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Curriculum and assessment for the knowledge society: interrogating experiences in the Republic of Ireland and Queensland, Australia

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The 'knowledge society' has become a central discourse within educational reform. This article posits that the impact of the knowledge society discourse on curriculum and assessment has led to the emergence of what the authors term a new-form/re-form curriculum, and it asks whether what is transacting in contemporary movements in curriculum is less the reform of curriculum and more the emergence of a new-form/re-form curriculum. What is emerging is well beyond the discussions of outcomes and curriculum alignment that characterised much curriculum reform effort in the late 1990s. In this new-form/re-form curriculum 'content' is displaced by 'skills' and 'knowledge acquisition' by 'learning'. Curriculum coverage is replaced by learner engagement. In this context, assessment also begins to take on new-form/re-form. Assessment now engages and promotes learning as process rather than as product. Two cases – the Republic of Ireland and Queensland, Australia – are analysed and compared to illustrate this shift in the conceptualisation of curriculum and assessment. Consideration is given to the possibility that this new-form/re-form curriculum represents a settlement in the contestation associated with learning outcomes and their perceived technical rationality and market focus. The paper concludes that the new-form/re-form curriculum is emerging in locations as diverse as Ireland and Queensland.

Keywords: curriculum and assessment re-form; knowledge societies; learning curriculum

Introduction

What is the orientation and approach of curriculum and assessment for the knowledge society? How will our curriculum and assessment practices prepare young people for their unpredictable futures dominated by risk? What forms should curriculum and assessment take to prepare today's young people for the challenges of tomorrow? Across developed education systems, questions like these are exerting increasing pressure on those who design, lead and evaluate curriculum and assessment reform. Curriculum contestation has become political and public as the specification of how and what students learn becomes the focus of economic as well as educational debate (Cuban 2004). Since the early 1990s these debates have focused on the specification of curriculum as learning outcomes. These outcomes-based reforms have directed attention to what is learned rather than what is taught. Yet, despite the often detailed specifications of learning outcomes, they gave

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considerable freedom to teachers as to how the ends were achieved. While outcomes-based curriculum featured in Australian educational reform in the late twentieth and early twenty-first centuries, it was less significant in Ireland over the same period. Brady's (1996) analysis of the impact of the outcomes reform in the mastery learning programme in Australia highlights the freedom given to teachers, and presents some of the successes as clarification of teacher intention, better selection of content to meet particular student needs and greater inclusion of students with a wide range of ability. In Ireland, the goals of both curriculum and assessment tend to be vague in nature and generic in form (OECD 1991; Looney 2001; Hall and Kavanagh 2002). The pressure for outcomes-based curriculum, from either neo-liberal (Smyth and Dow 1998) or equity-oriented groups (Hargreaves and Moore 2000) has been largely absent from Irish education reform debate until recently. In 2004, the Irish government's Enterprise Strategy Group summed up the rationale for the decade of inertia, and the more recent pressures. The Group asserted that Ireland's education had 'served the country well for many years' but 'in the knowledge economy it faces increasing challenges' (Enterprise Strategy Group 2004, 51).

These important differences in the reform histories of Queensland and Ireland will be revisited in our interrogation of some current aspects of curriculum and assessment developments in these jurisdictions. This interrogation will also consider the unfolding of an uncertain future that has made the traditional 'put it on the curriculum' response to social, economic or cultural problems unsustainable.

We believe it is important to analyse the 'new' contents of education presented by curriculum and assessment reform trajectories in both Ireland and Queensland. Examining the quality and formats of education contents from sociocultural and political perspectives provides a better understanding of interdependent interactions and prevents an approach that is strongly technologically deterministic. Such determinism is even more questionable in the face of the newest set of pressures on curriculum. To begin, we provide our conceptualisation of the 'knowledge society', note its striking absence from contemporary curriculum discourse, and introduce the construct of new-form/re-form curriculum in the educational context of the twenty-first century. These concepts are used in our discussion and analysis of the two case-studies of curriculum and assessment change.

The knowledge society

The concept of the knowledge society is one of the most pervasive in the rhetoric of educational reform. The knowledge society is neither a stable nor a well-defined concept. Its boundaries are fluid but its power is undeniable and ubiquitous. As such, it is functioning as discourse within educational reform. Of note is that, in recent times, emerging consensus on climate change is challenging the power of this discourse, or at least giving rise to concern that knowledge may not be enough to deal with its consequences.

The term 'knowledge society' was first used in the late 1960s (Drucker 1969) and was developed in the 1970s, together with notions of lifelong education for all and 'learning societies'. In *Towards knowledge societies*, a UNESCO World Report (2005, 19), it is clear that 'knowledge societies are not limited to the information society' and '[w]hile information is a knowledge-generating tool, it is not knowledge itself'. There is a need for critical judgement and thinking skills to analyse, sort and incorporate items considered most interesting otherwise information will never be anything but a mass of indistinct data. Cognitive and critical thinking skills are needed to survive this information explosion and to discern whether the information is useful or useless (UNESCO 2005, 19).

Similarly the Commission of the European Communities noted that

> The emergence of the knowledge society has created a demand for key competencies in all spheres of life: personal, public and professional. Ways of accessing information and services have changed, as well as the very structure and makeup of society itself. (2005, 3)

In the knowledge society, what are the skills and capabilities required of young people to make their contribution to the future? Multiple voices from a range of sources claim that what is now paramount for young people is the need to become better learners and generators of knowledge (Hargreaves 2003; Deakin-Crick et al. 2004; Reid 2005). As the OECD's Andreas Schleicher announced, the challenge is clear: 'The most effective modern economies will be those that produce the most information and knowledge – and make that information and knowledge easily accessible to the greatest number of individuals and enterprises' (Schleicher 2006, 4).

In the Asia-Pacific region, too, Singapore has launched a vision of the 'Thinking Schools Learning Nation', which has led to the introduction of a new GCE A-level subject, 'Knowledge and Inquiry' and reviews of the curriculum and assessment system for the development of creative thinking and learning skills to meet new economic demands (Tan 2006).

Education and knowledge society discourse

The changes to the education systems in Ireland and Queensland are responses framed, and fuelled, by knowledge society discourse. The emergence of the knowledge worker as the powerhouse of successful economies has generated new demands on education systems and on schooling, particularly as education becomes what Castells called 'the key quality of labour' (1998, 345) in the knowledge society. Successful knowledge workers are not characterised by being knowledgeable as traditionally understood, but by their ability to learn and re-learn and by their engagement with what Florida calls the new 'creative ethos' (2002, 21).

Hargreaves (2002) has analysed the implications of the knowledge society for schools, for teachers and for learners. While not the primary focus of this article, his dystopian vision of the standardised marketised school system fuelling the engines of economic growth is not unfamiliar to anyone working in educational reform in the twenty-first century. Of greater interest for this article is his vision of a school system for the knowledge society focused on learning – teacher learning as well as student learning:

> Teachers who are catalysts of the knowledge society must therefore try to make their schools into learning organisations where capacities to learn, and structures to support learning and respond constructively to change are widespread among adults as well as among children. (Hargreaves 2003, 20)

Increasingly, governments and employers are seeking graduates, citizens and employees with thinking skills, the ability to problem-solve and to be creative in the transformation of information and ideas. At the same time, educationalists are aware of the need for teachers and their students to understand the nature of learning and the need to teach learning skills (Hargreaves 2002; Broadfoot and Black 2004).

Claxton (2005) indicates that learning is learnable and is very much more complex than schooling has assumed. He predicts that this realisation will help direct curriculum development and education research in the future. He cautions that 'raising standards' as

evidenced through exam results is a limited view of how we should be preparing students for a lifetime of change in the twenty-first century. He suggests there is a need to:

- disseminate good practice in the sense of developing learning-to-learn;
- review the curriculum to analyse the extent to which the different stages offer a coherent programme for the development of 'learning power';
- 'coach beginning teachers in how to vocalise the processes of learning, to ''learn aloud'', and to model effective learning' at initial teacher education level and to use this perspective to inform national teacher training agencies and teaching councils;
- encourage parents to collaborate with schools in developing their children's 'learning power';
- 'develop new assessment instruments that enable students, their teachers and parents to keep track of their developing learning power so that they can feel a growing sense of achievement, not just in passing tests, but in becoming steadily more resilient, resourceful and reflective in the face of real difficulties' (Claxton 2005, 4).

Claxton's second recommendation – that associated with curriculum – is more useful in understanding developments in the Republic of Ireland, while his last recommendation is useful in explaining the relevance of developments in Queensland. Before moving on to the analysis of these case-studies it is important to explain what we mean by curriculum as new-form/re-form and it is here that Stenhouse's (1975) definition and conceptualisation of curriculum is useful.

Curriculum as new-form/re-form

Stenhouse defined curriculum as 'an attempt to communicate the essential principles and features of an educational proposal in such a form that it is open to critical scrutiny and capable of effective translation into practice' (1975, 4–5). He added that curriculum should be grounded in practice and is 'the means by which the experience of attempting to put an educational proposal into practice is made publicly available. It involves both content and method, and in its widest application takes account of the problem of implementation in the institutions of the educational system.' As a minimum, Stenhouse declared that 'a curriculum should provide a basis for planning a course, studying it empirically and considering the grounds for its justification' (ibid.). He viewed schools as research and development institutions, conducting research in curriculum and teaching in close collaboration with researchers for the growth of the research tradition in schools. His concern with this relationship between the two views of curriculum as intention and as reality is of interest to us. We agree with those (Green 2003; Lawton and Walsh 2004; Reid 2006) who believe that curriculum incorporates content and process that engages schools and teachers in professional creativity and knowledge generation. Thus we differ from Jonnaert and Ettayebi (2006), who suggest that the dominant model of curriculum continues to be underpinned by and supportive of a Tyleresque rational planning approach. We concur with their assertion that this technical model has become outdated for the knowledge age, but we suggest that the seeds of renewal already lie within existing curriculum practice and that a radical break from that practice is not required – hence our new-form/re-form label, a working title for the transformation currently underway.

The two case-studies presented in this article provide indicators of a re-framing of traditional curriculum discourse and an emergence of new-form/re-form curriculum that transcends both the ubiquitous tail-wagging-dog relationship between assessment and

curriculum, and the hegemony of the technical as prevalent in recent curriculum debates in Australia (see Donnelly 2004; Smyth 2006). In a paper prepared for the UNESCO International Bureau of Education, Jonnaert et al. suggest that basic concepts around competence and situated learning 'have not yet become sufficiently stabilised to serve as tools for curriculum development' (2006, 11). While the concepts are unstable, they are already operating as 'tools' for curriculum development.

First, to illustrate the new-form/re-form curriculum in terms of the curriculum and assessment change relationship, it is helpful to consider the following shifts in emphases. At the turn of the century there was a move away from assessing knowledge and products to assessing skills, understandings and processes. Also, rather than assessment occurring at the end of a course through external means, assessment was taking place throughout the course. A greater variety of methods and evidence was sought to demonstrate learning instead of relying only on written methods, and this was accompanied by a shift from norm referencing to criterion referencing, with less reliance on pass or fail summative assessments and more attention paid to identifying strengths and weaknesses formatively and recording positive achievement (Torrance 1997, 329).

Second, in relation to the dominance of the technical approach, as Smyth (2006, 317) concludes, what we have witnessed in Australia is a lack of national debate about crucial issues and significant complexities confronting schools, teachers and teacher educators; instead we have been subjected to trivialisation and an 'undignified slagging of public schools'. The rationale for a national curriculum in Australia has aroused debates around the argument for consistency (Graham and Martin 2006; Masters 2006; Reid 2006), when in reality what some see occurring is another example of the struggle for power and control by the Federal government over the States' agenda (Graham and Martin 2006; Smyth 2006). In our conceptualisation of curriculum as new-form/re-form we agree that 'curriculum is not only an education matter but also a democratic matter' (Reid 2006, 69). To continue:

> At a time when the Australian nation-state is grappling with the many challenges of globalisation, it is important to engage broad community discussion. ... The curriculum stands as one arena where people can discuss issues which go to the heart of community life, such as: What are the valued knowledges in societies and communities characterised by diversity? What are the capabilities that people need to live enriched lives? How can our education institutions represent and expand democratic life? (Reid 2006, 69)

These ideas and questions were taken up both in Ireland and in Queensland, where there has been research into modes of assessment for the knowledge society. The shift from assessment of product to assessment of process, the emergence of the curriculum as democratic site, and the context of the knowledge society discourse in education give rise to what we call new-form/re-form curriculum. Instead of the traditional idea of curriculum as the making public of an educational proposal, what we are now seeing is the very public knowledge society discourse being made 'educational' – transacting in educational reform movements. Are we moving from curriculum as a planning tool for content and teaching methodologies to it being a framework for learning and skills? Has the 'overloaded' curriculum finally imploded under the weight of content and expectations of its 'delivery', leaving in its debris the emergence of a re-form, new-form learning curriculum?

Ireland is one of the 'most globalised nations on earth'. Yet its government continues to exert enormous pressures on curriculum and assessment development. The ambitious reform proposals for upper secondary education recently published by the National Council for Curriculum and Assessment reflect the considerable influence of the

knowledge society discourse and the consequential emergence of new-form curriculum themes. In Queensland, Australia, in 2005, a research and development exercise found space to explore alternative approaches to assessment, to better understand how complex learning for the knowledge society could be assessed. The Queensland Assessment Task (QAT), incorporating a computer-based response, was an innovative and challenging assessment approach to evaluate the students' skills and learning, considered relevant for participation in the knowledge society (see Klenowski 2006).

Differences in social, cultural and political contexts impacted on the implementation strategies and approaches adopted in both cases. In the Ireland case, the focus was on curriculum-led reform; in Queensland, it was assessment that led the change process.

Ireland – introduction

This case draws on reform proposals for upper secondary education (called the 'senior cycle') prepared for the Department of Education and Science by the National Council for Curriculum and Assessment (NCCA), specifically on the proposals for key skills in the curriculum. The rationale for the key skills draws heavily on the knowledge society discourse, specifically on the need for schools to produce successful learners with a range of flexible skills applicable in a range of settings. The term 'key' is used by the NCCA to flag that these skills 'unlock' success in learning, communication, social interaction and collaborative working. Consultation has been a significant feature of the development of this proposal and it is noteworthy that earlier documentation used a range of terms including 'basic', 'generic' and 'transferable' (NCCA 2002, 50) and offered a two-tiered list of skills.

The rationale for key skills offered in the consultation paper was wide ranging but made explicit connections to knowledge society and knowledge economy discourse:

> As many western economies move from a manufacturing to a high-skills focus, congruence emerges between the skills identified as contributing to the knowledge economy and those that would be viewed as educationally appropriate at this level. (NCCA 2002, 51)

The authors of the consultation paper raised the issue of the assessment of key skills only in passing, noting that some countries assess key skills separately, while others 'treat them as aspirational attainments' (NCCA 2002, 50).

An online survey was a visible feature of the consultation process.[1] Respondents were asked to suggest how the learning environment at senior cycle might be changed in order to meet some of the challenges to be faced by students in the future. Three perspectives emerged from the responses. First, a high proportion of respondents agreed that 'learning for understanding' should take precedence over 'learning for examinations' (94%) and learners 'should receive more feedback on their work' (92%). There was support for a greater emphasis on basic skills (91%) but not for a greater academic focus.

From the second perspective, it was asserted that the future learning environment should be more varied and more appropriate to the needs of learners. There was support for 'more project-based learning' (82%) and for learning to 'have a more practical focus' (85%). More students supported project-based learning than did teachers, principals and parents. Overwhelming support existed for the students' involvement in 'more creative activities and problem-solving' (97%) and for the increased use of technology as a tool for learning (90%).

The third perspective reflected the view that the range of learning settings should be diversified to include the community and the workplace. A majority of respondents agreed

that there ought to be closer links between learning and work (85%), more community-based learning (77%) and greater opportunities to take out-of-school courses (77%). Respondents perceived project work to encourage student participation, develop critical thinking and problem-solving skills, provide greater success for students with differing abilities, and support collaborative learning. The contestation around project work and forms of assessment other than the written test reflects the considerable regard for the status and exchange value of the upper secondary school leaving examination in Ireland.

Ireland – the policy context

The upper secondary phase of education has been dominated by the end of school examination, the Leaving Certificate. This examination, taken in seven or eight subjects by some 60,000 students over two weeks in June of each year, is generally focused on traditional-style written papers with some practical work in art and technology subjects, and oral assessments in languages. Research projects and field studies have recently been introduced in the examinations for history and geography. This assessment is external, conducted by the State Examinations Commission. No teacher assessment is included.

The ban on the publication of examination results enshrined in the 1998 Education Act – a reaction to the league-table culture evolving in the United Kingdom at the time of the legislation – might lead to the conclusion that the Leaving Certificate examination is a low-stakes test. School or teacher accountability is not at stake, but entrance to the university course of choice is. The Central Applications Office converts Leaving Certificate examination results to a 'points' score used for selection for third level education. What is known as the 'points race' has come to dominate senior cycle education. In a much-discussed newspaper article of 2005, a student (Ruth) who scored the top mark of 600 points explained how she achieved this score: 'You can't get to grips with a huge subject like biology at school,' she said. 'You can only select a few topics and learn them really well. If you want a deep knowledge of biology, that's what university is for.' Ruth continued:

> There's no point in knowing about stuff that's not going to come up in exams. I was always frustrated by teachers who would say 'You don't need to know this for the exams but I'll tell you anyway.' I wanted my A1 – what's the point in learning material that won't come up in the exams? (*Irish Times*, 20 September 2005)

The NCCA's review of senior cycle, including the Leaving Certificate examination, arose from a review of that 'points' system for university entry.

Public submissions highlighted the negative impact of the Leaving Certificate examination. The authors of the report summarising the submissions refer to the emphasis generated by the Leaving Certificate examination on a narrow range of academic skills to the detriment of 'many other qualities which young people need for life and work' (Commission on the Points System 1998, 114). It was precisely to support greater connections between upper secondary education and those qualities that the NCCA initiated its review in 2002.

The data reported here is drawn from the online survey in response to the publication of the consultation document, *Developing senior cycle education. Consultative paper on issues and options* (NCCA 2002; see also Figure 1).

The results of the online survey showed a marked contrast between 'official' knowledge society discourse, and 'public' engagement with the issues. The survey incorporated a list of challenges that might be faced by learners in their future lives and respondents were asked to make a response. Table 1 shows what they considered to be most significant:
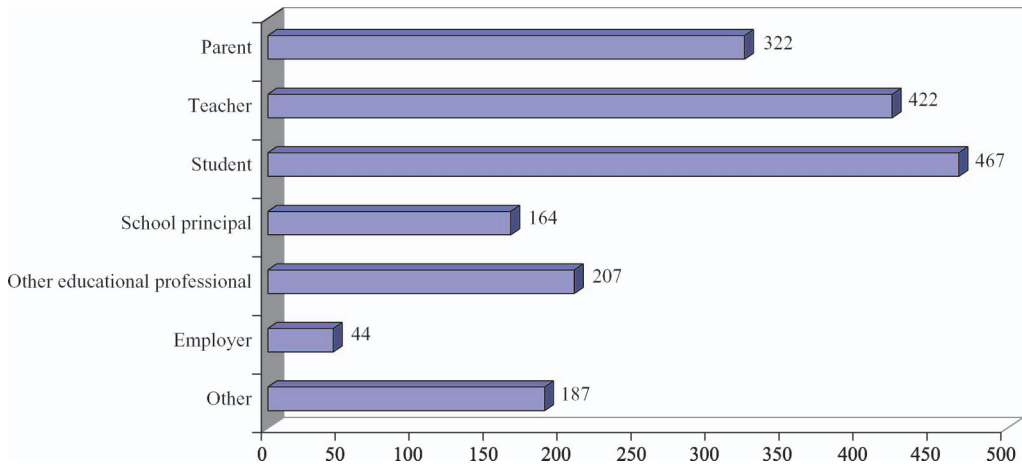
Figure 1.   Responses to online survey by category.

Table 1.   Responses to online survey of most significant challenges.

Communicating with others	81%
Coping with stress and insecurity	67%
Making successful decisions and choices in life	66%
Appreciating different cultures	62%
Finding gainful work	61%
Maintaining family and community life	60%

One student felt that, in the future, it would be important to appreciate different cultures, develop tolerance and 'create harmony'. Another student was clear that racism was a problem in Irish society and needed to be tackled. Other students pointed to being able to cope with stress and to attaining personal fulfilment. A number of respondents were unsure about the ability or suitability of schools to respond to the challenges to be faced by students in the future. Parents, teachers and principals questioned whether and how issues could be promoted within the curriculum, and what was the role of families and society in educating children. On a more practical level, a principal questioned whether schools had the resources to meet the issues that would be of importance to young people in the future.

New-form/re-form curriculum Ireland: focus on the senior cycle key skills

In the final report on the full consultation process a new list of key skills was offered as those most frequently identified:

- learning to learn;
- information processing;
- communication;
- personal effectiveness;
- critical thinking;
- working with others (NCCA 2003, 20).

The new key skills framework is presented in the wheel format shown in Figure 2.

While the key skills curriculum is still a work-in-progress, the NCCA has prepared working descriptions of each of the skills it proposes as 'key' for successful learning. For the NCCA, information processing helps students become more effective learners in an information-intensive environment. As well as developing the specific skills of accessing, selecting, evaluating and recording information, knowledge society learners will need to develop an appreciation of the differences between *information* and *knowledge*. They will need to learn that the mere availability of information and access to it does not generate knowledge, and that people need skills to create both personal and shared knowledge from information sources.

The acquisition of creative and critical thinking skills helps students to differentiate the various forms and patterns of thinking so that they can become better at higher-order reasoning and problem-solving. According to the working paper, as well as becoming more adept with different forms of thinking, students will need to understand that thinking is shaped by cultural and historical values.

The key skill of communicating helps students recognise the centrality of communication to human relationships and helps them to become better communicators in both formal and informal situations. As well as developing specific skills in a variety of media, they will need to form a deeper understanding of the power of communication.

Working together is a key skill for learning and for reaching both collective and personal goals (NCCA 2006, 5). This skill helps students recognise that working collectively can be a source of motivation, and can capitalise on all the talents in a group. For the NCCA, this skill is important for social cohesion and for engaging with diverse cultural, ethnic and religious groups.

The key skill of being personally effective helps young people to become more self-aware, and to build on that self-knowledge to develop personal goals and life plans. A significant dimension is to help young people recognise how to get things done, by garnering resources, and to act autonomously out of a well-developed set of values.

The NCCA working paper on key skills suggested that 'students growing knowledge about learning in general and their own learning in particular, contributes to their
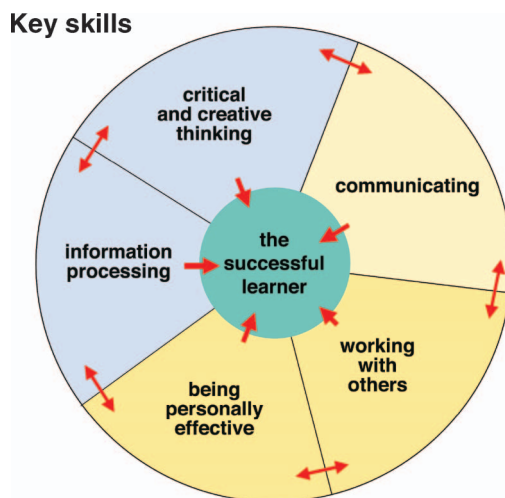

Figure 2.   The key skills framework (NCCA 2006, 4).

development as successful learners' (2006, 5). The skills of successful learning (at the centre of the wheel) develop as students become more skilful in the other key skills, as well as through their learning in the subject areas or old-form curriculum.

> Becoming a successful student can be recognised through the development of their beliefs about learning, learning strategies, the capacity to be reflective, to make connections across learning, and a willingness to engage in new learning situations. These features can be characterised as emergent in the sense that they evolve from students' engagement with learning across a range of domains as well as through supportive teaching and learning practices in classrooms. (NCCA 2006, 6)

Notably absent in current work is discussion of how the key skills are to be assessed and included in the certification at the end of schooling. Given the policy context as described above, and the status of the Leaving Certificate examination, lack of new-form/re-form curriculum engagement with assessment is politically understandable. Yet, if not addressed in the next stage of the work, it may quickly become educationally problematic. We now turn to Queensland.

Queensland – introduction

In Australia, the debates regarding the need for greater consistency in education in all States and Territories (Reid 2005, 2006; Graham and Martin 2006; Masters, 2006) have been driven by the previous Federal coalition government's push for: national standards; reporting nationally comparable data on student achievements; and reporting to parents and the wider community on schooling outcomes for accountability purposes. The Federal government's interest was in ensuring that schools work towards maintaining the country's international competitiveness. The focus on the use of standards for reporting and accountability purposes has impacted on developments in all Australian States, including Queensland.

Queensland has a history of innovation in school-based curriculum and assessment. An important development to address learner needs for the knowledge society was the development of the 2005 Queensland Assessment Task (QAT). This task was developed for Year 9 students (aged 13–14 years) and pitched at Level 5 (the anticipated standard of achievement for this age group). It was designed to capture rich information about student achievement in processing skills, drawing on Studies of Society and Environment (SoSE) and the arts, and across other Key Learning Areas in various mediums using a variety of instruments, devices and strategies.

A computer-based task and a paper-based task were designed to assess the students' achievements in the processing construct of transforming ideas and information. This construct, the underlying generic skills and dispositions, were particularly suited to using technology. The assessment task aimed to incorporate more than just a pen-and-paper test and did not take the traditional form of an examination. The guiding construct for the item writing for the task, according to one of those involved

> was not factual and conceptual, but focused on kids' capacity to process. There was a need identified to move towards stronger links with the purposes of education for the twenty-first century and repertoires of practice while drawing from the disciplines and constructing assessment tasks in a transdisciplinary way. (QAT developer, 2005)

These skills were fundamental to preparing students for the knowledge society. Students had to work in multiple modes to transform ideas/information with their

achievement measured in the underpinning generic skills. The emphasis was on skills and the use of a variety of methods and evidence to assess achievement. A more generic assessment, achieved by focusing on the construct of processing, provided the solution to the outcomes-based curriculum context where teachers have the flexibility to use a variety of curriculum materials and approaches to provide students with a range of learning experiences. However, if the developers were only to assess curriculum content in a standardised way they could not assume that students had learnt the same content in SoSE and the arts throughout the state. A generic assessment approach as opposed to a curriculum content approach was therefore chosen for the development of the assessment tasks (Klenowski 2006).

This pilot project was evaluated for the purposes of informing the proposed policy change of the Queensland Curriculum, Assessment and Reporting (QCAR) framework. Evaluative data were collected from analyses of documents and reports, classroom observations (two schools), focus group interviews with students (30) from these two schools, survey data from 227 student respondents immediately after the administration of the task, questionnaires completed by 794 students from the 56 trial schools involved in the pilot, telephone interviews with 28 principals/teachers from 27 of the 56 schools, focus group interviews with teacher-markers (12) and focus group interviews with the technical support team (12).

The findings indicated how teachers perceived the impact of this assessment task on their own teaching and learning in the context of the knowledge society. They were motivated to share their learning and insights with other school staff for the purposes of re-forming current curriculum and assessment practices. To illustrate:

> When it . . . comes to teaching so that we teach children to organise information and to think, teachers don't have those skills. . . . For secondary teachers to . . . focus on . . . thinking strategies and organising information is really confronting, as well . . . their own personal literacy. . . . The QAT . . . demonstrates that need, that pulling that together, the fact that it tested the transformation – thinking – really pulled that together. . . . I feel more confident to lead that. (Teacher interview, 2005)

Queensland – the policy context

In 2004 the Commonwealth's Schools Assistance Act was passed. It authorised a $33 billion education funding package for 2005–8. To access this funding all States and Territories of Australia must implement a range of strategies. For Queensland, this requirement involves the State government providing schools with statements about 'essential learnings'; schools to report to parents using an A–E grading scale; and state-wide assessment of student learning in Years 4, 6 and 9 (Department of Education and the Arts 2005, 2). To date, state-wide assessment of curriculum has not taken place at lower secondary level. To address these requirements Queensland's education leaders, in collaboration with teacher and professional expertise, are currently in the process of developing and implementing a 'Curriculum, Assessment and Reporting' framework.

The 'essential learnings' do not constitute a new curriculum; rather, this is a re-forming of the curriculum as the essentials are drawn from the existing eight Key Learning Area syllabuses of the arts, English, Health and Physical Education, languages other than English, mathematics, science, Studies of Society and Environment, and technology. Linked to the 'essential learnings' are the standards which have been developed from analyses of student work and curriculum materials. The standards represent another element of the new-form/re-form curriculum for the knowledge society. They are

'descriptors of student achievement used to monitor growth in student learning and provide information about the quality of student achievement' (Department of Education and the Arts 2005, 6). To enhance teachers' understanding of these standards, descriptions with exemplars of student work are provided for each standard.

The evaluation of the pilot project in 2005 identified the need to clarify the generic or learning skills *as well as* the domain-specific knowledge, skills, understandings and dispositions at key junctures. These understandings have been incorporated into the 'essential learnings' as ways of working or processes students use to develop and demonstrate their knowledge and understanding. These processes need to be incorporated into the common assessment tasks so that students and teachers recognise their value and come to understand their importance in learning (Klenowski 2006). In this way, such skills and processes are made more explicit and their relevance realised in the context of the knowledge society.

An assessment bank of high quality assessment tools for collecting valid and reliable evidence of student achievement is being developed to support teachers' classroom assessment practice. Support will also be provided to promote assessment knowledge and skills, models of good assessment practice, and resources to support consistency of teacher judgements about student achievement.

New-form/re-form curriculum Queensland: focus on assessment of generic skills

What is new and significant in this new-form/re-form curriculum is the possibility of reporting processing skills of transforming information and ideas. Table 2 summarises the categorisation of the types of transformation that were assessed.

The identified underlying skills involved in the processes of transformation included the following: translating, presenting, designing, imagining, writing, tabulating, devising, ICT skills, synthesising, performing, mapping, interpreting, evaluating, modifying, deciding, contrasting, analysing, summarising, graphing, exemplifying and sketching. The identified dispositions included: comfortable with using technology, sensitivity, logic, self-expression, inclination to experiment and a striving for accuracy.

The assessment of generic skills applied in Year 9 proved possible and was reported relative to an A-standard performance. The A grade was described in terms of desirable features of the responses to the task, so in addition to exhibition of knowledge:

A-grade students:

Extract information from prose, diagrams, maps and symbolic text; clarify it and transform it to display meaning in multiple media.

Discern patterns and relationships in verbal, pictorial and symbolic text (alone and in combination); make significant decisions and judgements [and] operationalise these into accurate representation and products. (Education Queensland 2005)

These processing skills relate to learning-to-learn, or in Claxton's terms 'learning power' (Education Queensland 2005). In a teacher's own words, QAT provides

items that gave the children the opportunity to demonstrate their skills, their confidences and the interconnectedness of information. I think that the criteria for those tasks are going to be really useful and I think that if the common assessment task can have that as a starting point I think we are ... headed in the right direction. (Teacher interview, 2005)

Many teachers emphasised the importance of generic skills involved in transforming ideas and information and the impact of the QAT in raising teacher awareness of how

Table 2.   Types of transformation.

	Information and ideas	Medium	Genre
Type 1: *Genre* changes, but not the *medium*. The natures of *information and ideas* remain highly similar.			
Subject of the transformation	Scientific report on connections between a prescription drug and potential side-effects	Written text	Scientific report
Product of the transformation	Leaflet to accompany the drug warning of possible side-effects	Written text	Informational leaflet
Type 2: *Medium* changes, and hence *genre*. The natures of *information and ideas* remain highly similar.			
Subject of the transformation	Data and analysis section of a scientific report on connections between a prescription drug and potential side-effects	Written text	Graphical and tabular data analysis
Product of the transformation	Series of posters for campaign informing the public of possible side-effects of the drug	Visual art	Poster
Type 3: There is a substantial shift in the nature of *information and ideas* (the nature of the shift might be thought up by the students themselves). *Medium* changes, and hence genre will need to change.			
Subject of the transformation	Scientific report on connections between a prescription drug and potential side-effects	Written text	Scientific report
Product of the transformation	Dramatic exploration of the impact of exaggerated reactions to drugs on patients and their lives	Drama	Comic play
Type 4: There is still a substantial shift in the nature of *information and ideas*. (The transformation is not Type 3, though, because the *Medium* remains the same.)			
Subject of the transformation	Scientific report on connections between a prescription drug and potential side-effects	Written text	Scientific report
Product of the transformation	Personification of drugs which allows them to pursue their own agendas (via the side-effects)	Written text	Drama script

Source: Education Queensland (2004).

these skills need to be addressed. Two teachers interviewed in 2005, for instance, focused on skills such as analysing, evaluating and critiquing. They raised the importance of not only gaining knowledge but of being able to use that knowledge.

New-form/re-form curriculum – mapping emerging contestation

This article has focused on the new-form/re-form curriculum in the knowledge society and the innovative developments in two cases. The particular features of the cases are clear. First, developments in Queensland appear to be assessment led; those in Ireland are curriculum led, with assessment featuring by its absence in the reform proposals on key skills.

Second, in Ireland, there has been a greater emphasis on deliberation, consultation and consensus building, resulting in the list of key skills being re-worked in the process; in Queensland the focus on processing skills for the QAT emerged from the existing

curriculum context. A wide variety of curriculum materials and approaches are used by Queensland teachers to provide students with a range of learning experiences. A generic approach, as opposed to a curriculum content approach to assessment, emerged as the solution for dealing with this diversity. The trial of the QAT was designed to investigate if processing skills could be assessed by a common assessment task, and in this sense determine if there existed consensus among teachers across the state in terms of their acceptance of this new-form/re-reform of curriculum.

Third, the differences in cultural and policy contexts have impacted on the implementation strategies and approaches adopted. In Ireland, consistency and stability in terms of policy leadership and direction at the national level have enabled and supported a more consultative approach to curriculum development. In Queensland, contestations in terms of curriculum design and development, from the national through to the local professional levels, have resulted in a rapidly changing policy environment that has impacted on policy leadership and direction. What is clear from the evaluation is the need for consensus across professional boundaries and all policy-making groups for the implementation of new-form/re-form curriculum.

Conclusion

What is striking about both cases is the shaping influence of knowledge society discourse in curriculum and assessment debates, and the reform trajectories in two different systems, on two continents. Queensland's generic skills and Ireland's key skills are both presented as the curriculum for successful learning. The articulation of the 'construct of processing' in Queensland, and of 'becoming a successful learner' in Ireland, appear to us to signal an emerging new-form/re-form of curriculum in which traditional categories such as *content, skills and objectives* no longer serve the normative functions ascribed to them in curriculum reform to date.

> Knowledge ... is no longer considered a fixed entity, capable of being reproduced according to a transmission model of teaching. Rather, it is dynamic and situated, in constant interaction with multiple sources of information that far surpass the traditional models of teaching. Learning content can no longer be specified simply in terms of lists of discrete items of knowledge in a programme. (Jonnaert et al. 2006, 7)

Students, too, have been responsive, in both Ireland and Queensland, in supporting such changes to curriculum that provide challenge and make greater use of technology as a tool for learning. ICT for learning and assessment purposes has been recognised as under utilised and under researched (McCormick 2004). For example, a typical student response to the computer-based task of the QAT was, 'great and there should be more of them – education needs to adjust to the fact that technology is becoming more integrated into everyday life' (Student response, 2005).

In new-form/re-form curriculum the traditional assessment challenges of construct validity, for example, or even of reliability, are also re-framed. The A-grade descriptor for Year 9 students in Queensland flags some of the new problems associated with an assessment or test for the ability to 'make significant decisions and judgements'. However, further consideration is needed of the degree to which the emergence of knowledge society curricula is being matched by knowledge society assessment. The hegemony of the fixed body of knowledge, organised into topics and sub-topics, may be undergoing something of a transformation in education and policy discourse, and in some policy initiatives, as documented in this article. What is less clear is how assessment systems, especially

high-stakes testing, is informing and being informed by that transformation. In presenting this article, and our ideas of new-form/re-form curriculum, we are conscious of the need for further mapping and exploration of how new-form/re-form curriculum for the knowledge society is enacted in practice, in the classroom over an extended period of time. But we are also inviting engagement on how emerging trajectories for curriculum are being reflected in assessment and testing reform initiatives, and in exploring how knowledge society discourse is functioning at the site of assessment policy production, where the relationships between learners, knowledge and competence are complicated by issues of power and social reproduction.

Acknowledgements

Note

1. There were 1813 responses, with the results of the survey being updated daily. It attracted ongoing media and public attention and allowed for far more student engagement than heretofore, as evidenced in the article.

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