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Literature Scan

Social work education, curriculum mapping and educational taxonomies

Part of the project – Enhancing the readiness to practise of newly qualified social workers in Aotearoa, New Zealand: (enhance R2P)

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Executive summary

This literature scan is written to support the first phase of enhance R2P: an Ako Aotearoa funded project focused on developing a professional capabilities framework to clarify the capabilities of newly qualified social workers (NQSWs) and social workers at experienced and advanced levels of practice. The first phase of the project is designed to answer the following question: what is the content of the current New Zealand social work curriculum and how does it relate to the core competencies of the Social Workers' Registration Board (SWRB)? This literature scan is written for the research team, our project participants and the wider stakeholder community of interest. Its aims are twofold: to introduce social work education in Aotearoa New Zealand and to explore the rationale for two aspects of our proposed methodology - *curriculum mapping* and the development of a taxonomy of *Terms for Indexing Social Work Education in Aotearoa New Zealand* (TISWEANZ). Our review is structured into three sections briefly summarised below.

Section one: Introducing social work education in Aotearoa New Zealand

As in many other jurisdictions, social work practice and social work education in Aotearoa New Zealand operate in a highly political and contested terrain. Ongoing government reviews of the mechanisms for social service delivery and a proposed radical reform of the Child, Youth and Family Service include close scrutiny of the roles and capabilities of social workers and the quality of their initial education. There are currently 17 tertiary institutions (nine polytechnics, five universities, two wānanga, and one private tertiary institution) offering 19 recognised social work programmes to over 4000 students each year (SWRB, 2014, 2016). The SWRB, a non-mandatory body for the regulation of social workers, established by the New Zealand government in 2003, currently sets standards for the recognition of social work programmes including a *graduate profile* and a set of *ten core competence standards*. Although several political actors have made recent claims about deficits in the social work curriculum, very little is known, in an empirical sense, about the nature of the social work curriculum in New Zealand.

Section two: Mapping the curriculum

The first phase of the enhance R2P project intends to describe the social work curriculum in Aotearoa New Zealand. Curriculum mapping is an established methodological approach that enables the visual representation of the written or *declared curriculum*. Although this approach can make visible the curriculum as designed, it should not be confused with the *taught curriculum* (the curriculum as presented by tutors to students); or the *learned curriculum* (what the students actually learn). Nonetheless, without a map of the declared curriculum it is impossible to clarify what

learners ought to be learning or to assess possible gaps or redundancies in curricula. Mapping several alternative curricula allows comparisons to be made and patterns to be traced. However, since the curriculum documents of different institutions are likely to use terms to express educational topics in quite different ways, it is important, from a methodological perspective, to develop a standard vocabulary, or taxonomy, that can be used to read across different curricula.

Section three: Taxonomies for curriculum mapping

A taxonomy is a method for arranging things; for sorting things out and putting them in order. Taxonomies can be used to classify and order things or concepts and function as *knowledge organisation systems* or *knowledge organisation structures.* Taxonomies take many forms and the terms used to describe these forms include *controlled vocabulary*, *thesaurus*, *ontology*, *hierarchical taxonomy*, and *faceted taxonomy.* The use of an educational taxonomy can help in the classification of entities, including curriculum documents, in order to ensure consistency in their description and to avoid or reduce ambiguity. The field of medical education has the most extensive literature on the creation of educational taxonomies and a Canadian project called *Terms for Indexing Medical Education* offers some useful lessons for the enhance R2P project.

Since taxonomy creation is fundamentally about knowledge representation, choices made during the taxonomy development process have social, cultural and moral implications. This is especially so with regard to terms expressed in Te Reo Māori that express key educational concepts and indigenous practice models. To ensure the respectful and culturally responsive inclusion of terms in Te Reo Māori, the enhance R2P team will: cross-reference candidate terms to Ngā Upoko Tukutuku (Māori Subject Headings) maintained by the National Library of New Zealand; subject the inclusion of candidate terms to the scrutiny of our tangata whenua research team member; and consult closely with project participants and stakeholders.

1. Introducing social work education in Aotearoa New Zealand

There are potential (and historic) tensions between readiness for professional practice and readiness of graduates of professional programmes to service the (industry) workforce, and Aotearoa New Zealand's history is no different in the endeavour of social work education. A brief account of the historical development of social work education is offered as background to this present project.

Social work in Aotearoa New Zealand appeared early in the 20th century with early proponents favouring selection of those whose personal attributes would be developed by building on their prior experience in teaching and nursing (Beddoe & Deeney, 2012; Beddoe, 2014). Mary Nash (1998) has provided the most comprehensive account of social work education in Aotearoa New Zealand and reports that social work education in the tertiary education sector was inaugurated in 1950 at what is now Victoria University of Wellington (Nash, 2001). By the 1960s the professional association, the Aotearoa New Zealand Association of Social Workers (ANZASW), had aspirations for the intensification of social work education in universities (Ritchie, 1967). Ritchie's prescription for a strong profession was for social workers to complete a four-year undergraduate degree in social sciences, followed by a two-year postgraduate social work programme, then an internship year (Ritchie, 1967, p.11).

Social work education provision flourished in the period 1973-1986 as new degree programmes began at Massey University (in 1976) and Canterbury University (in 1980), and a new diploma was established at the Auckland College of Education (in 1982). While demand for social work education increased, there were many debates about the location and accessibility of programmes. Daniels reported that 14% of social workers held a qualification in 1969 (Daniels, 1973), yet by 1981 another study found that only 12% of social workers held a social work qualification (Rochford & Robb, 1981).

Nash and Munford (2001) outline the role of the NZ Council for Education and Training in the Social Services, which during this time developed requirements for Level A and Level B certificates. This work led to the proliferation of programmes with relatively low entry requirements. The council was later replaced by another body, Te Kaiawhina Ahumahi Industry Training Organisation (TKA), which expanded the base of lower-level qualifications, including a work-based training option where practitioners were not taught but assessed in the workplace (Beddoe, 2014). By the 1990s there was much confusion about standards for social work education (Randal, 1997). In spite of the early aspirations for social work to become a university educated profession, by the 1990s entrants to the

profession could possess anything ranging from no tertiary qualifications at all, a certificate, a degree (in anything at all) or an undergraduate or postgraduate qualification in social work (Nash, 1998; Nash & Munford, 2001). Competency became a proxy for qualifications in the early 1990s when debates about registration based on qualifications could not be resolved (Beddoe & Randal, 1994).

At the turn of the century the tide had turned and a major review of the Department of Child, Youth and Family Services called for the registration of social workers and improvements in qualifications (Brown, 2000). The development of a non-mandatory system of registration for social workers became a political remit of the then Minister of Social Policy (MSP). The ensuing political sponsorship of registration was an outcome of a decade of criticism of public sector social work, reported critically in the Brown report (Brown, 2000). In 2000 the MSP distributed a discussion paper, "Registration for Social Workers", as part of the consultation on establishing a formal system for the registration of social workers and this was generally supported by the main political parties (MSP, 2000). A summary of the findings of the consultation reported that all respondents were in favour of the registration of social workers (MSP, 2001).

The stated aim of registration was to "set and maintain high levels of professionalism and minimum standards of practice; result in increased safety and protection for all stakeholders … and provide a formal mechanism for accountability for the … profession' (MSP, 2001, p.1). While most submissions supported registration, notable reservations addressed the potential exclusion of practitioners who lacked qualifications, especially youth and community workers and Māori social workers. These concerns were to be addressed by improving regional access to qualifying programmes and support to fund social workers' participation, especially for the non-government organisation (NGO) sector.

The impact of social worker registration

The Social Worker Registration Act (2003) came into effect in October 2004. The Act required the Social Workers Registration Board (SWRB) to set a benchmark qualification for registration. The SWRB was guided by the finding in the consultation process that 91% of respondents thought the board should set the entry criteria (MSP, 2001, p.7). However, there had been some debate about whether setting educational standards as entry criteria should be a function of the registration board or of a separate education council established under the same Act (MSP, 2001, p.7). The Education and Practice Standards Committee of the SWRB undertook a rapid consultation process and developed a schedule of current and historical qualifications in social work to enable social workers' qualifications to be assessed for registration. While the short window for the conduct of this work was critiqued by some educators in a sector struggling with the impact of change, the timeframes

were set within the legislation itself (Beddoe, 2007; Beddoe & Duke, 2009). The SWRB was obliged to have systems of benchmarking and recognition in place by 2004.

Social work education remains a contestable site. There is broad agreement that preparatory education should produce graduates with a set of knowledge(s), skills, values and dispositions (Nash, 2001, p.29). However, "just *what* that knowledge set is, *who* determines its features, which dispositions are the *'right'* ones" (Beddoe, 2014, p.22), and how all this is transmitted remains a site of struggle and debate (Nash & Munford, 2001). Over the decade since the inception of registration there has been a broad consensus among academic and professional stakeholders about the content and form of social work degrees. The legislation requires the board to set broad requirements for recognised social work programmes (SWRB, 2015). These are generally not very prescriptive, with the exception of the requirements for field placements. Table 1 outlines the SWRB expectations with regard to *core competence standards* and a *graduate profile*. On examination, the core competence standards align closely with the practice standards adopted by the professional association of social workers in Aotearoa New Zealand (ANZASW, 2015) and reflect fairly universal expectations for social work influenced for example, by the IASSW Global Standards (IASSW, 2004). At present, there are 17 tertiary institutions (nine polytechnics, five universities, two wānanga, and one private tertiary institution) offering 19 SWRB recognised social work programmes to almost 4, 000 students each year (SWRB, 2016).

Table 1: SWRB core competence standards and graduate profile

Core competence standards	Graduate Profile
1. Competence to practice social work with Māori.	1. Demonstrate the ability to work in a bi-cultural context and acknowledge the centrality of Te Tiriti o Waitangi to social work as a profession and in practice.
2. Competence to practise social work with different ethnic and cultural groups in Aotearoa New Zealand.	2. Apply anti-oppressive social work values, knowledge and skills to complex situations to stimulate personal and social change in a range of work and social contexts.
3. Competence to work respectfully and inclusively with diversity and difference in practice.	3. Have the ability to work with individuals, families or whānau, communities and groups from diverse ethnic, cultural and indigenous backgrounds.
4. Competence to promote the	4. Demonstrate resilience and the ability to manage interpersonal

principles of human rights and social and economic justice. Adherence to professional social work ethics. 5. Competence to engage in practice which promotes social change. 6. Competence to understand and articulate social work theories, indigenous practice knowledge, other relevant theories, and social work practice methods and models. 7. Competence to apply critical thinking to inform and communicate professional judgments. 8. Competence to promote empowerment of people and communities to enable positive change. 9. Competence to practice within legal and ethical boundaries of the social work profession. 10. Represents the social work profession with integrity and professionalism.	conflict and challenges that arise in the context of social work practice. 5. Demonstrate knowledge of the origins, purpose and development of Aotearoa New Zealand social work within a global context. 6. Demonstrate professional literacy and numeracy, critically evaluate scholarship, critique and apply diverse knowledge and research to social work practice. 7. Demonstrate an ability to think critically, and effectively analyse, synthesise and apply information. 8. Demonstrate the ability to work autonomously and make independent judgments from a well-informed social work position. 9. Demonstrate the ability to work collaboratively with others in multi-disciplinary teams, organizations and communities. 10. Demonstrate a critical reflective approach to individual social work practice through supervision, peer review and self-evaluation. 11. Demonstrate an ability to recognize own learning needs and participates in continuing professional development. 12. Demonstrate an ability to effectively utilise ongoing professional supervision and a commitment to continuing professional development. 13. Demonstrate understanding of, and ability to, integrate sustainability and contemporary social, political, psychological, economic, legal, environmental, cultural and indigenous issues within Aotearoa New Zealand and internationally into both social work as a profession and practice. 14. Demonstrate an awareness of the level of skills, knowledge, information, attributes and abilities of a new social work graduate.

(Social Workers Registration Board, 2015)

Critique of social work education

Social work education has been advised to avoid complacency about the extent to which the profession sets its standards (Beddoe, 2014) and thus influences curriculum and other aspects of social work education. Social work education has attracted some criticism in recent years. A former Minister of Social Development foreshadowed criticism of the readiness to practise of social workers in a speech at the ten-year anniversary of the Social Worker Registration Act (Bennett, 11 November, 2014). This criticism was echoed by the Commissioner for Children in 2015 (Radio NZ, 2 April, 2015) who questioned social work graduates' knowledge of family violence and their preparedness for work in child welfare services.

The terms of reference of a panel, established to conduct a review of the Child, Youth and family service in April 2015, included the task to review "the professional knowledge, skills and expertise required by Child, Youth and Family… and implications of this for providers of training, development and contracted services" (Ministry of Social Development, 2015a). The final report of the expert panel however, made few mentions of "professional knowledge, skills and expertise" or of providers of training. The interim report had stated that "There is currently fragmentation at a national level in social worker qualification and training, which is reflected in a lack of consistent practice within CYF" (Ministry of Social Development, 2015a, p. 13). However, neither fragmentation" or "lack of consistent practice" are defined, nor is evidence of these problems provided. The final report describes a requirement for "new knowledge, competencies and skill requirements for social workers associated with the move towards multi-disciplinary, trauma-informed and evidence-based practice that builds children's sense of belonging and identity, and recognises criminogenic factors and drivers of offending behaviour" (Modernising Child, Youth and Family Expert Panel, 2015b, p. 29). Again, no evidence is offered as to why this new knowledge is required nor is there any information about what is offered in current qualifying programmes. In a climate of critique a programme of research is timely, in order to provide informed responses to such commentary.

Alongside criticism of its outcomes, social work education continues to face some significant challenges (Beddoe, 2014). Social work education in Aotearoa New Zealand is funded at a generic social sciences rate[1] which does not reflect the level of resources required to cover the costs of intensive skills teaching and field education. The proliferation of programmes and increases in student numbers (since a low point in 2006) mean that there is continuing pressure on teaching

[1] For example, social work is funded at $6,014 per student. Nursing, which sits in a different category of funding, receives $10,338 per student. Teaching is also more highly funded at $8,569 per student. (http://www.tec.govt.nz/Resource-Centre/Rates-categories-and-classifications/SAC-Rates/2016-SAC-funding-rates/)

institutions to locate good quality fieldwork placements (Hay, Ballantyne & Brown, 2014). While schools of social work are creative in finding placements for students, this is stressful and resource intensive for both tertiary providers and the wider sector (Hay & Brown, 2015). Further, current government social service and Child, Youth and Family Service reforms are likely to create new challenges for tertiary providers to ensure graduate capabilities meet employer expectations.

Social work education is under-researched in Aotearoa New Zealand and, currently, little is known about the readiness to practise of social workers. Nor is there a baseline of information about the overall social work workforce, including the academic workforce. It is thus timely for a programme of research to begin so as to clarify the capabilities of newly qualified social workers (NQSWs) and social workers at experienced, advanced and expert levels of practice. At present, while allusions have been made to a gap between graduate capabilities/ knowledge and the requirements to service a changing workforce, little has been done to acquire the evidence on which to base necessary changes.

The remainder of this document outlines the scan of the relevant literature on curriculum mapping and the use of taxonomies which underpin the methodological approach for this phase of the project.

2. Mapping the curriculum

2.1 Introduction

The first phase of the enhanceR2P study plans to map the topics taught in the Aotearoa New Zealand social work curriculum by analysing the curriculum documents of the fourteen institutions participating in the study. This will enable us to characterise the differences and elements in common across programmes. Curricula may be broadly defined as "educational strategies, course content, learning outcomes, educational experiences, assessment, the educational environment and the individual students' learning style, personal timetable and programme of work" (Harden, 2001, p.123). In a social work programme the curriculum also includes professional socialisation and experiential or work-integrated learning (Watts & Hodgson, 2015). For our study we are especially interested in the learning outcomes and topics in the curricula of the participating institutions.

Over the past decade there has been an increasing interest within higher education in exploring the alignment between curriculum design, implementation, intended and actual learning outcomes and graduate attributes (Watts & Hodgson, 2015). Curriculum mapping is a tool that can assist with this exploration and mapping has been implemented across a range of disciplines in the tertiary context including information systems, medicine, education, public health and nursing (Buchanan, Webb, Kavanagh, Houk Harris, & Tingelstad, 2015). That said, minimal literature is available on curriculum mapping within the social work domain (Watts & Hodgson, 2015). In order to better understand the curriculum of participating social work programmes in this project a process of mapping will be employed. The following review explains the practice of curriculum mapping and the associated benefits and challenges of this activity.

2.2 What is curriculum mapping?

> *Mapping is a visual representation of information and can be in the form of tables, flow charts or textual information. The analogy to geographic mapping highlights the ability of maps in whatever format or discipline, to provide the links that connect one piece of information to another. Maps also allow the 'reader' to identify similarities and differences between materials. (Ervin, Carter & Robinson, 2013, p.310)*

Social work curricula in tertiary institutions are intentionally written and implemented by teaching staff. Curricula may, however, also follow an evolutionary path as the written material becomes interpreted and taught in ways not initially intended. There may be a significant difference between the official, or *declared curriculum* and the actual curriculum taught in the classroom because

educators, working autonomously, make learning and teaching choices based on their knowledge, experiences, and the realities of their classroom (or online) environments (Cuban, 1993). Both Harden (2001) and Prideaux (2003) take this idea further and differentiate three levels of the curriculum: the *declared curriculum* (what course designers intend students to learn), the *taught curriculum* (or the curriculum as presented by tutors to students), and the *learned curriculum* (or what the student actually learns).

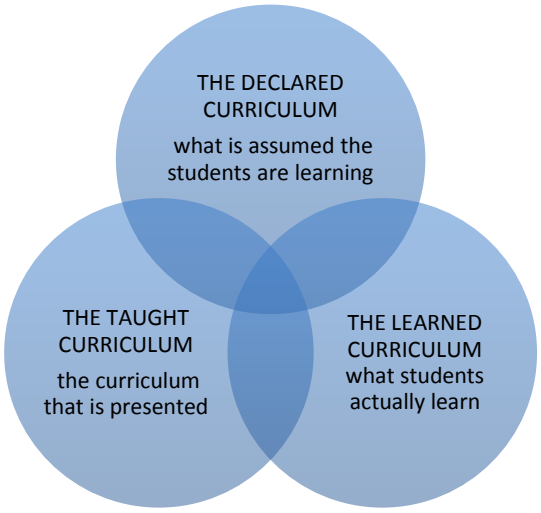

Figure 1 The three curricula (Harden 2001, p.124)

Curriculum mapping is a tool that helps ensure congruence between these three curriculum levels by making the declared curriculum visible and focussing on both the *what* and the *when* of teaching practice. Simply speaking, maps enable the identification of similarities and differences between courses and allow for the identification of gaps and redundancies both within a single curriculum and between multiple curricula in different institutions (Ervin, Carter, & Robinson, 2013). Curriculum maps, then, are a process of recording what is to be taught as well as the outcomes of a programme (Crawford Burns, 2001). The emphasis is on the declared curriculum and maps may serve as both an instrument and a procedure for determining what the curriculum is and how the curriculum can be monitored (O'Malley, 1982 cited in Crawford Burns, 2001, p.1). Mapping is systematic with the intention of evaluating cohesion, sequencing and the achievement of goals or outcomes in the curriculum (Buchanan et al., 2015).

As a visual tool a curriculum map is a useful way of conveying to stakeholders the expected outcomes of student learning. Stakeholders with interests in curricula may include students, educators, other staff, industry representatives, regulators and professional bodies. These stakeholders may be interested in understanding the declared outcomes of learning and comparing this with their own needs and expectations. In an accreditation environment, such as social work

education in Aotearoa New Zealand, curriculum mapping may also enable comparison between curricula in terms of their learning outcomes, topics and how these are expected to be delivered and met in respect of specified standards. The maps may therefore be used as auditing and planning tools to align learning outcomes with other required standards such as competency measures (Shilling, 2013).

2.3 The process of mapping

Undertaking the curriculum mapping exercise may occur in different ways. How this is completed is often dependant on the purpose of the exercise, its intended audience and available resources. Whole of curriculum mapping, or comparisons between curricula, may draw on existing documents that outline learning outcomes, topics, assessment processes and graduate attributes (Watts & Hodgson 2015). Harden (2001) suggests that a curriculum map may incorporate a number of components including: the course materials, learning outcomes, learning resources and opportunities, timetables, the curriculum sequence and assessment elements. Data may then be collected from a range of sources such as course syllabi, catalogues, teaching materials or course learning outcome statements (Buchanan et al., 2015). The mapping exercise might also focus on different aspects of a programme, for example diversity in a nursing qualification (Narayanasamy, Jurgens, Narayanasamy, Guo, 2012), or take a whole-of-curriculum approach (Watts & Hodgson, 2015).

Developing common constructs that can be applied across the documents may be necessary and require reviews of relevant literature and existing curriculum materials to enable agreement on meanings and application (Duffy, 2014; Watts & Hodgson, 2015). One way to approach the development of common constructs is through the creation of a controlled vocabulary, or taxonomy, of educational terms (Willett, Marshall, Broudo, & Clarke, 2007). The use of a taxonomy of terms can support consistency across the dataset. Once key terms have been determined then the content analysis process can begin and this may require the development and utilisation of tools such as databases and spreadsheets so that the data is coded reliably and in a manner able to be replicated. These tools may also enable visual representations highlighting the points in a curriculum where key concepts are taught. Gaps, inconsistencies and similarities can also become more apparent (Watts & Hodgson, 2015). A curriculum map may be presented as a concept map, tables, flowcharts, a matrix or a grid (Buchanan et al., 2015; Ervin et al., 2013). Mapping the curriculum enables a birds-eye view of what is intended to be taught and is important to ensure that “unplanned and incremental changes” at the level of individual courses do not undermine the integrity of the curriculum design as a whole, at the level of programme or qualification (Watts & Hodgson, 2015, p.4).

2.4 Benefits and challenges of curriculum mapping

As highlighted above, the benefits and challenges of curriculum mapping depend on the purpose of the exercise. Most of the literature discusses curriculum mapping as an important administrative or developmental tool used to map and monitor dynamic changes in a single school or tertiary education curriculum. In other literature, curriculum mapping is used as a methodological tool for educational researchers to take a snapshot of a curriculum, or of several curricula. The enhance R2P project proposes to use curriculum mapping in the latter sense. However, since we believe there may be wider interest in the more developmental uses of curriculum mapping, we include discussion of this below.

Curriculum mapping has been identified as an "effective planning tool that can help set up short-term and long-term instructional goals, eliminate gaps and unproductive repetitions in the curriculum, and provide better alignment of curriculum with state standards" (Shilling, 2013, p.26). The maps enable transparency of the intended curriculum and can be utilised as a communication tool for internal and external stakeholders (Buchanan et al., 2015). Mapping also enables educators to ensure alignment with external standards or benchmarks (Crawford Burns, 2001) assisting with accountability so that required standards, topics and measures may be met. It also allows teaching staff to become active participants in evaluating and improving current practices giving them a greater sense of ownership and autonomy over the curriculum (Crawford Burns, 2001). Further, the map can act as a safety net and a monitoring device as it "is designed to highlight areas for development in an existing and developed curriculum by providing guidance on where to target resources and energy for improvement" (Watts & Hodgson, 2015, p.13).

Not all educators, however, may see the relevance or importance of curriculum mapping. Some teaching staff may not support the mapping tool, particularly if it has been imposed by management, or they have had limited training in mapping, or if there is inconsistent support and leadership around the mapping process (Shilling, 2013). As a high-level, content-based activity, mapping is unable to sufficiently convey the detailed skills and capabilities expected or required of students within, or external to, the classroom (Duffy, 2014). Mapping can also be a time-consuming activity and educators may have concerns around the need for undertaking such a task if they cannot see its merit or applicability, or do not have the time available in their workload (Ervin et al., 2013).

Further, Ervin and colleagues (2013), referring to the Australian and Canadian contexts, indicate that while competency based training has become an entrenched educational paradigm "there is a lack of clearly outlined and replicable mapping processes [which] limit the development of valid and

reliable [mapping] tools" (p.310). In their literature review they identified key processes utilised within curriculum mapping. These included the identification of competencies, the development of tools, the trialling of processes, curriculum map refinement, retrial and the completion process (Ervin et al., 2013, p.312). They also outlined several problems that may arise when mapping competencies to curriculum content. These problems were categorised as: the interpretation of skill/competency, philosophical interpretation, difficulty determining the proficiency level, the background of the rater [researcher], and the relationships between competencies (Ervin et al., 2013, p. 213). Reducing the impact of each of these potential problem areas is critical if the validity and reliability of the process is to be upheld. Drawing on other examples of curriculum mapping, they identified ways in which the potential problems can be alleviated.

The individual researcher mapping the skill or competency may address concerns around interpretation by documenting the definition of the term or concept and clarifying this with other 'mappers' (Sumsion & Goodfellow, 2004). Philosophical interpretation refers to challenges associated with interpreting value-based concepts such as social justice or cultural sensitivity. Clearly articulated reasoning and definitions for such concepts (such as may be provided by a taxonomy or thesaurus) are again critical, especially so as to limit bias (Ervin et al., 2013). If the mapping process seeks to include data about when a competency should have been achieved or learned, or when the learner can be expected to be proficient, this may present challenges during the mapping process; especially when mapping assessment components. Assigning a rating of when a competency is achieved may be difficult as it does not take into account the ongoing learning of the student, or that content from across the whole curriculum may contribute to the achievement of one specific competency. It may, therefore, not always be possible to know when a competency has been achieved (Stoof, Martens, & Van Merrienboer, 2007; Sumsion & Goodfellow, 2004). The disciplinary background or knowledge base of the individual doing the mapping may also pose challenges as their interpretation of competencies or concepts may affect the mapping exercise. Again, clarifying and defining terms is essential (Ervin et al., 2013). Finally, competency standards are often interconnected or build upon one another and therefore the individuals undertaking the mapping need to understand these interrelationships so that they can make reliable decisions throughout the mapping exercise (Stoof, Martens, & Van Merrienboer, 2007).

Whilst not all of these issues are relevant to the mapping exercise proposed by the enhance R2P project, it is important that we are aware of, and proactive in addressing, any potential challenges in order to minimise bias and ensure sufficient objectivity, reliability and validity throughout the research process.

3. Taxonomies for curriculum mapping

3.1 Introduction

Analysing the curriculum documents, and, in particular, the course descriptors of the participating institutions, will enable the enhance R2P research team to map topics and characterise the elements in common across programmes. However, in order to describe a variety of curricula in a consistent fashion we need to address the problem that different terms can be used in different curricula to express the same concept, and the same term can be used to express different concepts. Indeed, given that courses within programmes are usually designed by different individuals, there is no guarantee that topics are expressed in a consistent manner within a single programme: to paraphrase the METRO project (Haig et al., 2005) social work education is a discipline without an agreed language to describe itself. One well established way to tackle this problem is to use a standardised format, such as a controlled vocabulary or taxonomy, to analyse key topics (Hedden, 2008; Lambe, 2007). The remainder of this section will introduce the idea of taxonomies, consider their application in educational domains, and offer a brief reflection on the philosophical issues associated with the creation of such knowledge maps.

3.2 What is a taxonomy? Defining our terms

The word taxonomy is derived from two Greek stems: *taxis* meaning *arrangement*, and *nomia* meaning *method*. Lambe (2007) suggests that the term taxonomy concerns "the rule or conventions of order or arrangement" (p.4). Put simply, a taxonomy is a method for arranging things, for sorting things out and for putting them in order. Amongst the most familiar taxonomies are the Dewey Decimal Classification (DDC) system used by librarians to classify books according to their subject matter, and the hierarchical taxonomies used by biologists (most famously, the 18thcentury botanist Carl Linnaeus) to classify organisms into species. However, books and biological entities do not exhaust the domains of application of taxonomies and they can be used to bring order to all kinds of entities, both physical and conceptual.

Hedden (2016) suggests that there are two common usages of the term taxonomy: one refers to the older biological, hierarchical organisation of entities and ideas into a classical tree type structure; the other more modern and inclusive meaning refers to any controlled vocabulary of terms used to organise a particular subject domain for a specific purpose. Used in this broader sense a taxonomy can be considered as a *knowledge organisation system* or *knowledge organisation structure* (Hedden, 2016). There are many different terms used to refer to different types of taxonomies or controlled vocabularies and their usage is not entirely consistent across the literature. In order to

help readers navigate the literature we offer below some definitions based on Lambe (2007) and Hedden (2016).

Controlled vocabulary

A controlled vocabulary is a broad and inclusive term for any kind of knowledge organisation system. At the very minimum a controlled vocabulary is a simple list of words or terms used for a specialised purpose. According to Hedden (2016, p.3) the purpose of a controlled vocabulary is to "ensure consistency in the application of index terms, tags, or labels to avoid ambiguity". The vocabulary is controlled in the sense that only the terms identified are used for the vocabulary's purpose and criteria are established to control how changes to the vocabulary can occur: a new term is included "only when it clearly describes a commonly understood category of content for which there is no current term" (Lambe, 2007, p.6).

Thesaurus

Most people are familiar with a thesaurus as a kind of dictionary that identifies synonyms for a list of words. In the context of information science, a thesaurus is similar in that it identifies synonyms, and other equivalencies, for each item in a controlled vocabulary. There are three types of relationships that can exist between the terms included in a thesaurus: *hierarchical* (broader term/narrower term), *associative* (related term), and *equivalence* (use/used for) (Hedden, 2010). For example, the UK Social Care Institute for Excellence (SCIE 2016) uses a thesaurus to index items in Social Care Online (an online database of information on all aspects of social work and social care in the UK context). Within the SCIE thesaurus *open adoption* is included as a narrower term for *adoption*; *probation* is considered as a related term for *offenders*; and *assisted reproduction* is the preferred term to be used for *assisted conception* or *in vitro fertilization* (SCIE, 2016).

Ontology

If a thesaurus is a richer and more complex type of controlled vocabulary, an ontology is more complex still. An ontology is an attempt to offer a comprehensive map of the complex set of relationships between terms in a given knowledge domain or subject area. The relationships between terms in an ontology go beyond broader/narrower and related and can include any number of other relationships relevant to the domain being mapped such as: owns/belongs to; has members/is a member of; produces/is produced by.

Hierarchical taxonomy

As mentioned above the sorts of taxonomies with which most people are familiar are the classical hierarchical taxonomies such as the Linnaean taxonomy of biological organisms or the Dewey

Decimal Classification system for classifying books. Hierarchical taxonomies are sometimes referred to as *trees* because they typically consist of a main trunk with various branches. Hierarchical taxonomies work well in highly structured and explicit knowledge domains where there are clear and immutable relationships between the terms and the entities being mapped: such as the evolutionary development of species or human anatomical structures (Kwasnik, 1999). However, they are less useful in more complex or contested knowledge domains. One of the problems with using hierarchical taxonomies in more complex knowledge domains is that the terms included usually have *monohierarchical* relationships with one other: in other words each term has only one *parent term* (unless it is a top-level term), and a number of subordinate or *child terms.* As a consequence, the entities being indexed (such as a book indexed in a library using the Dewey Decimal System) can appear at only one point in the taxonomy (in our library example, on only one shelf of the library). Some hierarchical taxonomies deal with this issue by using a *polyhierarchical* structure (Lambe, 2007) whereby a single term can have multiple parent terms reflecting more complex relationships between the entities described. The US National Library of Medicine's (2016) Medical Subject Headings (MeSH) is an example of a polyhierarchical taxonomy. There are, however, alternative ways of dealing with the problem of classifying items under more than one category and the use of a faceted taxonomy is one of them.

Faceted taxonomy

Whilst polyhierarchical taxonomies are developed to enable hierarchical taxonomies to deal with exceptions to the rule, faceted taxonomies recognise that entities have multiple attributes and that classifying them by different attributes can offer a richer way of describing each entity. Each facet of the taxonomy operates like a separate mini taxonomy and so, for example, a taxonomy developed to map the attributes of an educational programme could index courses with a different facet for course title, topics included, educational level, assessment methods, competence standards and so on. Some of the facets can be simple flat lists, others may be more complex and nested in nature. Lambe (2007) suggests that "Good faceted taxonomies base their facets on important and easily recognisable attributes of the content being analysed" (p.37). The design of faceted taxonomies makes them easier to update and therefore useful in domains where knowledge is expanding. It is highly likely that the *Terms for Indexing Social Work Education in Aotearoa New Zealand* (TISWEANZ) produced by the enhance R2P project will take the form of a faceted taxonomy.

3.3 The use of taxonomies in educational subject domain

Our literature search uncovered several published articles exploring the topic of taxonomies in social work. For example, Valentijn et al. (2015) undertook a thematic analysis and a Delphi study to create a taxonomy of 59 terms elaborating the six dimensions of the Rainbow Model of Integrated Care. Maramaldi et al. (2014) used participatory action research to develop a taxonomy of the skills and competencies of social workers working in interdisciplinary teams. Evenboer, Huyghen, Tuinstra, Reijneveld, and Knorth (2012) conducted a systematic review identifying 13 different taxonomies used to classify interventions in health care, family care, and child and youth care. However, none of the taxonomies discussed were intended to be used as a way of indexing educational content, nor do they have a direct bearing on curriculum mapping. Most of the social work education articles exploring educational taxonomies were discussions of different applications of Bloom's taxonomy of learning objectives (Postle, 2009; Teater, 2011; Vitali, 2011). Only one article discussed taxonomies and controlled vocabularies for indexing social work educational content, but here the emphasis was on indexing a collection of images for use in social work education and the article focused on the use of folksonomies (or the user-centric tagging of content) (Daly & Ballantyne, 2009). In order to obtain an appraisal of the use of taxonomies in the context of curriculum mapping we must turn to the subject domain with the most fully developed literature on educational taxonomies: medical education.

Perhaps because of the extensive use of taxonomies, thesauri and ontologies throughout medicine as a discipline there is wide interest in the use of controlled vocabularies and other data standards in medical education, especially in relation to the process of curriculum mapping (Blaum, Jarczweski, Balzer, Stötzner, & Ahlers, 2013; Ellaway, Albright, Smothers, Cameron, & Willett, 2014; Komenda, Schwarz, Švancara, Vaitsis, Zary, & Dušek, 2015; Willett, 2008). Blaum et al. (2013) conducted a systematic review of taxonomies (and ontologies) that might be suitable for classifying medical education. The authors identified fourteen controlled vocabularies and classified them into one of three types: (a) vocabularies for indexing learning methods and processes; (b) vocabularies for indexing teaching and learning topics; and (c) vocabularies for administration and documentation. The review identified the UK METRO taxonomy as an example of a taxonomy for describing learning methods and processes, and the Canadian TIME taxonomy as a vocabulary for describing teaching and learning topics.

The UK Medical Education Taxonomy Research Organisation (METRO) project was one of the earliest attempts to develop a controlled vocabulary for medical education (Ellaway, Haig, & Dozier, 2003; Haig et al., 2005; Haig, Ellaway, Dozier, Liu, & McKendree, 2004). The METRO project team noted

that “Medical education is a discipline without an agreed language to describe itself” (Haig et al., 2005, p.155) and set about developing the METRO taxonomy to provide a comprehensive description of the concepts, processes and procedures used in UK undergraduate, postgraduate and continuing professional education. Part of the rationale for this project was related to the rise of virtual learning environments and the perceived need to catalogue a proliferation of electronic learning resources. There were two phases to the METRO project with the initial phase focusing on scoping issues associated with creating and maintaining the vocabulary (Ellaway et al., 2003; Haig et al., 2004), and the second phase focusing on the development of terms to describe assessment (Haig et al., 2005).

The METRO project team decided to create their medical education taxonomy by drawing on terms used in two more generic pre-existing vocabularies: a generic medical taxonomy designed to index research literature (the US National Library of Medicine’s Medical Subject Headings: MeSH); and a generic educational taxonomy (the British Education Thesaurus: BET). The METRO topics for describing medical education have not been developed since 2005 and are no longer available today (Blaum et al., 2013). The phase two descriptors for assessment in medical education remain in use, but the terms describe educational processes and methods rather than educational content (Blaum et al., 2013; Komenda et al., 2015).

In Canada, another medical education taxonomy project had a more specific focus on terms for describing the topics of educational content and made an explicit link to curriculum mapping. The development of Topics for Indexing Medical Education (TIME), which began in 2006, was driven by the move to outcome-based medical education. In this context, electronic curriculum maps were considered to have considerable potential to make visible the contribution of particular curriculum elements for the achievement of broader educational outcomes and the competencies or capabilities of graduates at the end of their programme of study (Willett, Marshall, Broudo, & Clarke, 2007). Thus, according to Willett et al. (2007), allowing “learning to be focused and its relevance to be clearly seen” (p.655).

The purpose of TIME was to act as a web-based content index for the creation of curriculum maps, making explicit the relationship of content to multiple outcome frameworks (Willett et al., 2007). The fact that TIME was openly available to all medical schools meant that it provided a common language, allowing medical curricula to be compared and contrasted. In addition, Willett et al. (2007) argued that TIME could assist with: curriculum development and evaluation; curriculum searching; the detection of curriculum gaps and unintentional redundancies; the sharing of educational content; and quality assurance.

The developers of TIME made the following four assumptions about the nature of the medical curriculum and outcomes based frameworks: (1) that any outcome had particular content areas, areas of expertise or *topics* that had to be learned to achieve the outcome; (2) that broad topic areas could be subdivided into sub topics and so outcomes could be "deconstructed into a hierarchy of topics" (Willett et al.,2007, p.656); (3) that any individual topic may relate to more than one broader topic and one or more outcome; (4) that the overall pool of topics across Canadian medical schools was highly similar and that broad topics at the top of the pool could be related to any outcome framework. TIME is a polyhierarchical taxonomy but because it is topic based it can be used to analyse any curriculum whether its pedagogical design is subject-based, problem-based or of any other design. The authors compare TIME to the index at the back of a book where, irrespective of the table of contents or the structure of the chapters, the book can be searched by topic (Willett et al., 2007). The TIME approach to taxonomy development is the closest to the intentions of enhance R2P project and has informed our thinking about TISWEANZ.

3.4 Classification, knowledge and the disciplinary community

A taxonomy is a special kind of classification scheme (Lambe, 2007) and, like other classification schemes, its creation and use are not neutral but have particular social, cultural and moral implications (Bowker & Star, 1999). When we apply a taxonomic approach to an educational subject domain in order to identify and classify topics taught in a curriculum, we are involved in a process of knowledge representation. A taxonomy created to classify topics taught in the New Zealand social work curriculum is an attempt to "enable the representation of entities and relationships in structures that reflect knowledge of the domain being classified" (Kwasnick, 1999, p.22).

Up to this point we have been discussing the development of taxonomies as if this was a straightforward, technical and rational activity that simply required a subject matter expert to sit down with a taxonomy specialist and map out the relevant knowledge domain. We only need to remind ourselves that what is being mapped is knowledge, to realise that this assumption is likely to be problematic. Classical scientific taxonomists believed they were discovering the essential attributes of entities and mapping out the unseen underlying structures of an already ordered universe. Perhaps some taxonomists still believe this to be the case, but in modern times even hard scientists have issues with that perspective (Kwasnick, 1999). In the context of a social science subject domain, such as social work, ideas about universal knowledge and the essential characteristics of social entities are even more deeply contested (see, for example, Benton & Craib, 2011; Crotty, 1998).

It is not just inherently problematic to classify complex social entities, but there are different and competing worldviews and cultural perspectives on what the relevant entities are, and what we might be able to know about them. Many social work programmes in Aotearoa New Zealand claim to be offering bicultural approaches to social work education, and all include indigenous concepts, practice models and approaches as part of their commitment to Te Tiriti of Waitangi and to the SWRB core competence standard *competence to practise social work with Māori*. Therefore, any taxonomy of educational topics will include terms in Te Reo Māori and must ensure they are included and applied in a culturally responsive fashion. In other words, a social work education taxonomy that is fit for purpose in Aotearoa New Zealand cannot simply import a product developed in a primarily Western social work context (such as the UK Social Care Online thesaurus) but must be founded on an appreciative understanding of the knowledge, concepts and terms used within this particular cultural context and social work community of practice. (This does not rule out reference to other products to cross-check terms and their relationships, but it does mean that final agreement must come from within our own community).

The implications of a more nuanced social, ecological and constructivist perspective on knowledge development are acknowledged in the field of information science and taxonomy development. In order to remain relevant, information scientists must create information systems, and therefore taxonomies, that reflect particular discourse communities. Or, as Hjørland and Albrechtsen (1995) put it:

> the formation of knowledge rests on a dialectical relationship between a community and its members, a dialectic that is mediated by language and influenced by the history of the specific discipline. Writers in a disciplinary community are part of a discourse tradition and are accountable to the discipline's past, to its shared concerns, and shared knowledge. (p.407)

This, more collectivist, perspective on the functioning of discourse or epistemic communities emphasises that "different discourse communities develop their own terminology, meanings and relevance criteria" (Hjørland, 2012, p.302) and that therefore "classification should be tailored towards different domains, epistemic communities and user groups" (p.303). This *domain analysis* perspective highlights the interpretive nature of the classification process and the fundamental need for contextual knowledge.

As highlighted above, within the social work education community in Aotearoa New Zealand there is more than one worldview and epistemological perspective to consider. It is not the intention of this

project to develop a taxonomy that reflects Te Ao Māori in its deepest sense, or to fully represent indigenous ways of knowing or kaupapa Māori pedagogy. That could only occur in a taxonomy that was expressed entirely in Te Reo Māori and led by tangata whenua researchers. What we do intend to do is to include those terms in Te Reo Māori that express key educational concepts and indigenous practice models included in the curriculum documents of our participating social work programmes. We will ensure that our inclusion of terms in Te Reo Māori is respectful and culturally responsive by: cross-referencing terms to Ngā Upoko Tukutuku (Māori Subject Headings) maintained by the National Library of New Zealand; subjecting the inclusion of candidate terms to the scrutiny of our tangata whenua research team member; and consulting closely with project participants and stakeholders. Library and information science professionals in Aotearoa New Zealand are acutely conscious of the need to develop information science products – like taxonomies – in a manner that reflects the bicultural nature of Aotearoa New Zealand. Gaston, Field, Calvert and Lilley (2016) describe the inclusive aspiration of this approach with the following whakatauaki:

> E kore e taea e te whenu kotahi ki te raranga i te whāriki kia mōhio tātou ki ā tātou. Mā te mahi tahi ō ngā whenu, mā te mahi tahi ō ngā kairaranga, ka oti tēnei whāriki.
>
> The tapestry of understanding cannot be woven by one strand alone. Only by the working together of strands and the working together of weavers will such a tapestry be completed.

Conclusion

This brief overview of the literature aimed to orient the team, our research participants and the wider stakeholder community to the first phase of the enhance R2P project. This phase has the current social work curriculum as the focus of our attention and, in our review, we offered a brief history of social work education in Aotearoa New Zealand and identified some current issues. We then went on to explore two related components of our methodological approach to exploring the curriculum: *curriculum mapping* and the development of a taxonomy of *Terms for Indexing Social Work Education in Aotearoa New Zealand* (TISWEANZ). Both of these components will help the team to articulate and analyse the *declared* curriculum or what it is intended that students are learning. This approach will ensure a rigorous and systematic approach to making the Aotearoa New Zealand curriculum visible, allowing the team to trace patterns and illuminate similarities and differences between the curricula of participating institutions. We also consider that the development of curriculum maps and the taxonomy of TISWEANZ may well have a value beyond the life of project and could be further developed by social work educators, students, employers and other

stakeholders as tools to enable collaboration, content sharing and curriculum innovation and improvement.

However, we acknowledge the limitations of a focus on the *declared* curriculum. Along with Harden (2001) and Prideaux (2003) the enhance R2P team recognise that, although the declared curriculum reflects the intentions of curriculum designers there is a difference between the curriculum as intended and what Harden (2001) has described as the *taught curriculum* (the curriculum as presented by tutors to students), and the *learned curriculum* (or what the student actually learns). Although it will be difficult to obtain a deep understanding of the latter two aspects of the curriculum, in order to gain insights into these alternative perspectives, the team plans to conduct focus groups with students, and with social work educators, in a sample of our participating institutions.

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