Curriculum mapping in higher education: a case study and proposed content scope and sequence mapping tool

Article *in* Journal of Further and Higher Education · March 2015
DOI: 10.1080/0309877X.2014.1000278

1 author:

Sousan Arafeh
Southern Connecticut State University
22 PUBLICATIONS **381** CITATIONS

SEE PROFILE

Journal of Further and Higher Education, 2015
http://dx.doi.org/10.1080/0309877X.2014.1000278

Routledge
Taylor & Francis Group

Curriculum mapping in higher education: a case study and proposed content scope and sequence mapping tool

Sousan Arafeh*

Department of Educational Leadership and Policy Studies, Southern Connecticut State University, New Haven, CT, USA

(*Received 10 January 2014; accepted 20 July 2014*)

Best practice in curriculum development and implementation requires that discipline-based standards or requirements embody both curricular and programme scopes and sequences. Ensuring these are present and aligned in course/programme content, activities and assessments to support student success requires formalised and systematised review and development processes. These processes are not always in play in higher education, however. Using a descriptive qualitative case study strategy, this article shares how policy outcomes within intermediate and superintendent certification, sixth-year and Ed.D. doctoral courses and programmes at a state university were reviewed, mapped and assessed using an evidence-based curriculum analysis model and tool that mapped standards and outcomes from course syllabus data. Strengths and weaknesses of this approach are discussed and it is suggested that the field might benefit from a curriculum mapping and analysis method that also considers content coverage. A Course-Level Content Scope and Sequence Mapping Tool, developed to map *content* scope and sequence alongside standards or outcomes mapping, is presented for consideration and testing. The ability to assess and improve curriculum is only as good as the conceptual frameworks, methods and tools available. This critical case study is one effort to advance the field by drawing attention to the importance of curricular content mapping. The study should be of interest to higher education staff, researchers and accreditors concerned with postsecondary programmes and their curricular scope and sequence coherence, quality and improvement.

Keywords: Curriculum; curriculum mapping; curriculum mapping tool; higher education; programme coherence; curricular scope and sequence; curricular content; educational leadership; policy; content; content mapping

Introduction

Best practice in curriculum development and implementation requires that both curricular and programme scopes and sequences embody discipline-based

*Email: arafehs1@southernct.edu

standards or requirements. Ensuring these are present and aligned in course and programme content, activities and assessments to support student success requires formalised and systematised curriculum review and development processes. Yet these processes are not always at play in higher education.

According to Hansen, 'there is regretfully little research on how exactly faculty go about designing their courses' (2011, 12). Yet, in both K-12 and higher education, increased attention is being paid to tools and processes for 'curriculum mapping' and 'curriculum alignment' as data-based ways to visualise curricular goals, scopes and sequences, and outcomes – often for accountability and accreditation purposes (e.g. DeLuca and Bellara 2013; Oliver et al. 2010; Perlin 2011). These methods and tools have the added potential of supporting participant collaboration in curriculum development and assessment (Bester and de Graaff 2012; Cuevas and Feit 2011; Cuevas, Matveev, and Feit 2009; Cuevas, Matveev, and Miller 2010; Jacobs 2004; Orr et al. 2012; Uchiyama and Radin 2009; Udelhofen 2005; Veltri et al. 2011).

In what follows, a descriptive qualitative case study detailing a curriculum/programme review and analysis process undertaken within an urban state university's Educational Leadership and Policy Studies Department (EDL) is shared. The process was intended to improve policy-related content exposure in the curricula of each of four graduate programme areas. The case study method consisted of observation and documentation of a curriculum review and assessment process using a mapping method and tool advanced by Cuevas, Matveev, and Feit (2009), Cuevas, Matveev, and Miller (2010), Cuevas and Feit (2011) and Veltri et al. (2011). The tool utilises an evidence-based, summative, qualitative content analyis approach (Hsieh and Shannon 2005) conducted through reviews of course syllabi. As the analysis proceeded, it was determined that outcomes mapping was necessary, but not sufficient, to fully assess the appropriateness and alignment of a programme or course. A focus on mapping and assessing the *content* scope, sequence and intensity of coverage was also necessary. Thus, the author developed a Course-Level Content Scope and Sequence Mapping Tool. The intent of this tool is to address the need to map course and programme *content* coverage and depth (see Table 8 below).

This article considers the strengths and limitations of curriculum outcomes mapping, even when a very well conceived curriculum mapping approach and tool is used (Cuevas and Feit 2011; Cuevas, Matveev, and Feit 2009; Cuevas, Matveev, and Miller 2010; Veltri et al. 2011). This approach is one of many that seeks to map curricula to standards and outcomes through an evidence-based checklist using course syllabi as evidence. This type of curriculum mapping provides a high-level overview of the intent of a programme or course, but no information about the substantive content, or type or rigour of assessment, in place. This is true of many other methods of curriculum mapping and alignment. While many of these

approaches do provide a preliminary sense of the focus and depth of a programme/course, they rely on proxy measures of curricular content, scope, sequence and delivery that can only speak to the intended curriculum (Kurz et al. 2009; Margolis 2001). Ultimately, behaviour-based data such as class observations of teacher lectures, assignment guidance or student work are necessary to understand the delivered and/or enacted curriculum. While it was beyond the scope of this study to include evidence and discussion of behaviour-based data of this kind, such data are important to consider and should be further explored in models as well as in research (e.g. Orr et al. 2012). Such evidence is suggested to most fully utilise the power of the Course-Level Content Scope and Sequence Mapping Tool proposed in this article. However, it was not utilised in this particular case.

This case study found that while standards/outcomes mapping is necessary, it is not sufficient for holistically assessing curriculum. Mapping course and programme scope, sequence and depth of topical content is crucial so that programmes and their constituent courses expose students in introductory, and then increasingly complex, ways to broad knowledge and mastery, for example a type of spiral curriculum (Bruner 1960; Harden 1999). It is for this reason that the Course-Level Content Scope and Sequence Mapping Tool was developed and presented for consideration and use (see Table 8).

Context and conceptual framework

Curriculum is not a monolithic construct. It is generally thought to be the materials, processes and interactions comprising a course or programme of study where the goal is to provide new knowledge or skill. Yet, there are different conceptions and intentions of 'curriculum' at different stages in the educational process and from different stakeholders' perspectives. Curricula can be *intended*, *designed/planned*, *communicated*, *enacted* and *assessed* from an educator's perspective and, from the perspective of a student, *experienced* and *learned* (Ewell 1997; Harden 2001; Hatzakis et al. 2007; Kopera-Frye et al. 2008; Kurz et al. 2009; Porter and Smithson 2001; Robley et al. 2005; Veltri et al. 2011). From a research perspective, different evidence is needed to explore these different aspects of curriculum. For example, documents such as syllabi provide evidence of the intended curriculum through their representation of what was designed, planned and communicated to students. Actual artefacts or observations are necessary to determine what was enacted, experienced and assessed. Very specific assessments and accounts of personal growth are the evidence that help one to understand the learned curriculum.

Curriculum assessment is the process of critically analysing the curricula of individual courses or multiple-course programmes to determine their

alignment and appropriateness for an institution's intended purpose. Curriculum development is the process of creating the content and skill scope and sequence of individual courses or multiple-course programmes; again, for an institution's intended purpose. Curriculum alignment is a goal of curriculum development. Curriculum alignment ensures that a curriculum's structure and components are aligned with the intentions of the institution, or the educator, which must reflect standards or outcomes. Curriculum mapping is an analytic component of curriculum assessment and is based on systematically exploring and identifying particular relevant elements of a course or programme. Curriculum assessment and alignment are the analytic processes needed for effective curriculum development and assessment.

There is a research literature on curriculum assessment, alignment/coherence and development in both the K-12 educational space (e.g. DeLuca and Bellara 2013; Jacobs 2004; Jackson 1992; Kurz et al. 2009; Martone and Sireci 2009; Pinar 2014; Porter and Smithson 2001; Webb 1997, 1999, 2005, 2007) and in higher education. Much of this research is driven by accountability and accreditation requirements or concerns (e.g. DeLuca and Bellara; Oliver et al. 2010; Perlin 2011). Much of the higher education research is discipline-focused, with some convergence in the areas of information systems (Hatzakis et al. 2007; Veltri et al. 2011), food science (Hill 2007), conservation biology (Clark 2001), medicine (Harden 2001; Newble et al. 2005), educational leadership (Orr et al. 2012) and health administration (Perlin 2011). Some efforts highlight graduate attributes and capabilities (Baht et al. 2004; Spencer et al. 2012). This is appropriate to the degree that different disciplines have different knowledge and skill requirements, many of which are formalised through the accreditation process. Certain research also looks more broadly at curriculum alignment and mapping processes (Robley et al. 2005; Sumsion and Goodfellow 2004). There is research that highlights the role of the mapping process in encouraging professional reflection and communication (Bester and de Graaff 2012; Uchiyama and Radin 2009). Some work seeks to shed light on the 'messy' process of aligning curriculum and assessment through personal stories and specific case examples (Driscoll and Wood 2007). Other works highlight the need for, or advance formal plans for, digital curriculum mapping tools (e.g. Porter and Smithson 2001; Yaskin and Ritter 2012). The concern with curriculum alignment and mapping is international (e.g. Bester and de Graff 2012; Hatzakis et al. 2007; Kamali and Yamani 2012; Knight 2001; Kopera-Frye et al. 2008; Lawson et al. 2013; Madiba 2011; Oliver et al. 2010; Willett 2008).

Based on this current higher education literature, there are curriculum assessment and development steps that are broadly accepted as common or best practice. Scholars tend to agree that good curriculum development involves: (a) identifying and aligning curricula with learning objectives and desired outcomes; (b) sharing the process among faculty to ensure multiperspectival input and buy-in; (c) gathering broad relevant data including

student and faculty expectations and experiences and information about common practice in the field; and (d) putting a continuous improvement plan in place through formal and informal evaluation efforts (Baht et al. 2004; Hill 2007; Knight 2001; Orr et al. 2012; Tariq et al. 2004; Walker 2003; Wolf 2007).

The outcomes mapping model discussed here is intended as an evidence-based approach to curriculum assessment and development (Cuevas and Feit 2011; Cuevas, Matveev, and Feit 2009; Cuevas, Matveev, and Miller 2010; Veltri et al. 2011). Specifically, the method consists of reviewing course syllabi and other materials to assess and develop programmes and courses that are outcome-focused and aligned. Thus, in the model, inclusion of desired outcomes in the form of goals, objectives or standards is advanced as a programme's scope and sequence is mapped against these using a matrix format and actual course syllabi. This approach makes it possible to see, at a glance, if particular outcomes are being addressed throughout a course or programme and, to some degree, how deeply they are being addressed.

There are three major reasons that outcomes mapping model and tool of Cuevas and Feit (2011), Cuevas, Matveev, and Feit (2009), Cuevas, Matveev, and Miller (2010) and Veltri et al. (2011) was selected for this analysis. First, it is an evidence-based approach that is based on exploring where, and to what degree, particular curricular outcomes – here, professional standards – are evident in a proposed curriculum. This determination is based on evidence of such outcomes in the syllabi of a course or programme. Second, the approach seeks to bring this evidence to bear to explore alignment with course or programme goals and, through this, improved student exposure and achievement within a field of study. Third, this model had been presented at our university as part of a faculty development workshop and it was important to support this effort to bring this work to our attention. The model's strength is that it is empirically-based and aligns content to whatever outcomes are determined. This is an important method of making outcome goals explicit together with evidence of whether and how they are, or are not, being advanced within actual courses or programmes.

Table 1 provides a generic example of an outcome model's Programme Curriculum Map wherein programme standards and outcomes are identified and listed horizontally across the top of the table and courses constituting the programme are listed vertically on the left. The Xs indicate whether a standard or outcome is evident in a particular course. In this example, Learning Outcome 3 is evident in only the first two courses listed. This might mean that the outcome is most appropriate in beginning level courses or that this outcome needs more coverage in later courses.

Tables 2–5 show the outcomes mapping tool in use. The far-left column contains a list of courses comprising a programme. Each course is assessed on predetermined outcomes, which are represented across the top – here,

Table 1. Basic programme curriculum map.

	Standard 1	**Learning Outcome 1**	**Standard 2**	**Learning Outcome 2**	**Standard 3**	**Learning Outcome 3**	
Course 1	X	X	X	X	X	X	Additional Standards & Outcomes as Needed
Course 2		X			X	X	
Course 3	X		X		X		
Course 4			X		X		
Course 5	X	X			X		
Additional Courses as Needed	…	…	…	…	…	…	

the Educational Leadership Constituent Council's (ELCC) Standard 6 and its three sub-standards.

Note that each ELCC sub-standard's column has three sub-columns: Outcomes Statement, Level of Course Engagement toward the Outcome, and Presence of Feedback. Outcomes Statements and sub-statements are rated M if a syllabus states the outcome *implicitly* (e.g. alludes to, or advances a proxy for, an outcome) or X if a syllabus states it *explicitly* (e.g. states the intended course outcome overtly).

To determine the level of outcome engagement, reviewers consider syllabus content and the educational activities, materials and assessments globally and then provide the ratings I (Introduced) if the course's content would constitute an introduction to the intended outcome, E (Emphasised) if the course's content would constitute an emphasis toward the intended outcome, R (Reinforced) if the course's content would constitute a reinforcement of material toward the intended outcome, and A (Advanced) if the course's content would constitute an advanced engagement with materials toward the intended outcome. To further characterise the ratings, the 'I' rating means that students are introduced to the content or skill with the idea that there is not an expectation of familiarity and learning activities are directed at entry-level exposure and complexity. 'E' means that students are expected to have basic-level familiarity and the content or skill is taught to expand their exposure and complexity. 'R' means that students are expected to demonstrate strong foundational knowledge and skill with instruction building on this foundation to increase complexity. 'A' means that students are expected to have an advanced understanding and demonstrated skill level such that learning experiences are directed at application of this knowledge or skill.

The last column, Feedback/Assessment, is rated 'F' if feedback/assessment is present or is left blank if it is not. At the bottom of the table, and on the far-right side, are quantitative counts of the scores received in each column and row. These scores offer a quick sense of the relative strength of course breadth, depth, assessment or outcome focus.

Mapping curriculum using syllabi as core data results in learning about the intended, designed/planned and communicated curriculum. However,

this approach does not reveal what actual content is being delivered in a course – its delivered or enacted curriculum – only whether and how the syllabus language reflects the indicated outcomes. Because teaching and learning are behavioural, and this exercise is based on an analyses of documents and other artefacts, this mapping cannot help us understand whether and how these curricula have been delivered, enacted, assessed, experienced and/or learned.

Table 8's Course-Level Content Scope and Sequence Mapping Tool's content focus is intended to complement and deepen the outcomes mapping approach. Content information is also captured through the analysis of syllabi, although it does not have to be limited to this data source only. In this content mapping tool, cross-program content is listed as the range of topics to be covered within courses in a program. The tool is intended to map one course. Thus, specific content covered in a particular course is indicated by checkmarks. Evidence of how content is covered is indicated in the Course Items, which include readings, activities, assignments and assessments. The content of these Course Items is listed in the bottom of the table and relevant codes are applied. The Topic rows show quick codes for readings, activities, assignments and assessments. These codes are listed and coded in detail in the bottom part of the table. Codes from the outcomes mapping tool are used as 'engagement level' codes (i.e. Introduced, Emphasised, Reinforced or Advanced) and content is coded as to when in the course it was introduced (i.e. 'when introduced' codes Beginning, Middle, End). Assessments are also coded as to whether they are Developing, Experimenting with, or Showing Mastery of, skill. The Content Mapping is presented in Table 8 and the coding approach is discussed in more depth in that section.

Method

This article presents a descriptive qualitative case study (Stake 2005; Yin 2002) of a curriculum review process. As part of this process, the appropriateness and effectiveness of one outcome mapping and assessment approach were explored and found to be necessary, but not sufficient, for course and programme scope and sequence decisions. As a result, a content-focused curriculum mapping tool was created and is presented in Table 8 below. The case under consideration mapped four programmes and their constitutive courses from an Educational Leadership and Policy Studies (EDL) department at an urban state university. This process was undertaken by the author, a faculty member in the department, with the assistance of two research assistants – both doctoral students in the department. Development of the Course-Level Content Scope and Sequence Mapping Tool was conducted by the author. The research was supported by a modest Curriculum Related Activities Grant from Southern Connecticut State University.

Southern Connecticut State University is one of Connecticut's four state universities and is one of 17 statewide colleges and universities. The third-oldest state university campus, Southern Connecticut State University was founded in 1893 as the Connecticut State Normal School to train teachers for the state. Still known for its strong contribution to the pre-service and in-service development of teachers, Southern Connecticut State University's School of Education 'prepares the largest number of education graduates for teaching positions in the state.'[1] NCATE accredited, the School of Education (SoE) offers over 30 undergraduate and graduate degree programmes. EDL is one such programme and it offers the following four programme strands:[2]

- An Intermediate Administrator 092 Certification programme (21 credits + other requirements).
- A Superintendent of Schools 093 Certification programme (30 credits + other requirements).
- A Sixth-Year Diploma programme (21 credits + other requirements).
- An Ed.D. Doctoral programme (63 credits – 42 core/21 electives).

EDL's mission is 'to prepare educational leaders and policy practitioners with comprehensive knowledge, appropriate skills and the empowering attitudes to create and implement change in diverse educational settings, communities, and education-interested agencies' (Educational Leadership and Policy Studies Department n.d.) To date, the department has focused primarily on developing school building leaders (e.g. principals and assistant principals, deans, department chairs, area specialists) and district leaders (e.g. superintendents and assistant superintendents, district coordinators and other personnel). It also develops practitioners with research skills and foci through the Ed.D. program. Policy has always been considered core curricular content; however, there has been an increased interest in developing this area by both faculty and students in recent years.

According to Stake, a '[c]ase study is not a methodological choice but a choice of what is to be studied. By whatever methods, we choose to study the case' (2005, 435). Thus, a case study is a research strategy. The methods used to study this case were observation and documentation of an outcomes-focused curriculum review process and a content-focused tool development process as undertaken by the author and her two research assistants. Specifically, the research team asked: Was the evidence-based summative qualitative content analytic (Hsieh and Shannon 2005) outcomes mapping process helpful for critically analysing and improving programme and course curricula? If improvements were needed, how was content scope and sequence addressed? The curriculum mapping process took place to develop evidence-based programme/course recommendations for improvement to the department. The Course-Level Content Scope and Sequence

Mapping Tool development process was undertaken to contribute an evidence-based tool to map course and programme content scopes and sequences. The case study process was undertaken to document and critically consider these two complementary approaches to curriculum mapping with the intent of sharing these insights and contributing to the field.

It is important to note that, while not explicitly delineated by Cuevas, Matveev, and Feit (2009), Cuevas, Matveev, and Miller (2010), Cuevas and Feit (2011) and Veltri et al. (2011) in their work, their curriculum mapping/assessment approach constitutes a qualitative summative content analytic method. 'A summative approach to qualitative content analysis goes beyond mere word counts to include latent content analysis. Latent content analysis refers to the process of interpretation of content … [and] … discovering underlying meanings of the words or the content' (Hsieh and Shannon 2005, 1283–1284).

Thus, the case study consisted of observing, describing and assessing the conduct of the qualitative summative content analytic outcomes mapping method used to determine the degree to which the four graduate educational leadership programmes and their courses addressed policy-oriented standards by including relevant policy-oriented content. It also considered development of the resultant Course-Level Content Scope and Sequence Mapping Tool as an integral part of the case.

In the field of educational leadership, leadership development programme curricula are partly determined by field-based accreditation standards such as the National Policy Board for Educational Administration's (NPBEA) Educational Leadership Constituent Council's (ELCC) Standards for School Leaders advanced by the National Council for the Accreditation of Teacher Education (NCATE) (NPBEA 2011).[3] These standards include a focus on policy content coverage as a core part of understanding the interconnected systemic contexts in which schools and districts exist (Standard 6).

The curriculum review process was initiated with a policy focus for a number of reasons. First, the day-to-day work of educational leaders typically involves advocating for, or shepherding the implementation of, policy reforms. Policy research and applied policy advocacy and reform activities are integral to the efforts school building and district leaders undertake to benefit their communities and staff. The importance of such policy knowledge and exposure for educational leaders is advanced in research (Darling-Hammond et al. 2007; DeLuca and Bellara 2013; Wahlstrom et al. 2010). The policy focus was also pursued because this is an area of interest and expertise of the faculty researcher and the EDL department desires to bolster its policy focus. Also, program and accreditation standards support a policy focus. NCATE/ELCC (ELCC) Standard 6 is the field-based standard that advances policy as a core part of understanding the interconnected systemic contexts in which schools and districts exist. Specifically, for building leaders, which is roughly paralleled for district leaders, Standard 6 states:

> A building-level education leader applies knowledge that promotes the success of every student by understanding, responding to, and influencing the larger political, social, economic, legal, and cultural context through advocating for school students, families, and caregivers; acting to influence local, district, state, and national decisions affecting student learning in a school environment; and anticipating and assessing emerging trends and initiatives in order to adapt school-based leadership strategies. (NPBEA 2011, 21)

EDL's four leadership development programmes are required to support and advance the ELCC Standards.[4] Tables 3, 4, and 5 show the curriculum maps containing the planned programmes (e.g. constituent courses) for EDL's Educational Leadership and Ed.D. programme strands. These programmes and courses were reviewed in this study for their actual and potential policy content. While policy content recommendations were sought for all four programmes from this process, in this article the focus is on the methodological critique of, and suggestions for, the curriculum analysis process and tools utilised.

The case study was conducted by the faculty author and one research assistant taking running observational notes on the outcomes coding process, conducting high level document and matrix reviews once outcomes coding was complete, and engaging in critical reflective discussions throughout the process. It was determined that the highly productive outcomes mapping process would be complemented by a tool that tracked content coverage and depth. It was to fill this need that the Course-Level Content Scope and Sequence Mapping Tool was developed.

Mapping processes consisted of, first, identifying and collecting 172 EDL 092, 093, Sixth-Year and Ed.D. programme course syllabi spanning fall, spring and summer academic semesters between Fall 2010 and Fall 2012. A content analysis of these 172 syllabi was then conducted using the qualitative software package AtlasTI, and also by hand, to count the number of times the words 'law', 'policy' and 'policies' were included in each syllabus. This was intended to serve as a gross metric of potential law or policy content, as raw word counts included even contextual use (e.g. 'It is the policy of the EDL department to …') in courses that did not contain curricular law or policy content. By looking at which syllabi included these words multiple times, however, and ascertaining their context and purpose, it was possible to see which courses had more substantive foci in either the law or policy areas.

Syllabi were then consolidated in cases where one professor taught multiple sections within a semester and syllabi were substantially the same. A second content analysis was undertaken on the remaining 166 syllabi to denote courses specifically listing ELCC Standard 6 (and/or the Interstate School Leaders Licensure Consortium (ISLCC) standard, depending upon year). Mention of Standard 6 did not necessarily mean that a course focused strongly on policy content. Thus, to further determine the degree to which a

course substantively advanced policy content, outcomes mapping was pursued.

The third content analysis pass consisted of assessing the syllabus content of each programme and course using the three Programme Curriculum Maps with Course Detail: one for the 092 Intermediate Administrator Certification and 6th Year Diploma programmes (Table 3), one for the 093 Superintendent Certification programme (Table 4) and one for the Ed.D. Doctoral programme (Table 5). Each course in each programme was assessed with regard to its three Standard 6 outcomes statements, level of course engagement toward each outcome, and the presence or absence of assessment as part of the course. Curriculum maps were completed by one research assistant and reviewed for accuracy by the faculty researcher.

All courses referenced NCATE, ISLCC and/or ELCC standards. CT Standards for School Leaders were also evident in some syllabi. Standards were variably reflected in the course objectives, learner outcomes or feedback/assessment for a particular course. The resulting outcomes maps show evidence of presence if any of the syllabi reflected Standard 6. It is important to note that not every class section for a course consistently applied a standard in objectives, instructional level or feedback.

The Course-Level Content Scope and Sequence Mapping Tool was developed in an organic manner during syllabus coding and critical discussions to interpret findings. Broad notions of curricular coverage, spiralling and scaffolding in relation to programme outcomes grounded its development and these are reflected in the tool's columns. Because mapping content was the intent of the new tool, four broad content reinforcement, categories were identified: readings, activities, assignments and assessments. These were chosen because actual topical content could be connected to each through the content list feature the tool provides (e.g. listing the actual readings, activities, assignments and assessments in the bottom portion of the tool such as Rea1 or Act2). As a result, a course map would not only show content, but also the behavioural expectations for such content's delivery as expressed in syllabi (e.g. reading, assignment, etc.).

Results

Results of the qualitative content analysis and outcomes mapping

The first content analysis pass[5] counted the number of times the words 'law' and 'policy' were included in each syllabus. Out of the 172 syllabi reviewed, 'law' was mentioned 613 times and 'policy' 1635 times. These counts include contextual use of the words (e.g. 'It is the policy of the EDL department to …'). Looking at the data, most course syllabi either did not mention law or policy at all, or did so infrequently. In Table 2, the five

Table 2. Courses with highest word counts of 'law' and 'policy'.

Course #	Course title	Programme	# of words = law	# of words = policy
EDL 602	Educational Law	Sixth Year	28	2
EDL 687/688	Field-based Internship I & II	092, 093, Sixth Year	17	19
EDL 692	Educational Policy and the Law	093	13	13
EDL 708	Leadership for Social Equity	Ed.D.	12	13
EDL 711	Educational Policy: Context and Inquiry	Ed.D.	122	127

courses showing highest counts of 'law' or 'policy' in their syllabi are indicated with word counts.

Tables 3, 4, and 5[6] show the Outcomes Maps with Course Detail for the 092/Sixth-Year, 093 and Ed.D. programmes, respectively.

In Table 3, seven 092 courses are shown along with the three additional courses that are intended for Sixth-Year students. For each of the three Standard 6 sub-standards, the pattern is the same for each course. If a course syllabus showed that it addresses the outcomes statement implicitly (M) at an introductory (I) level with no feedback/assessment mechanism (blank) for Sub-standard 6.1, that same pattern (M, I, blank) typically followed for sub-standards 6.2 and 6.3. As the table shows, EDL 680 addresses all sub-standards explicitly and EDL 681 addresses them implicitly. Both courses advance content that introduces the standards and do not include a formal feedback/assessment of the standard. EDL 685 addresses the sub-standards implicitly, advances content that introduces the standards and includes formal feedback/assessment of the standards. EDL 682 and 684 offer an implicit connection to the standards, content that emphasises the standards and feedback through assignments. EDL 687 and 688 address all sub-standards explicitly, advance content that reinforces the standards and includes formal feedback/assessment of the standards. EDL 689 explicitly connects to the standard's outcomes, advances content that reinforces the standards and contains feedback elements. Syllabi for EDL 683 do not contain language regarding policy sub-standards at all. EDL 602 and 657 show robust engagement with Standard 6 through explicit outcome connection and feedback and a level of standards engagement that reinforces core policy-related content and skill.

In Table 4, seven 093 Superintendent courses are shown. Syllabi for 598 and EDL 661 and 663 did not seem to address Standard 6 at all; thus, these lines are left blank. Of the remaining courses, EDL 686 and 689 are similar in advancing an outcome implicitly in relation to the standards, with an

Table 3. Programme outcomes map with course detail – 092 Intermediate Administrator Certification and 6th Year Diploma.

ELCC STANDARDS ➔			***Standard 6.0* -- Candidates who complete the program are educational leaders who have the knowledge and ability to promote the success of all students by understanding, responding to, and influencing the larger political, social, economic, legal, and cultural context.**									***BREADTH***	***DEPTH***	***FEEDBACK***
			Standard 6.1 Candidates understand and can advocate for school students, families, and caregivers.			Standard 6.2 Candidates understand and can act to influence local, district, state, and national decisions affecting student learning in a school environment			Standard 6.3 Candidates understand and can anticipate and assess emerging trends and initiatives in order to adapt school-based leadership strategies.					
Outcome/Delivery/Feedback Metrics (See Legend Below)➔			Outcome Statement	Level	Feedback/ Assessment	Outcome Statement	Level	Feedback/ Assessment	Outcome Statement	Level	Feedback/ Assessment			
CORE COURSES	*680 - Leadership Perspectives*		X	I		X	I		X	I		3	3	
	681- Leadership Development		M	I		M	I		M	I		3	3	
	682- Org. Development		M	E	F	M	E	F	M	E	F	3	3	3
	683- Supervision and Staff Development													
	684- Learning Theory		M	E	F	M	E	F	M	E	F	3	3	3
	685- Curriculum Development		M	I	F	M	I	F	M	I	F	3	3	3
	687 & 688- Field- based Internship I & II		X	R	F	X	R	F	X	R	F	3	3	3
	602 - Education Law	*6th Year Prgm*	X	R	F	X	R	F	X	R	F	3	3	3
	657- Education Finance		X	R	F	X	R	F	X	R	F	3	3	3
	689 - Seminar in Educational Leadership		X	R	F	X	R	F	X	R	F	3	3	3
Outcome Score 092 Certification			***9***	***7***	***4***	***9***	***7***	***4***	***9***	***7***	***4***			
Outcome Score 6th Year Program			***15***	***13***	***7***	***15***	***13***	***7***	***15***	***13***	***7***			

LEGEND

OUTCOME STATEMENT: The program outcome is ***(X) EXPLICITLY* OR *(M) IMPLICITLY*** reflected in the course syllabus.
LEVEL OF CONTENT DELIVERY: ***(I) INTRODUCED*** – Content knowledge/skill familiarity not expected. Focus is on basic knowledge, skills, and/or competencies; ***(E) EMPHASIZED*** -- Basic content/skill knowledge expected. Focus is on enhancing and strengthening knowledge, skills, and expanding complexity; ***(R) REINFORCED*** – Strong content knowledge/skill foundation expected. Focus is on building upon previous competencies with increased complexity; ***(A) ADVANCED*** -- Advanced level of content knowledge/skill expected. Focus is on use of the content or skills in multiple and complex contexts.
FEEDBACK / ASSESSMENT OF STUDENT PERFORMANCE: ***(F)* FEEDBACK** is provided on homework, classwork, etc.

Note: Table adapted from Cuevas and Feit (2011) and Veltri et al. (2011). Data are from this study.

Table 4. Programme outcomes map with course detail – 093 Superintendent Certification.

ELCC STANDARDS ➔		***Standard 6.0* -- A district-level education leader applies knowledge that promotes the success of every student by understanding, responding to, and influencing the larger political, social, economic, legal, and cultural context within the district through advocating for district students, families, and caregivers; acting to influence local, district, state, and national decisions affecting student learning; and anticipating and assessing emerging trends and initiatives in order to adapt district-level leadership strategies.**											
		Standard 6.1 Candidates understand and can advocate for district students, families, and caregivers.			Standard 6.2 Candidates understand and can act to influence local, district, state, and national decisions affecting student learning in a district environment.			Standard 6.3 Candidates understand and can anticipate and assess emerging trends and initiatives in order to adapt district-level leadership strategies.			***BREADTH***	***DEPTH***	***FEEDBACK***
Outcome/Delivery/Feedback Metrics (See Legend Below)➔		Outcome Statement	Level	Feedback/ Assessment	Outcome Statement	Level	Feedback/ Assessment	Outcome Statement	Level	Feedback/ Assessment			
CORE COURSES	*692- Educational Policy and the Law*	X	A	F	X	A	F	X	A	F	3	3	3
	687 & 688 - Internship I & II	M	R	F	M	R	F	M	R	F	3	3	3
	686 - District-Level Instructional Leadership	X	R	F	X	R	F	X	R	F	3	3	3
	RSM 598- Evaluation of Programs and Personnel	No References			No References			No References					
	661- The Politics of School Administration	No Syllabi			No Syllabi			No Syllabi					
	663- Educational Planning	No Syllabi			No Syllabi			No Syllabi					
	689- Seminar in Leadership and Supervision	X	E	F	X	E	F	X	E	F	3	3	3
Outcome Score 093 Certification		*7*	***11***	***4***	*7*	***11***	***4***	*7*	***11***	***4***			
LEGEND	**OUTCOME STATEMENT**: The program outcome is ***(X) EXPLICITLY* OR *(M) IMPLICITLY*** reflected in the course syllabus. **LEVEL OF CONTENT DELIVERY**: ***(I) INTRODUCED*** – Content knowledge/skill familiarity not expected. Focus is on basic knowledge, skills, and/or competencies; ***(E) EMPHASIZED*** -- Basic content/skill knowledge expected. Focus is on enhancing and strengthening knowledge, skills, and expanding complexity; ***(R) REINFORCED*** – Strong content knowledge/skill foundation expected. Focus is on building upon previous competencies with increased complexity; ***(A) ADVANCED*** -- Advanced level of content knowledge/skill expected. Focus is on use of the content or skills in multiple and complex contexts. **FEEDBACK / ASSESSMENT OF STUDENT PERFORMANCE**: ***(F)* FEEDBACK** is provided on homework, classwork, etc.											

Note: Table adapted from Cuevas and Feit (2011) and Veltri et al. (2011). Data are from this study.

Table 5. Programme outcomes map with course detail – Ed.D. Doctorate.

ELCC STANDARDS ➔		***Standard 6.0* -- Candidates who complete the program are educational leaders who have the knowledge and ability to promote the success of all students by understanding, responding to, and influencing the larger political, social, economic, legal, and cultural context.**											
		Standard 6.1 Candidates understand and can advocate for school students, families, and caregivers.			Standard 6.2 Candidates understand and can act to influence local, district, state, and national decisions affecting student learning in a school environment.			Standard 6.3 Candidates understand and can anticipate and assess emerging trends and initiatives in order to adapt school-based leadership strategies.			*BREADTH*	*DEPTH*	*FEEDBACK*
Outcome/Delivery/Feedback Metrics (See Legend Below)➔		Outcome Statement	Level	Feedback/ Assessment	Outcome Statement	Level	Feedback/ Assessment	Outcome Statement	Level	Feedback/ Assessment			
CORE COURSES	*663 - Educational Planning*												
	701- Leadership and Organizational Development												
	702 - Applications in Leadership and Organizational Development	**X**	**I**	**F**	**X**	**I**	**F**	**X**	**I**	**F**	**3**	**3**	**3**
	703 - Leading Organizational Change												
	704 - Quantitative Methods in Educational Leadership												
	705 - Qualitative Methods in Educational Leadership												
	708 - Leadership for Social Equity												
	711 – Ed. Policy- Context and Inquiry	**X**	**R**	**F**	**X**	**A**	**F**	**X**	**R**	**F**	**3**	**3**	**3**
	725 - Advanced Research Methods												
	731 & 799 - Doctoral Inquiry Seminar												
	722 - Research Design												
	800 - Dissertation Advisement and Defense												
Outcome Score Ed.D. Program		*3*	*5*	*2*	*3*	*5*	*2*	*3*	*5*	*2*			

LEGEND

OUTCOME STATEMENT: The program outcome is ***(X) EXPLICITLY* OR *(M) IMPLICITLY*** reflected in the course syllabus.
LEVEL OF CONTENT DELIVERY: ***(I) INTRODUCED*** – Content knowledge/skill familiarity not expected. Focus is on basic knowledge, skills, and/or competencies; ***(E) EMPHASIZED*** -- Basic content/skill knowledge expected. Focus is on enhancing and strengthening knowledge, skills, and expanding complexity; ***(R) REINFORCED*** – Strong content knowledge/skill foundation expected. Focus is on building upon previous competencies with increased complexity; ***(A) ADVANCED*** -- Advanced level of content knowledge/skill expected. Focus is on use of the content or skills in multiple and complex contexts.
FEEDBACK / ASSESSMENT OF STUDENT PERFORMANCE: ***(F)* FEEDBACK** is provided on homework, classwork, etc.

Note: Table adapted from Cuevas and Feit (2011) and Veltri et al. (2011). Data are from this study.

emphasised level of content and skill and evident feedback components. EDL 687 and 688 implicitly include Standard 6, reinforce a content and skill level related to the standard, and include a feedback component. EDL 692 is the course that addresses policy content most clearly, with sub-standards explicitly addressed, content at an advanced level of skill in relation to the standards, and formal feedback regarding the standards included.

As shown in Table 5, two out of 12 doctoral programme course syllabi show explicit engagement with Standard 6. In EDL 702, Standard 6 is addressed explicitly, standards-focused content and skill are introductory, and there is a feedback mechanism. EDL 711 emerges as the course with the most advanced policy content. Standard 6-related content is explicit, the level of content/skill engagement is both advanced and reinforced and feedback mechanism are present.

Based on the law/policy word content analysis and the curriculum mapping analysis, Table 6 suggests that all four programmes contain one or more course components that include policy content in the following courses: EDL 602, 657, 687, 688, 692, 708 and 711.

The X, A, F Outcomes Map configuration (explicit, advanced, with feedback/assessment) would seem to suggest that EDL 692 and EDL 711 are the EDL department's most policy-focused courses. EDL 602 and 657 are the next most robust because of word counts and because policy content is reinforced. EDL 687 and 688 follow because policy content is implicit relative to Standard 6 and content is reinforced in both programmes. While all courses have a feedback component, further analysis would need to be conducted to determine each assignment's alignment, depth and rigour.

From a programme perspective, the Ed.D. programme seems to have targeted policy intent and content in EDL 711 and EDL 708. EDL 708 is an interesting case. While the course is highly policy-focused, the syllabus' language does not reflect it in the same standards-connected way as do the other courses. This is likely because the Ed.D. programme is not required to align, specifically, with ELCC standards although it is expected to show such alignment through gates and assessments. The 093 Superintendent Certification programme and the Sixth-Year Diploma programme also have anchor policy-related courses. Like EDL 711, EDL 692 rates highly on the outcomes map tool. As the law/policy course for superintendents, who engage with legal and policy issues as a matter of course, it is important that it rates highly on both the outcomes and the content scales. In the Sixth-Year programme, both EDL 602 and EDL 657 – the Law and Finance courses – have an explicit connection to Standard 6 and content engagement is reinforced, rather than advanced. The only courses that rate regarding law/policy focus in conjunction with Standard 6 for the 092 Intermediate Administrator Certification programme are EDL 687 and 688, where policy content is implicit and does have feedback components. This is a field-based internship course that is highly individualised, but with standardised core

content and assignments. It should be noted that this course has a less formalised law/policy rating; yet, Table 2's content analysis suggests it is the only policy-focused course in the 092 programme.

As a result of this curriculum mapping process, a great deal was learned about course/programme policy coverage relative to standards and outcomes. However, the process did not provide a clear sense of course or programme content. The process did not map content type, focus, level of engagement or assessment. Potentially, three different courses could cover exactly the same content, but this would not be identified through the outcomes mapping process we undertook. In fact, the information provided through this process could not be fully assessed and contextualised without a clear sense of the *content* intents, requirements and actual coverage of individual courses within the context of their overall programmes. Mapping the topical scope and sequence – as it appears in readings, activities, assignments and assessments – is important within and across courses in a programme. Such an analysis offers a deeper understanding of what a particular course is covering and at what depth. It also offers a clearer sense of how courses within a programme do or do not cohere to create an integrated educational experience that scaffolds content at levels that progress from introductory to advanced. It is for this reason that the faculty researcher developed the Course-Level Content Scope and Sequence Mapping Tool as an evidence-based dashboard-type tool to map content.

Development of the course-level content scope and sequence mapping tool

The tool was developed with a broad spiral curriculum in mind (Bruner 1960; Harden 1999). As well, it was intended to be used within an outcomes context. Thus, mapping topical or content scope and sequence required mapping the standards/outcomes context first. To do this, something like the template depicted in Table 7 should be completed for each

Table 6. Courses with strong policy content.

Course #	Course title	Programme	Outcome statement	Level	Feedback/ Assessment
EDL 602	Educational Law	Sixth Year	X	R	F
EDL 657	Educational Finance	Sixth Year	X	R	F
EDL 687/688	Field-based Internship I & II	092, 093, Sixth Year	M	E	F
EDL 692	Educational Policy and the Law	093	X	A	F
EDL 708	Leadership for Social Equity	Ed.D.	Based on word content analysis		
EDL 711	Educational Policy: Context and Inquiry	Ed.D.	X	A	F

course in a programme so that each standard's outcomes are aligned to particular content knowledge and skill indicators as well as potential assessments that can be identified and listed in the Course-Level Content Scope and Sequence Mapping Tool.

The Course-Level Content Scope and Sequence Mapping Tool itself (see Table 8) includes two main columns: Cross-Program Content and Course Items. At the bottom of the table are four 'Types' sections where specific readings, activities, assignments or assessments can be listed under 'Items' and then coded in the 'When Introduced,' 'Engagement Level' and 'Assessment of Skill' columns on the right. A key component of this tool is the topics list in the Cross-Program Content column – a list of discipline-specific topics that should be derived from a standards- and outcomes-based

Table 7. NCATE/ELCC Standard 6.

Acceptable Candidate Performance for ELCC Building Level Leadership Standard 6.0	
ELCC Standard Element 6.1: Candidates understand and can advocate for school students, families, and caregivers.	
Content Knowledge Programs provide evidence of candidate knowledge of: • policies, laws, and regulations enacted by state, local, and federal authorities that affect schools; • the effect that poverty, disadvantages, and resources have on families, caregivers, communities, students, and learning.	*Professional Leadership Skills* Programs provide evidence that candidates demonstrate skills required to: • analyze how law and policy is applied consistently, fairly, and ethically within the school; • advocate based on an analysis of the complex causes of poverty and other disadvantages; • serve as a respectful spokesperson for students and families within the school.
ELCC Standard Element 6.2: Candidates understand and can act to influence local, district, state, and national decisions affecting student learning in a school environment.	
Content Knowledge Programs provide evidence of candidate knowledge of: • the larger political, social, economic, legal, and cultural context; • ways that power and political skills can influence local, state, or federal decisions.	*Professional Leadership Skills* Programs provide evidence that candidates demonstrate skills required to: • advocate for school policies and programs that promote equitable learning opportunities and student success; • communicate policies, laws, regulations, and procedures to appropriate school stakeholders.
ELCC Standard Element 6.3: Candidates understand and can anticipate and assess emerging trends and initiatives in order to adapt school-based leadership strategies.	
Content Knowledge Programs provide evidence of candidate knowledge of: • future issues and trends that can affect schools (e.g. entrepreneurial approaches); • contemporary and emerging leadership strategies to address trends.	*Professional Leadership Skills* Programs provide evidence that candidates demonstrate skills required to: • identify and anticipate emerging trends and issues likely to affect the school; • adapt leadership strategies and practice to address emerging school issues.

Note: Adapted from the NCATE 2011 School and District Leadership Standards.

disciplinary notion of what the programme and course should teach. Mapping where, when and to what degree these topics occur within the course is the basis of this content-focused assessment approach.

The Course Items column of Readings, Activities, Assignments and Assessments is where final coding of materials and activities within the course is noted. It must be completed in conjunction with the items identified in the 'Types' and 'Items' sections of the tool. In the Table 8 example, we see that Topic 12, Data Driven Decision-making, is addressed in the course with two readings, Reading 2 (Rea2) and Reading 3 (Rea3); one activity, Activity 1 (Act1); and one assessment, Assessment 2 (Asm2). Each entry is then marked with two codes: a 'When Introduced' code and an 'Engagement Level' code. The When Introduced code indicates whether a Reading, Activity, Assignment or Assessment is introduced at the (B) Beginning, (M) Middle or (N) End of the course. The Engagement Level coding is taken directly from Cuevas, Matveev, and Feit 2009, Cuevas, Matveev, and Miller 2010, Cuevas and Feit (2011) and Veltri et al. (2011) where either Readings, Activities or Assignments are characterised as (I) Introduced, (E) Emphasised, (R) Reinforced or (A) Advanced. Assessments are coded differently in terms of their emphasis: (D) Developing Skill, (X) Experimenting with Skill or (S) Showing Mastery of Skill. This coding scheme makes it possible to see at what point in a semester or year a reading, activity, assignment or assessment is given and at what content depth it is intended.

The 'Course Items' columns are where it is possible to identify which topics have been addressed by what kinds of readings, activities, assignments or assessments. Here, the reading, activity, assignment and/or assessment codes from the 'Types' and 'items' lists are placed in their respective columns in the topic rows to which they apply. One assignment, for example, might apply to several topics.

Table 8 includes a few examples of entries, but a more robust matrix would result from a full analysis of one course. To undertake a programme review, a basic programme curriculum map, such as that in Table 1, should be developed initially. Then, each course may be mapped using this Course-Level Content Scope and Sequence Mapping Tool. As a final step, all coding for courses within a programme should be analysed and synthesised to show topical coverage and depth across the programme (tool not shown).

This Course-Level Content Scope and Sequence Mapping Tool still needs refinement and the information provided here is preliminary. The tool does offer the benefits of providing more empirical evidence of the curricular intention, planning and communication of a syllabus by more clearly identifying the actual proposed behaviours and products within a course. It also affords the same kind of rating of emerging depth of content engagement as that afforded by the featured outcomes mapping tool but in a fashion more connected to the empirical and behavioural content of a course. While this method still assesses the intended, planned and/or communicated

Table 8. Course-level content scope and sequence mapping tool.

Course: EDL 923 –Seminar In Leadership Fall 2015 **NCATE Standards 1, 2, 3, 4, 5, 6 & CAEP Standards 1.1-1.5 & 2.3**					
Cross-Program Content		**Course Items**			
✓	**Topics Specific to This Course**	**Readings**	**Activities**	**Assignments**	**Assessments**
✓	1 Leadership Theory/Practice	Rea1-BI	Act3-MR	Asn1-BI	Asm2-MD
	2 Leadership Communication				
	3 Leadership & Learning theory				
	4 Leadership & Curriculum				
✓	5 Leadership & Organizational Structure/Development	Rea2-BI	Act1-BE		Asm2-MD
✓	6 Leadership & Supervision/Evaluation	Rea3-BE	Act3-MR		Asm2-MD
	7 Leadership & School Improvement				
✓	8 Leadership & Field Study			Asn2-MR	Asm1-BE
	9 Leadership & Change				
✓	10 Understanding Educational Systems	Rea1-BI	Act1-BE	Asn1-BI	Asm2-MD
	11 Assessment				
✓	12 Data Driven Decision-Making	Rea2-ME Rea3-NA	Act2-BI	Asn3-MA	Asm2-MD
	13 Differentiated Instruction				
	14 Special Populations (ELL, SPED, G&T, Diversity)				
	15 Evaluation				
	16 Professional Development/PLCs				
✓	17 School Climate/Culture	Rea3-NA	Act1-BE		Asm2-MD
	18 Human Resources				
	19 Planning and Scheduling				
✓	20 Budgeting		Act2-BI	Asn2-BE	Asm1-BE Asm2-MD
	21 Discipline				
✓	22 Policy/Law	Rea2-ME	Act1-BE	Asn3-MA	Asm2-MD
✓	23 Public/District, State & Federal Relations	Rea1-BIs	Act1-BE	Asn1-BI	Asm2-MD
	24 Public/Parent/Community Relations				
✓	25 Technology	Rea2-ME	Act1-BE	Asn3-MA	Asm2-MD
✓	ALL SELECTED TOPICS				Asm3-NS

Codes	**Types**	**Item Codes**	**Items**	**When Introduced**	**Engagement Level**
When Introduced B=Beginning M=Middle N=End **Engagement Level*** I= Introduced E=Emphasised R=Reinforced A=Advanced	**Course Readings**	Rea1	e.g. Author/Date/Title/Text	B	I
		Rea2	e.g. Author/Date/Title/Text	M	E
		Rea3	e.g. URL	N	A
	Course Activities	Act1	e.g. Web-Quest	B	E
		Act2	e.g. In-Class Data Practice	B	I
		Act3	e.g. Facilitate Class on Evaluation	M	R
	Course Assignments	Asn1	e.g. Reading Reflection	B	I
		Asn2	e.g. Field Interview	M	R
		Asn3	e.g. Building Data Plan	M	A
Assessment of Skill D=Developing E=Experimenting S= Showing Mastery	**Course Assessments**	Asm1	e.g. Field Interview (Asn2)	B	**Assessment of Skill ↓** E
		Asm2	e.g. Mid-Term Examination	M	D
		Asm3	e.g. Final Paper – ALL TOPICS	N	S

Note: I, E, R, A adapted from Cuevas et al. (2009), Cuevas et al. (2010), Cuevas and Feit (2011) and Ventri et al. (2011).

curriculum without relying on actual course observations, assignment guidance, student work and so on, it does move closer to such a standard by more explicitly considering topical content and how it is advanced through the curricular elements of a course.

Discussion and recommendations

As with any empirical research activity, there were layers of learning that resulted as the analytic process unfolded. In what follows, findings and recommendations regarding course and programme policy content are discussed. In addition, however, because this process was useful, but warranted improvement, methodological considerations and recommendations are also discussed.

Finding that courses EDL 602, 657, 687/688, 692, 708 and 711 were those most focused on law and policy as advanced through the outcome expectations of Standard 6 was not surprising. These courses were developed to fill this particular content and skill slot in the EDL's four programmes, so it is satisfying that this curriculum assessment process confirmed this fact. There are a number of points of interest that do arise from the curriculum mapping, however.

The first point of interest is that, according to the syllabus review, the EDL 092 programme does not have a course with a deep policy focus outside of the EDL 687/688 – Field Based Internship I & II. The internship is highly individualised and directed toward application of knowledge in the field. In such a course, core content should not be introduced and typically is not. The author is aware that policy content is covered in the 092 programme. It is suggested that core policy content be more thoroughly articulated in the 092 syllabi. However, additional targeted units in each of the programme's courses or in a course dedicated specifically to the policy topic area would also be welcome.

A second point of interest relates to EDL 708 – Leadership for Social Equity. This doctoral course has a strong policy focus that was identified through the word-based content analysis, but not through the outcomes mapping process. This finding raises questions about how explicit and/or standardised language in syllabi should be regarding the content focus of standards and learning outcomes. Important, too, is that it raises questions about how accurate a particular curriculum assessment process might be based on the parameters of its tools.

The third point of interest regarding policy content in EDL courses/programmes is that the outcomes maps do demonstrate evidence of a certain progression of policy content across courses within the programmes. Ideally, as the Basic Curriculum Mapping tool suggests (Table 1), policy content would be introduced in certain courses and then scaffolded toward deeper and more substantial exposure as the programme curriculum progresses. The analysis here shows Introduced and/or Emphasised policy content in roughly one-third of the courses within a programme with at least one and often two courses serving as the primary core content deliverers. It would be helpful to determine what topics and skills course content covers as well as whether and how it progresses within courses and within and across programmes – the major outcomes mapping limitation this study explores.

The outcomes mapping approach explored here was very helpful. It was clear and cogent, easy to use and delivered useful outcomes-focused information. Yet, while providing a quick, high-level understanding of course and programme content, coherence and alignment based on stated course outcomes, the approach did not provide needed information about the curricula's exposure to, and use of, topics; what specific curricular assignments or activities constituted an introductory, emphasised, reinforced or advanced level of content engagement; or the nature, depth and rigour of assessments. Stated differently, there was no opportunity to document and assess the topical focus of policy content and its relative depth in different instantiations.

With regard to what students in a higher education or professional programme or course of study should know and be able to do, there are general skills and knowledge they must have initially in order to apprehend the materials and learning at all (e.g. the reading, writing and conceptual/analytic ability they developed in their high school and/or undergraduate programmes). The point of a new programme of study is to expose students to a range of disciplinary content and skill, which they are supported in apprehending and mastering. Ideally, the programme scope and sequence is based on a coherent, progressive plan where required and optional content has been identified. Once identified, such content needs should ideally be translated into different learning activities, materials, experiences and assessments that progress in such a way through the programme and across courses so as to scaffold students' learning toward increasing facility and mastery. When mapping outcomes alone, without specific attention to the content and tasks that support these outcomes, it is impossible to know whether students are getting appropriate topic coverage or skill practice. While there are some curriculum mapping approaches and tools that strive to address progressive content and skill exposure (e.g. Orr et al. 2012), the fact that so many take an outcomes focus, devoid of progressive content and skill considerations, warrants critical consideration. The individuals and bodies responsible for curriculum development and review have a responsibility to support learning outcomes, disciplinary convention, and scholarly excellence and innovation. However, as is often the case in higher education, those in such roles may not have an opportunity to develop a deep understanding of curriculum, or may or may not have received any training or guidance on how to execute their task. It is for this reason that the kinds of curriculum review processes and tools described in this article constitute important contributions to the field and warrant continued review and improvement.

As a result of the curriculum review/mapping process described in this case, and based on the literature reviewed, it would seem that more attention to content/topical coverage is warranted. In particular, further consideration of the curriculum mapping literature would be useful to better map how it portrays the core features and intents of curriculum mapping and

how the tools proposed may or may not support intended results. Part of this process could be a review of current curriculum development/review models, for the models drive conception and implementation.

Conclusion

This article shared a curriculum review process undertaken to consider policy content in four programmes within one urban university's Educational Leadership and Policy Studies Department. Evidence demonstrates that policy content is important in educational leadership programmes and coursework. There are conceptual frameworks, processes and tools through which curriculum can be mapped and assessed so that standards- and/or outcomes-focused content can be determined.

The outcomes mapping process had a proximal result of useful evaluative information that pointed to some suggestions for course and programme improvement regarding policy content and instruction. This information is being used to continually improve the courses and programmes in the department. Use of the Course-Level Content Scope and Sequence Mapping Tool is one suggestion for advancing an empirical and behavioural approach to curriculum mapping that complements outcomes mapping.

A medial result is the need to further assess the utility of the Course-Level Content Scope and Sequence Mapping Tool in applied settings and for research and accreditation purposes. A more distal and anticipated endeavour to which this research points is to review and consider the nature of existing curriculum development models for higher education. In reviewing the literature, a number of models of curriculum review and development were identified, but their foci, frameworks, approaches and tools were not systematically characterised and critically explored. Describing and critiquing extant curriculum mapping models may reveal a bias toward outcomes and outcome mapping, for example, and a lack of content focus. Emergent findings could help the field theorise and execute curriculum review in ways that serve education and its stakeholders better. It is hoped that, at this time, the Course-Level Content Scope and Sequence Mapping Tool offers an easy and effective way to significantly improve curricular alignment and coherence in higher education courses and programmes by not only considering curricular outcomes, but also the range and progression of content upon which they rely.

Acknowledgements

This research was partially supported by Curriculum-Related Activities Grant from Southern Connecticut State University. Also, many thanks to Anne Pember and Paula Quenoy, doctoral students in the Educational Leadership and Policy Studies Department of Southern Connecticut State University, for their exceptional research assistance and support.

Notes

1. See http://www.southernct.edu/academics/schools/education/index.html/.
2. The planned programme (i.e. the courses and course sequence for each programme) is evident in the list of courses reviewed in each table.
3. In July 2013, the National Council for the Accreditation of Teacher Education (NCATE) and the Teacher Education Accreditation Council (TEAC) merged to form the Council for the Accreditation of Educator Preparation (CAEP). This work was undertaken before the merger occurred.
4. Southern Connecticut State University is accredited by the New England Association of Schools and Colleges (NEASC). For this research it was decided to map the Ed.D. programme using the NCATE/ELCC standards for comparability with the other EDL programmes.
5. The large table of this information is not included.
6. Additional analysis tables were constructed with any actual text and/or assignments pertaining to law or policy. These were not included in this article because of their length, but they did serve to deepen and reinforce the more cursory assessments of content determined through the first analytic passes of the syllabi.

Notes on contributor

Dr Sousan Arafeh is an Assistant Professor in the Educational Leadership and Policy Studies Department at Southern Connecticut State University, where she teaches both educational leadership and doctoral courses and supervises doctoral dissertations and field-based internships. Her expertise is in qualitative methods, STEM education initiatives, programme evaluation, teacher/leader professional development and training, technology use in education, and education policy.

References

Baht, D., C. Smith, S. Stein, and R. Swann. 2004. "Beyond Mapping and Embedding Graduate Attributes: Bringing Together Quality Assurance and Action Learning to Create a Validated and Living Curriculum." *Higher Education Research and Development* 23 (3): 313–328.

Bester, M. M., and M. F. de Graaff. 2012. "Curriculum Mapping as a Responsive and Reflective Process." In *Proceeding of the Higher Education Learning and Teaching Association of Southern Africa Conference*, edited by N. Tisani and M. Madiba. Stellenbosch, South Africa: Stellenbosch University.

Bruner, J. 1960. *The Process of Education*. Cambridge, MA: Harvard University Press.

Clark, T. 2001. "Developing Policy-Oriented Curricula for Conservation Biology: Professional and Leadership Education in the Public Interest." *Conservation Biology* 15 (1): 31–39.

Cuevas, N. M., and M. D. Feit. 2011. "Curriculum Mapping: A Roadmap for Curriculum Coherence and Student Achievement." Presentation for Southern Connecticut State University on March 4, 2011. http://www.southernct.edu/faculty-staff/faculty-development/curriculummapping.html.

Cuevas, N. M., A. G. Matveev, and M. D. Feit. 2009. "Curriculum Mapping: An Approach to Study Coherence of Program Curricula." *Department Chair* 20 (1): 23–26.

Cuevas, N. M., A. G. Matveev, and K. O. Miller. 2010. "Mapping General Education Outcomes in the Major: Intentionality and Transparency." *Peer Review Winter* 10–15.

Darling-Hammond, L., M. LaPointe, D. Meyerson, and M. T. Orr. 2007. "Preparing School Leaders for a Changing World: Lessons from Exemplary Leadership Development Programs. School Leadership Study. Executive Summary." *Stanford Educational Leadership Institute*. http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CDcQFjAA&url=http%3A%2F%2Fwww.wallacefoundation.org%2Fknowledge-center%2Fschool-leadership%2Fkey-research%2FDocuments%2FPreparing-School-Leaders.pdf&ei=AxGJU5nSMJGVqAaKuYAo&usg=AFQjCNGBxDyUpNnQxHeroFOruNLKkzMnBg&sig2=sFfr_g1IC0tEu_-fkOeR_w&bvm=bv.67720277,d.b2 k.

DeLuca, C., and A. Bellara. 2013. "The Current State of Assessment Education: Aligning Policy, Standards, and Teacher Education Curriculum." *Journal of Teacher Education* 64 (4): 356–372.

Driscoll, A., and S. Wood. 2007. "Alignment: Making Explicit Connections between Teaching Decisions and Learning Outcomes." In *Developing Outcomes-Based Assessment for Learner Centered Education: A Faculty Introduction*, edited by A. Driscoll and S. Wood, 156–175. Sterling, VA: Stylus Publishing.

Ewell, P. T. 1997. Identifying Indicators of Curricular Quality. In *Handbook of the Undergraduate Curriculum: A Comprehensive Guide to Purposes, Structures, Practices, and Changes*, edited by J. G. Gaff, J. L. Ratcliff, and Associates, 608–627. San Francisco, CA: Jossey-Bass.

Hansen, E. J. 2011. *Idea-Based Learning: A Course Design Process to Promote Conceptual Understanding*. Sterling, VA: Stylus Publishing.

Harden, R. M. 1999. "What is a Spiral Curriculum?" *Medical Teacher* 21 (2): 141–143. doi:10.1080/01421599979752.

Harden, R. M. 2001. "AMEE Guide No. 21: Curriculum Mapping: A Tool for Transparent and Authentic Teaching and Learning." *Medical Teacher* 23 (2): 123–137.

Hatzakis, T., M. Lycett, and A. Serrano. 2007. "A Programme Management Approach for Ensuring Curriculum Coherence in IS (Higher) Education." *European Journal of Information Systems* 16 (5): 643–657.

Hill, A. 2007. "Continuous Curriculum Assessment and Improvement: A Case Study." In Curriculum Development in Higher Education: Faculty-Driven Processes and Practices. *New Directions for Teaching and Learning, 112*, edited by P. Wolf and J. Hughes. San Francisco, CA: Jossey-Bass.

Hsieh, H. F., and S. E. Shannon. 2005. "Three Approaches to Qualitative Content Analysis." *Qualitative Health Research* 15 (9): 1277–1288. doi:10.1177/1049732305276687.

Jackson, P., ed. 1992. *The Handbook of Research on Curriculum: A Project of the American Educational Research Association*. New York: Macmillan.

Jacobs, H. H. 2004. *Getting Results with Curriculum Mapping*. Alexandria, VA: Association for Supervision and Curriculum Development.

Kamali, F., and N. Yamani. 2012. "Applications and Benefits of Curriculum Mapping: A Systematic Review of International Documents." *Iranian Journal of Medical Education* 11 (9): 1091–1103.

Knight, P. T. 2001. "Complexity and Curriculum: A Process Approach to Curriculum-Making." *Teaching in Higher Education* 6 (3): 369–381.

Kopera-Frye, K., J. Mahaffy, and G. M. Svare. 2008. "The Map to Curriculum Alignment and Improvement." In *CELT: Collected Essays on Learning and Teaching, Vol. 1*, edited by A. Wright, S. Murray, and M. Wilson, 8–14. Windsor, ONT, Canada: Society for Teaching and Learning in Higher Education.

Kurz, A., S. Elliot, J. Wehby, and J. Smithson. 2009. "Alignment of the Intended, Planned, and Enacted Curriculum in General and Special Education and Its Relation to Student Achievement." *Journal of Special Education* 44 (3): 131–145.

Lawson, R., T. Taylor, J. Herbert, E. Fallshaw, E. French, C. Hall, S. Kinash, and J. Summers. 2013. *Hunters and Gatherers: Strategies for Curriculum Mapping and Data Collection for Assuring Learning*. Sydney, NSW: Office of Learning and Teaching, Department of Industry, Innovation, Science, Research and Tertiary Education, Australia. Doctoral dissertation, University of Southern Queensland.

Madiba, M. 2011. "Curriculum Mapping as Inquiry in Higher Education." In *Curriculum Inquiry in South African Higher Education: Some Scholarly Affirmations and Challenges*, edited by E. M. Bitzer and M. M. Botha, 371–388. Stellenbosch: Sun Media.

Margolis, E., ed. 2001. *The Hidden Curriculum in Higher Education*. New York: Routledge.

Martone, A., and S. G. Sireci. 2009. "Evaluating Alignment between Curriculum, Assessment and Instruction." *Review of Educational Research* 79 (4): 1332–1361.

National Policy Board for Educational Administration. 2011. *Educational Leadership Program Standards: 2011 Building Level*. Washington, DC: Author.

Newble, D., P. Stark, N. Bax, and M. Lawson. 2005. "Developing an Outcome-Focused Core Curriculum." *Medical Education* 39 (7): 680–687.

Oliver, Beverley, Sonia Ferns, Barbara Whelan, and Linda Lilly. 2010. "Mapping the Curriculum for Quality Enhancement: Refining a Tool and Processes for the Purpose of Curriculum Renewa." *AuQF2010 Quality in Uncertain Times*, Jun 3, 2010, pp. 80–88. Gold Coast: Australian Universities Quality Agency.

Orr, M. T., A. O'Doherty, and M. Barber. 2012. *Designing Purposeful and Coherent Leadership Preparation Curriculum: A Curriculum Mapping Guide*, 1–24. Charlottesville, VA: University Council for Educational Administration. http://schoolturnaroundsupport.org/sites/default/files/resources/small_CurriculumMappingGuide_forLeadershipDevelopment.pdf.

Perlin, M. S. 2011. "Curriculum Mapping for Program Evaluation and CAHME Accreditation." *Journal of Health Administration Education* 28 (1): 33–53.

Pinar, W. F. 2014. *International Handbook of Curriculum Research*. New York: Routledge.

Porter, A. C., J. L. Smithson. 2001. *Defining, Developing and Using Curriculum Indicators.* (CPRE Research Report Series RR-048). University of Pennsylvania, Consortium for Policy Research and Education.

Robley, W., S. Whittle, and D. Murdoch-Eaton. 2005. "Mapping Generic Skills Curricula: A Recommended Methodology." *Journal of Further and Higher Education* 29 (3): 221–231.

Spencer, D., M. Riddle, and B. Knewstubb. 2012. "Curriculum Mapping to Embed Graduate Capabilities." *Higher Education Research & Development* 31 (2): 217–231.

Stake, R. E. 2005. "Qualitative Case Studies." In *The Sage Handbook of Qualitative Research*. 3rd ed., edited by N. K. Denzin and Y. S. Lincoln, 443–466. Thousand Oaks, CA: Sage.

Sumsion, J., and J. Goodfellow. 2004. "Identifying Generic Skills through Curriculum Mapping: A Critical Evaluation." *Higher Education Research & Development* 23 (3): 329–346.

Tariq, V. N., E. M. Scott, A. C. Cochrane, M. Lee, and L. Ryles. 2004. "Auditing and Mapping Key Skills within University Curricula." *Quality Assurance in Education* 12 (2): 70–81.

Uchiyama, K. P., and J. L. Radin. 2009. "Curriculum Mapping in Higher Education: A Vehicle for Collaboration." *Innovative Higher Education* 33 (4): 271–280.

Udelhofen, S. 2005. *Keys to Curriculum Mapping: Strategies and Tools to Make It Work*. Thousand Oaks, CA: Sage.

Veltri, N., H. Webb, A. Matveev, and E. Zapatero. 2011. "Curriculum Mapping as a Tool for Continuous Improvement of IS Curriculum." Report of *The Journal of Information Systems Education* 22 (1): 31–42. http://www.thefreelibrary.com/Curriculum+mapping+as+a+tool+for+continuous+improvement+of+IS...-a02574 34962

Wahlstrom, K. L., K. S. Louis, K. Leithwood, and S. E. Anderson. 2010. *Investigating the Links to Improved Student Learning: Executive Summary of Research Findings*. Washington, DC: Wallace Foundation. http://www.wallacefoundation.org.

Walker, E. 2003. *Fundamentals of Curriculum: Passion and Professionalism*. Mahwah, NJ: Lawrence Erlbaum Associates.

Webb, N. L. 1997. *Research Monograph No. 6: Criteria for Alignment of Expectations and Assessments in Mathematics and Science Education*. Washington, DC: Council of Chief State School Officers.

Webb, N. L. 1999. *Alignment of Science and Mathematics Standards and Assessments in Four States*. Washington, DC: Council of Chief State School Officers.

Webb, N. L. 2005. *Webb Alignment Tool: Training Manual*. Madison, WI: Wisconsin Center for Education Research. http://www.wcer.wisc.edu/WAT/index.aspx.

Webb, N. L. 2007. "Issues Related to Judging the Alignment of Curriculum Standards and Assessments." *Applied Measurement in Education* 20 (1): 7–25.

Willett, T. G. 2008. "Current Status of Curriculum Mapping in Canada and the UK." *Medical Education* 42 (8): 786–793.

Wolf, P. 2007. "A Model for Facilitating Curriculum Development in Higher Education: A Faculty-Driven, Data-Informed, and Educational Developer-Supported Approach." *New Directions for Teaching and Learning* 117: 15–20.

Yaskin, D. and G. Ritter. 2012. *Method and System for Academic Curriculum Planning and Academic Curriculum Mapping. Patent No. 8,265,968*. Washington, DC: US Patent and Trademark Office.

Yin, R. K. 2002. *Case Study Research, Design and Methods*. 3rd ed. Newbury Park, CA: Sage.