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Curriculum conceptualisations and the University of Edinburgh

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Introduction

This paper aims to provide a brief overview of the ways in which higher education curriculum is defined and conceptualised. This is important because how we define and conceptualise curriculum affects the ways we design any future curriculum. There is substantial critique of rational, linear models of curriculum focused wholly on content and structure (Barnett & Coate, 2005; Flinders & Thornton 2013; Grundy 1987), and many researchers have proposed understanding the curriculum as a process (Boomer 1992; Breen & Littlejohn 2000; Knight, 2001; Noddings 2013; Pinar 1975). Arguments for process based definitions are often based on recognising the latin root of curriculum meaning 'a race' and its derivative 'currere' as meaning to run the race – or the curriculum process (Bron, Veugelers & Bovill, 2016; Hicks, 2018; Pinar, 1975). A range of curriculum conceptualisations are contained in this paper, but one possible guiding definition informed by the literature is:

An active and emergent process involving student and staff interaction and negotiation of the whole experience of learning.

This includes teaching practices, assessment, values, ethics, ways of being and becoming, ways of knowing, application of knowledge - learning from, taking a critical stance on, and contributing to, the global and local world around us.

The future vision of curriculum for the University of Edinburgh is a powerful way in which the institution states its priorities and its values in relation to learning, teaching, assessment, disciplinary knowledge, the student experience, and the purpose of a degree from the University. The curriculum is enacted and experienced by students and staff, and therefore meaningful and ongoing student and staff engagement in curriculum processes are key.

This paper is in two parts: part 1 focuses on key considerations for large scale curriculum transformation, and part 2 focuses on higher education curriculum models.

Part 1: Key considerations for large scale curriculum transformation

Clarity of purpose and underpinning values

The University needs to be clear about the purpose of any curriculum transformation, and to communicate this purpose clearly and consistently. One way of achieving this is to create a set of distinct overarching values or principles at the institutional level¹, which then underpin and inform curriculum transformation at College and School level. These values are likely to connect to existing strategic priorities, but might include, for example, a curriculum that:

- Uses evidence-based teaching and assessment approaches
- Has research experience embedded throughout
- Invites students to be active agents in their own learning*
- Is inclusive and celebrates diversity*
- Is relevant and develops allegiance to local and global communities*
- Supports graduate attribute development
- Fosters community, belonging, and engagement through positive relationships*
- Enables inter-disciplinarity and connectivity*
- Values creativity, curiosity and even failure*

The curriculum is a process

All too often, curriculum is considered as synonymous with the syllabus. Yet this knowledge-centric, static version of curriculum as the disciplinary 'canon' has been critiqued and is considered to be outdated. We need to recognise that most higher education curriculum models (see part 2) involve dynamic versions of curriculum focused on: ways of knowing, development of foundational knowledge and co-construction of knowledge; application of knowledge; problem-solving, and developing critical thinking; integration of ideas, theories, and subjects; ways of being and becoming that enable personal development through engagement with global ideas and challenges; learning how to learn; drawing upon students' previous and current experience to ensure relevance and foster student engagement; student participation in, and development through being part of, disciplinary communities; exposure to a diversity of people, communities, values and practices; and development of civic values in recognition of the changing nature of the world students will contribute to (see for example Barnett & Coate, 2005; Fink 2003; 2007; Toohey, 1999).

Disciplinary and interdisciplinary considerations

Many research studies highlight the importance of ensuring disciplinary knowledge is a focus of higher education curriculum (Ashwin 2014; Maton 2013, Young 2013), but in addition, there is a need for interdisciplinary and boundary-crossing curriculum models to enable students to develop their knowledge, skills and attributes appropriately for an increasingly complex world (Anderson & McCune 2013; Barnett 2007; Tassone et al 2018). Another issue we need to be aware of is the potential benefits of creating institution-wide curriculum visions and values that are by their nature generic, but which must be translatable into

¹ The University of Edinburgh Strategy 2030 states that we will take 'a values-led approach to teaching'.

* These values are informed by the University of Edinburgh Strategy 2030



multiple micro-level curricula at programme and course level in different disciplinary and interdisciplinary contexts.

Students and staff co-creating curriculum

Many researchers now recognise the powerful possibilities of meaningful student involvement in curriculum design. Students are key stakeholders in their own learning, and involving their multiple perspectives in curriculum design enhances the relevance of curriculum to students as well as their experiences of the curriculum. Student-staff co-created curriculum leads to many positive outcomes shared by students and staff, for example: enhanced engagement and motivation for learning and teaching; increased meta-cognitive awareness of learning and teaching and a more developed sense of identity; and enhanced classroom practices (Cook-Sather, Bovill & Felten 2014). It can be helpful to distinguish between co-creation *of* the curriculum and co-creation *in* the curriculum. Co-creation *of* the curriculum involves co-design of a macro-level institutional curriculum or a programme or course, usually before the curriculum, programme or course takes place, and often involving only a selected group of students. In contrast, co-creation *in* the curriculum involves co-design of learning and teaching within a curriculum, programme or course as it takes place, and often involving all students in the class or cohort (Bovill, 2020; Bovill & Woolmer, 2019).

Decolonising the curriculum

In recent years it has been increasingly recognised that curriculum is not politically neutral. One of the early and common understandings of decolonising curriculum was related to the need to examine the dominance of white men in many programme and course reading lists. Whilst many referenced works were relevant and significant to particular curricula, the absence of literature written by women, people of colour, from different religious beliefs, and from the global south were particularly noticeable. However, the concept has grown to acknowledge that curriculum is about far more than reading lists. While reading lists give an indication of important concepts and ideas explored within a curriculum, decolonisation also involves creating spaces for dialogue between all students and staff about cultures, how ideas and knowledge are framed and who decides what knowledge is considered legitimate knowledge (Shay & Peseta 2016)(see also Bernstein in part 2).

High impact practices

In the USA, there has been a great deal of interest in High Impact Practices (HIPs), which are those interventions and activities that undergraduate students undertake that have been demonstrated through research to have a positive impact on student outcomes. The 11 practices currently recognised as HIPs are: first year seminars; writing intensive experiences; collaborative assignments and projects; capstone projects; undergraduate research; study abroad; internships; service learning; e-portfolios; common intellectual experiences; and learning communities. Kuh, O'Donnell & Schneider (2017) argue that "...what makes a HIP developmentally powerful is that all of them induce high levels of student engagement in substantive tasks that in turn deepen learning"(p10). While there has been some critique of the HIPs research, and that some of these practices are specific to the US context, many of the HIPs translate well into UK higher education. Researchers agree that what is important, is that HIPs are done well;

it is not sufficient to undertake service learning if it is badly organised and there is no embedding in the curriculum of discussion and reflection on these experiences. Usefully, HIPs share some key characteristics which can inform curriculum design: performance expectations set at appropriately high levels; significant investment of concentrated effort by students over an extended period; interactions with faculty and peers about substantive matters; experiences with diversity, wherein students are exposed to and must contend with people and circumstances that differ from those with which students are familiar; frequent, timely, and constructive feedback; opportunities to discover relevance of learning through real-world applications; public demonstration of competence; and periodic, structured opportunities to reflect and integrate learning (Kuh, O'Donnell & Schneider, 2017).

While the majority of students experience positive outcomes from HIPs, perhaps one of the most impressive outcomes is the disproportionately positive outcomes for traditionally under-served groups (Finlay & McNair, 2013). Also benefits have been seen from combining several HIPs: e.g. if a student undertakes an internship (HIP 1), adding a requirement to complete an e-portfolio (HIP 2), which asks the student to complete a structured reflection (one characteristic of successful HIPs) as part of the e-portfolio, before, during and after the internship, can enhance the impact of the internship. A key message from HIPs research is to do them well or not at all.

Graduate attributes

Graduate attributes are the skills and abilities, attitudes and mind-sets which students are supported to develop at University. We need to ensure we embed intentional opportunities to support students to develop these skills and mind-sets within students' curricular and extra-curricular experiences. At the University of Edinburgh, we should be guided by these aspirations for students, to provide explicit opportunities for students to develop graduate attributes at all stages of study.

Curriculum structure and architecture

At institutional level, curriculum design often focuses on strategic priorities. Likely considerations include how we ensure the added value of a four year degree in Scotland in contrast to three year degrees in the rest of the UK, or whether we should introduce more interdisciplinary courses in the early years of University of Edinburgh degrees.

First year curriculum design appears to be crucial to student success, with evidence suggesting the importance of: understanding students' abilities on entry; clarity about desired graduate attributes and desired outcomes; deciding on a coherent curriculum design process including feedback from key stakeholders; defining overarching programme aims such as themes, aspirations and professional requirements; and defining key elements of programme content (Bovill et al 2011). In addition, researchers highlight the importance of embedding the development of academic skills throughout the programme of study; integration of early feedback on performance; embedding research-based and enquiry-led teaching; and alignment of curricula with appropriate

administrative and support structures (Bovill et al 2011; Krause et al 2005; Kift & Nelson 2005).

Liberal arts education in the US is one example where interdisciplinary courses often feature in students' early years of study. There are mixed views of the effectiveness of liberal arts education (due partly to the varied quality of offerings across the US), but with useful analysis from the American Association of Colleges and Universities suggesting there is still a good deal of value in liberal arts education for future employment (Pascarella 2021).

At programme level, it is important to consider what Chambliss & Takacs (2014) call 'the arithmetic of engagement', "...even a small number of engaging people and events, properly located, can have a disproportionately positive impact on students' educational careers...out of perhaps twenty-five teachers a student has during college, she needs only one or two 'great' ones to feel that she has had an excellent academic experience...conversely, a single poor professor, teaching a large introductory course, can easily destroy scores of students' interest in a discipline" (p68). This has enormous implications for the design of large first year courses, the quality of teaching staff, and the academic professional development we offer to teaching staff. When thinking about curriculum structure, we may also need to consider reviewing some of the many regulatory anomalies within our degree structures. For example, why many UoE programmes design courses at SCQF level 8 in both year 1 and 2, rather than the more usual first year in Scotland taught at level 7 followed by second year at level 8. Why some undergraduates can apply for a 5 year masters programme on entry and others have to apply for a masters degree on completing their undergraduate degree.

At course level, we might wish to discuss the relative advantages and disadvantages of 'short fat' courses versus 'long thin' courses. Short fat courses enable students to immerse themselves in a subject, and they enable a more agile offer, if we wish for courses to be available across Schools and Colleges. However, they run the risk of being seen as discrete and too much choice can lead to a lack of clarity and coherence in a student's degree. Long thin courses enable students to develop knowledge and skills over time, they allow space to revisit concepts in increasingly greater complexity, and they enable integration of ideas. They can, however, be more difficult to use in inter-connecting ways between different degrees. EFI are moving towards very short fat courses, by offering many smaller 10 credit courses and with contact time taking place over a 48 hour period. These are highly convenient for students with different responsibilities, but risk being seen as discrete and unconnected unless explicit attention is paid to enable synthesis of learning.

Another factor to consider is whether to create 'windows' within the curriculum, which provide students with the opportunity to undertake study abroad, service learning, community based projects or placements. For example Elon University, North Carolina, USA has created a short 3 week semester in January to ensure all students get the chance to study abroad or 'study away'. Those students who

are in a year where they are not studying abroad undertake one intensive 3 week course, which enables students to immerse themselves in one subject rather than trying to juggle multiple courses (Elon University, 2021). Similarly, Victoria University, Melbourne in Australia has introduced the First Year College, where they have hired more faculty and teaching assistants to ensure that all first year classes are smaller, and the courses run for 3-4 weeks so that students only study one class at a time (Victoria University, 2019).

Other concepts influencing the curriculum at disciplinary level

Although there is not the space in this brief document to describe ideas in depth, or to offer a comprehensive list, there are many influential concepts that should also inform university curricula.

- Threshold concepts (Meyer and Land 2003) – recognises that there are key concepts that students find troublesome, but when grasped, open up new ways of understanding a subject. Once grasped these understandings are irreversible. It is important to ensure these concepts are given due attention in the curriculum.
- Approaches to learning and studying (Marton and Saljo 2005) – research demonstrating that students adopt surface, deep or strategic approaches to studying in response to cues from the learning context. For example, if we overload students with assessments for the same deadline, students are more likely to adopt a surface approach to studying.
- Assessment *of, for* and *as* learning (Earl 2003) – recognition that the role of assessments is not just to test whether students know something or not, but that assessments can actually offer useful feedback to support students to further develop knowledge and skills, and that if designed well, students can learn through the assessment process.
- Programme level assessment (Jessop, El Hakim & Gibbs, 2014) – the importance of looking at assessment at a programme level across a degree. If we design assessment at course level without considering how each assessment integrates into an assessment plan across a degree we risk over-assessing students, missing the opportunity for students to use the feedback they receive to inform future assessments, and overlooking the need for students to develop assessment literacy over time. The University's Leading Enhancement in Assessment and Feedback (LEAF) initiative has provided some rich data about the value of mapping assessment across programmes.

Part 2: Higher education curriculum models

Any large scale curriculum transformation needs to consider the ways in which the curriculum is being conceptualised, in order to create a shared vision of what is being reviewed or designed. Curriculum design models from schools education tend to be more numerous than those from higher education, but increasing attention is being paid to higher education curriculum (Hicks, 2018). The higher education curriculum models below are commonly referenced and useful models.

Barnett and Coate (2005) Knowing, acting and being framework	Barnett and Coate (2005)'s curriculum framework, based on empirical research in the UK, highlights the importance of balancing students' development of 'knowing', 'acting' and 'being' if they are to be prepared for a complex future world. Typically, higher education curricula emphasise content knowledge or 'knowing'. 'Acting' refers to putting into practice approaches that are common in a discipline but often tacit to disciplinary experts, sometimes considered to be the skills needed within a particular discipline. And finally, 'being' refers to the development of the student as a person, encompassing the idea of a student's stance in relation to the world or 'being-in-the-world', self-realisation and capability. Barnett and Coate (2005) highlighted that different disciplines place different emphasis on knowing, acting and being. These three building blocks of curriculum align well with work from the University of Edinburgh, by Entwistle (2003) and McCune and Hounsell (2005), who described the need for students to learn 'ways of thinking and practising' (WTP) in the subject. For example, students need to learn biology knowledge as well as how to be a biologist.
Fraser and Bosanquet (2006) Staff definitions of higher education curriculum	Australian researchers Fraser and Bosanquet carried out research to examine staff definitions of curriculum. Participants in their study defined curriculum in four ways: "A: the structure and content of a unit (subject); B: the structure and content of a programme of study; C: the students' experience of learning; D: a dynamic and interactive process of teaching and learning" (Fraser and Bosanquet 2006, p272). Categories A and B are similar to one another but differentiated by the different levels or scope of the curriculum. Category C expands the idea of the curriculum to be more than just structure and content, to include students' perspectives of learning – the teacher provides a framework within which students negotiate the curriculum. Category D sees the curriculum as involving an integral role for students as collaborators in designing curriculum and co-constructing knowledge alongside academic staff. Both categories C and D move "...away from curriculum as a product provided for students, to a process that enables student learning" (p274).
Toohey (1999) Five approaches to curriculum design	Toohey argues that our own values, attitudes and beliefs are crucial influences on the curriculum design process. She describes five different approaches to course design, influenced by underpinning ideologies: 1) <i>Traditional or discipline based approach</i> – knowledge exists independently, programmes are structured around important concepts. Students are usually required to gain a broad knowledge of the field and methods of inquiry used in the discipline; 2) <i>Performance or systems based approach</i> – focuses on how to achieve desirable goals and how to measure results. Learning outcomes are stated in advance and in behavioural terms, while teaching focuses on how to help students achieve effective performance of the outcomes (connects to Biggs' constructive alignment model below); 3) <i>Cognitive approach</i> – focused on developing the mind, strengthening intellectual capacity and helping students learn how to learn; 4) <i>Experiential or personal relevance approach</i> – education needs to meet the needs of learners and therefore knowledge and skills are highly valued if they have personal significance and usefulness. Learners and teachers collaborate in planning and implementing learning opportunities; and 5) <i>Socially critical approach</i> – aims for students to develop a critical consciousness

becoming aware of societal problems and developing motivation to change society for the better. Societal values are exposed and understandings are critiqued collaboratively. A curriculum can be informed by more than one of these approaches, but if it is informed by quite contrasting ideological positions, this can lead to a lack of coherence.

Fink (2003; 2007) Taxonomy of significant learning	Fink (2003; 2007) argues that curriculum design needs to focus on elements that lead students to have significant learning experiences. Fink's taxonomy of significant learning consists of six elements: 1) Foundational knowledge - the facts, principles and relationships that make up the content of a course; 2) Application – what students are required to do with foundational knowledge including e.g. physical skill or problem solving, decision making or creative thinking; 3) Integration – identifying similarities or interactions between subjects, theories, trends; 4) Human dimension – learning about themselves or how to interact with others; 5) Caring – when students change their feelings, interests, values and motivations in relation to a subject; 6) Learning how to learn – we can't teach students everything, so we need to help them learn how to keep learning. Fink argues, the more elements in a course, the more significant the overall learning experience for the student.
Biggs (1996) Constructive alignment model	The constructive alignment model is a very common model of course and programme design in UK Higher Education. "The term 'constructive' refers to the constructivist theory of education where learners create and construct knowledge and meanings by making sense of and assimilating new experiences and information in relation to their existing knowledge. The term 'alignment' refers to ensuring that all the elements of curriculum design are inter-linked. Curriculum developers start by designing the broad aims and intended learning outcomes for a course before considering how students will be assessed on their achievement of the intended learning outcomes...The assessment aligns with teaching methods and with the evaluation of the curriculum, so that all elements are coherent"(Bovill & Woolmer 2019, p411). Ashwin et al. (2015, p161) highlight that "we are, through learning outcomes, attempting to move away from a focus on teaching, what we do, to a focus on learning, what the student does". The constructive alignment model regularly receives criticism for suggesting learning is predictable and linear and for its prioritisation of outcomes over the process of learning.
Berstein (2000) What counts as 'valid knowledge'	Bernstein's work has been particularly influential among sociologists and in schools education. More recently, scholars in the UK, South Africa and Australia have drawn on Bernstein's work to inform debates about higher education curriculum. "Bernstein (2000) proposed that the choices made in any curriculum highlight what counts as valid knowledge. These choices focus on selection (the content of the curriculum), sequencing (what order/progression), pacing (how much time/credit), and evaluation (what counts for assessment). These choices tend to legitimate certain practices over others" (Bovill & Woolmer, 2019, p413). His work highlights important political questions about who decides what and who has legitimacy in the curriculum. Yet, "...it is perhaps worth noting the irony of the continued reliance on Bernstein's (white, male) curricular theories within

much of the current discussion of decolonising the curriculum in South Africa” (Bovill & Woolmer, 2019, p417).

Glossary of other key concepts related to curriculum conceptualisations

Spiral curriculum – where topics are revisited in an iterative manner throughout a course or programme. Each time the topic is revisited, knowledge should be deepened and built upon.

Vertical threads – some key underpinning subjects run ‘vertically’ throughout the curriculum. For example a vertical thread of health promotion as a concept in a health/medical curriculum would be referred to regularly within all the other ‘horizontal’ courses such as respiratory diseases or care of the elderly. The vertical threads are ideas that are visited within each of the courses. It is possible to have multiple vertical threads, embedded into different courses throughout a curriculum.

Hidden curriculum – usually refers to the norms, values and beliefs transmitted (often unintentionally) during teaching, which are not referred to within the formal curriculum, but which can impact significantly on the learning experience.

The intended & enacted curriculum – the intended curriculum usually refers to the more formal curriculum, officially set out in a syllabus or verbally stated, and the enacted curriculum is the actual learning experiences of students. There can be quite substantial differences between the two.

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