowledge of a range of learning strategies, and take responsibility												
405		11		recognises current and future scopes of practice and community needs												
406		12		sustain intellectual interest and critical thinking as a mature professional												
407		13		solve												
408		14		apply strategies to conceptualise problems and formulate a range of solutions												
409		15		individuals and groups												
410		16		needs of individuals and groups												
411		17		address these questions and inform practice												
412		18		evidence-based nursing care												
413		19		positive relationships with the objective of enhancing the health of individuals												
414		20		evaluate and support the learning needs of others within a professional context												
415		21		organisation, planning, influencing and negotiating												
416		22		recognition, negotiate solutions when opinions differ, resolve conflict, recognise												
417		23		contexts and codes of practice												
418		24		delivery												
419		25		of individuals/groups												
420		26		within organisational and management structures												
421		27		innovation, cost effectiveness												
422		28		knowledge to perpetuate or dismantle social inequality with respect to												
423		29		nursing practice and health promotion												
424		30		standards and boundaries												
425		31		display sensitivity to their audience in organising and presenting ideas												
426		32		communicate appropriately with clients, professional colleagues and the public												
427		33		and communication styles												
428		34		communication												

Figure 20: Sample page – demonstrating how nursing specific course-level objectives may be mapped to program-level target outcomes.