An analysis of the current suite of QSA Years 11 and 12 syllabuses

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Contents

Executive Summary

This study is a contribution to the Queensland Studies Authority Review of the Senior Phase of Schooling. It assesses the extent to which Authority Syllabuses and Subject Area Specifications (SASs) developed for years 11 and 12 in Queensland schools prepare students for the demands of university or vocational education or the workplace.

The study reviewed literature on preparatory requirements for post-school pathways of work and education in university and vocational education institutions, and changing knowledge demands of these post-school destinations. Important considerations derived from this literature included deep learning, generic skills, employability skills and lifelong learning skills. This review provided a basis for the construction of a content analysis framework which was used to analyse Authority Syllabuses and Subject Area Specifications.

Key findings included the following points.

- The relatively consistent emphases of Authority Syllabuses are *Basic Information and Communication Skills* and *Thinking* skills, followed by *Deep Learning and Knowledge*. *Organisational Skills* was the next most frequently mentioned emphasis, but its distribution is very uneven. A number of Syllabuses do not nominate *Organisational Skills, Participation* or *Independent Lifelong Learning* as intended outcomes, and *Employment Skills* is quite rare.

- There is great variability in a number of categories and sub-categories across Syllabuses. Given the number of possible combinations of subjects in the enrolment of any student, this variability makes it difficult to generalise about the outcomes of the curriculum as a whole.

- The pattern of results for Subject Area Specifications is similar to Authority syllabuses in that *Basic Information and Communication Skills* and *Thinking* are the two most frequently mentioned outcomes, though there are differences in the sub-categories emphasised by the two types of document.

- Other categories showed clear differences between Syllabuses and SASs. Syllabuses give mixed attention to all but *Deep Learning and Knowledge*. *Interpersonal and Teamwork Skills*, *Participation*, *Initiative and Creativity*, *Independent Learning* and *Personal Development* seldom receive more than a few mentions, and sometimes none at all. SASs give more emphases to these, especially *Interpersonal and Teamwork Skills* and *Personal Development*. On the other hand, the absence of *Deep Learning and Knowledge* in the SASs is marked.

In the course of the study, a number of issues arose which have implications for the design of curriculum documents. For instance,

- The considerable choice in units to be taught and especially in learning experiences recommended makes it difficult to identify curricula elements which should be counted as contributing to the preparation of the students.

- The largely optional nature of learning experiences is problematic for the performative outcomes which figure highly in the pathways literature. A focus on performative outcomes would imply clearer guidance on important learning experiences.

- Developments in post-school learning environments suggest that students need to be able to operate independently in their learning, especially in the use of information and communication technologies, and to use metacognitive approaches to learning. In these respects, the curriculum documents present a mixed picture.

- Many of the syllabuses are elaborated largely in terms of 'subject matter', creating a mismatch with the process emphasis of generic skills and employability frameworks emphasised in much of the pathways literature.

These matters are particularly important with respect to the demands identified in vocational education and lifelong learning pathways, where, at least at the system level, the concern for generic abilities is dominant. The university pathway gives more emphasis to domain specific knowledge and deep learning, but the latter is not always well represented in the syllabuses. However, even in universities the generic approach is strong and increasing, and may have implications for syllabus design.

There is an increasing link between institutional and workplace learning across a range of pathways, and some signs of covergence in vocational and university outcomes. While these developments may seem to lead to a more 'practical' element in post-school learning, the changing nature of the workplace at the same time is demanding more flexible, complex and higher level problem solving abilities. The implications of these trends will continue to be a challenge to the preparatory function of the senior curriculum

1

Introduction

This study is a contribution to the Queensland Studies Authority Review of the Senior Phase of Schooling. It assesses the extent to which syllabus documents prepare students for a range of post-school pathways. Specifically, it is an audit of syllabuses developed for year 11 and 12 programs in Queensland schools, and the extent to which they prepare students who are destined for university or vocational education, or who move directly to the workplace.

The remainder of this chapter comprises a brief comment on the idea of 'preparation' which underlies the study. The next chapter is a discussion of the kinds of knowledge required for the three post-school pathways, and a review of recommendations about prerequisite knowledge which are the basis for the later analysis. A discussion of the nature of the curriculum follows, along with its implications for the study. The methods used are then described, and the results presented. Finally, suggested implications are drawn which could inform decisions about curriculum reform.

What do we mean by preparation for post-school pathways?

On the face of it, preparation assumes that there is a linear hierarchy of knowledge in which certain knowledge or skills are 'basic' to others. In the present context, the question is what knowledge will best support students in their post-school experience, whether it be further education at university, TAFE or elsewhere, or work. It is important to note that this focus on pathways excludes broader notions of a general education aimed at preparing students for a range of life-roles. The functionalist approach also overlooks the provision of senior education for the inherent satisfaction it might contain, what is sometime times referred to as 'knowledge for its own sake'. While the analysis focuses on the three pathways mentioned, this should not be taken to mean that these are the only considerations in evaluating or constructing the senior curriculum.

The idea of preparation and of some knowledge being basic to other knowledge assumes that what is learned in one context can assist learning in another, traditionally referred to as the question of transfer. Research into learning transfer is complex, but high level transfer has proven to be difficult to demonstrate (Bennett, Dunne and Carre, 1999; Clayton, Blom, Meyers and Bateman, 2003). Sceptics argue that high level knowledge and expertise are culture and context specific. The increasingly common view is that transfer occurs less often than has been assumed, and that knowledge is applied in new contexts only when the task is very close to the one originally learned. This has been represented in terms of 'near' and 'far' transfer, with the latter being the more flexible and higher level transfer most often sought by policy makers. An example of 'near' transfer might be the common transfer of word processing or basic mathematical calculations. However, more distant generalisation may be quite difficult, so that being able to write literary essays, for instance, may not be an advantage in writing scientific reports, other than in the basic language skills of spelling and grammar involved in both.

The proponents of ‘far’ transfer claim that it can be effective, but that teaching needs to focus explicitly on maximising transfer by emphasising planning strategies and metacognition, rather than leaving students to infer it themselves. If, for instance, a general approach to planning and implementing a writing task is developed in the course of learning how to write a literary essay, such as analysing, comparing and modelling explicit genres, then such an approach may also be useful when students are asked to write a scientific report. This kind of thinking is at the heart of the essential learnings movement and the interest in generic skills, and is the main source of the checklists and frameworks drawn on in this study.

For present purposes the view is that preparation for post-school pathways is promoted when there is continuity between what is learned at school and the demands of work and/or continuing education. Schools prepare their students well by introducing them, at an appropriate (preparatory) level, to the kinds of knowledge, skills and predispositions required for later success. To assess the extent to which the senior curriculum does this, the present study will review descriptions of the prerequisites for success in work, education and training. These descriptions will form the basis of a framework for a content analysis of curriculum documents. The aim is to identify the extent to which the prerequisite learnings are evident in the years 11 and 12 curriculum.

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Prerequisites for post-school pathways

This chapter reviews literature on what is required for success in the post-school pathways of work and education in university and vocational education institutions. The resulting knowledge elements will form the basis for developing an analytical framework to be applied to the senior curriculum. Before considering the specific needs for successful entry to the relevant pathways, it is important to note the changing context of the link between school and post-school pathways, and, in particular, developments in the way knowledge is understood and valued.

The increasing rate of change of knowledge is a challenge for syllabuses, for it tests the adequacy of traditional classifications and hierarchies. Seddon (1998, p. 13), for instance, refers to a pluralisation of knowledges, accompanied by 'a pluralisation of people who produce knowledge and who claim the status of authorized knowledge producers'. This 'has meant that, increasingly, different knowledges are recognised, each produced according to different standards of good practice in knowledge production and justified on the basis of different criteria for valuing knowledge'.

To an increasing extent, scientific discovery occurs in industrial laboratories; artistic and cultural activity is created in the leisure and creative industries; political and economic understandings emanate from think tanks and government and non-government agencies. In such a situation, there is a weakening of the hierarchical distinction between knowledge originating in the academy and that developed in government, industry and civil society. The introduction to universities of new disciplines and fields of study is one response to this, as are the recognition of different cultural perspectives and standpoints on what is to count as knowledge, and the increasing recognition of practical experience and prior learning in professional courses.

In contrast, past conceptions of knowledge have often been based on simple distinctions between, on the one hand, academic knowledge housed in traditional disciplines and reflected in the grammar school tradition, and on the other, practical knowledge developed through experience and learned through apprenticeships and practice. Part of this perspective is the view that the highest and most valued form of knowledge is associated with the detached contemplation of the world, the search for truth for its own sake, and the disinterested pursuit of traditional disciplines, and that this is the main source of original thought and discovery.

More recent analyses take a different view of these distinctions, arguing that the information society has changed the process and contexts of knowledge production and dissemination, giving rise to two modes of knowledge production which are related in quite different ways from earlier theory-practice distinctions (Gibbons, 1998; Gibbons et al., 1994). Mode 1 knowledge is 'university-based, pure, disciplinary, homogeneous, expert-led, supply-driven, hierarchical, peer-reviewed'. Mode 2 knowledge is 'applied, problem-focused, trans-disciplinary, heterogeneous, hybrid, demand-driven, entrepreneurial, accountability-tested, embedded in networks' (OECD, 2000, p. 61). Mode 2 knowledge is not created from the simple application of Mode 1, as the linear model of knowledge production would have it. Rather, it evolves within the context of its

application. 'Individual creativity is the driving force of Mode 1 knowledge; in Mode 2, creativity is based in the group' (OECD, 2000, p. 61).

The recognition of Mode 2 knowledge promotes the importance of interdisciplinarity in knowledge production, with its challenges to the traditional structures on which university education (including much teacher education) has been based. Metcalfe (1997, p. 723) speaks of the 'transfer sciences', as the bridge between pure science and technology proper. 'Pharmacology, agronomy, computer science and materials science are clear examples of activity with this intermediate position: knowledge is being pursued for its own sake but that knowledge is linked closely to technological practices' (p. 727).

Developments in our understanding of knowledge can also be seen in the area of professional knowledge. For instance, the OECD (2000, p. 233) identifies a generic model of the professional knowledge-base whose structures include similarities across professions, despite differences in the content of knowledge in particular professions. These common elements of professional knowledge include four analytically distinct types:

- Declarative knowledge, or “knowing that”, which is often in a propositional codified form;
- Scientific knowledge, which is a distinctive form of codified knowledge;
- Procedural knowledge or “knowing how”;
- Personal knowledge, in which the individual builds up and seeks to integrate an experience-based professional knowledge and develop expert professional judgment.

While university education has traditionally focused on the first two of these types of knowledge, procedural and personal knowledge are increasingly recognised as important, the last of these in particular presenting a challenge to current practice in curriculum and pedagogy.

It is in this changing context that the question of preparation needs to be considered, for assumptions about the knowledge demands of students’ post-school destinations may no longer be those which past curricula have assumed. While these changes may be overstated in some quarters, and while their implications for education are a matter for debate, they cannot be ignored in any review of the school curriculum. The following discussion of the demands of post-school pathways needs to be seen in this light.

Preparing for University

A challenge for the secondary school curriculum in preparing students for university study is that the nature of the university is in a constant process of change, which some would argue has accelerated in recent times. Recent trends in the university curriculum include a proliferation of areas of study, a growth in enrolment in vocational courses, an increase in multidisciplinary subjects and courses, and a shift in emphasis from a contemplative approach to learning and knowledge for its own sake to a performative focus on skills and their use value (Barnett, 2000;Gibbons, 1998). These developments raise new questions about the role of school subjects in preparing students for university studies.

Preparation for university studies can be viewed at a number of levels. At the most detailed level, the relevant question is how and to what extent specific secondary school subjects prepare students for the corresponding subjects at university: how the particular preparatory needs of students studying chemistry or English or mathematics are met by the equivalent school subjects. A second question might focus on the broad program of study, where the question would be what range of preparatory knowledge, skills and dispositions are needed for studies in areas such as business, engineering, humanities, science, social science, etc. Finally, it is possible to ask what range of knowledge, skills and dispositions would prepare a student for university study irrespective of the particular field of study.

This analysis takes the third approach. The detail required for assessing the needs for success in individual university subjects or programs is beyond the scope of the present study. This is largely because the information which would be required for such an analysis is simply not available. The subject and program specific needs of students entering Australian university courses have not been identified in the form or to the degree necessary for such an analysis. To follow the first approach above would be a very complex task, since individual subjects at secondary school level, such as mathematics, English or chemistry, are regarded as preparatory to a range of university studies, each of which is likely to have different needs and expectations of the same preparatory subjects.

An indication of the difficulty here can be seen in Table 1, which shows commencing enrolments in degree programs in Australian universities, and indicates the diversity of programs for which schools are expected to prepare students. The number of individual subjects entailed in these programs would produce an even more diverse list.

The available evidence shows that school learning is an important factor in university success, though the link is less clear than might be expected. For instance, in a 1997 study of students at Monash University, Evans and Peel (1999, p. 5) found that prior overall academic achievement (TER) is ‘consistently strongly and positively related to their first year subject marks’ as is ‘prior academic achievement in specific secondary school subjects’. However, in summarising research on the matter, Lizzio, Wilson and Simons (2002, p. 31) observe that, while studies to date have generally shown that school leaving performance is a significant predictor of achievement at university, the association is ‘modest at best, and some studies have found secondary school grades not to predict academic achievement’. In their own study of a survey of 2130 students at Griffith University, they found that a student’s school achievement was a positive but weak predictor of university achievement (GPA), and that how students perceived their current learning environment was a stronger contributor.

In a Finnish study of the predictive value of entry-level skills for successful study in medical school Lindblom-Ylanne, Lonka and Leskinen (1999, p. 254) concluded that:

> …entry-level skills had some potential to predict preclinical and clinical study success, even though their predictive power was quite limited … mediating variables such as study strategies, conceptions of learning and self-regulation skills are related to study success in medicine at the preclinical phase, and they become even more important as the studies proceed.’

Narrow Discipline Group	Undergraduate Commencements	% of Total Enrolment
Mathematical Sciences	9,422	5.5
Physics and Astronomy	2,291	1.3
Chemical Sciences	4,068	2.4
Biological Sciences	10,595	6.2
Total Natural and Physical Sciences	**28,803**	**16.7**
Computer Science	5,961	3.5
Information Systems	4,671	2.7
Total Information Technology	**12,090**	**7.0**
Electrical and Electronic Engineering	2,410	1.4
Total Engineering and Related Technologies	**7,586**	**4.4**
Architecture and Urban Environment	2,926	1.7
Total Architecture and Building	**3,663**	**2.1**
Total Agric., Environmental and Related Stds	**2,095**	**1.2**
Medical Studies	2,000	1.2
Nursing	5,905	3.4
Total Health	**13,820**	**8.0**
Teacher Education	7,500	4.4
Curriculum and Education Studies	4,873	2.8
Total Education	**12,614**	**7.3**
Accounting	7,903	4.6
Business and Management	10,012	5.8
Sales and Marketing	5,391	3.1
Banking, Finance and Related Fields	2,140	1.2
Total Management and Commerce	**26,676**	**15.5**
Political Science and Policy Studies	2,697	1.6
Studies in Human Society	10,332	6.0
Human Welfare Studies and Services	1,992	1.2
Behavioural Science	6,720	3.9
Law	6,168	3.6
Justice and Law Enforcement	2,155	1.3
Language and Literature	5,731	3.3
Philosophy and Religious Studies	2,124	1.2
Economics and Econometrics	8,622	5.0
Total Society and Culture	**48,716**	**28.3**
Performing Arts	3,044	1.8
Visual Arts and Crafts	2,755	1.6
Graphic and Design Studies	2,207	1.3
Communication and Media Studies	7,401	4.3
Total Creative Arts	**15,881**	**9.2**
Total	**171,969**	**100.0**

Table 1: Commencing Undergraduate Students in Australian Universities, by Narrow Discipline Group, 2004 (Only specific discipline groups with >1% of total are included.)

These studies suggest that an important issue influencing university success is students' conception of and approach to learning, and a considerable literature exists on this which is relevant to the present task. Research into the learning needs of university students, drawing especially on the work of Marton (Marton and Saljo, 1976; Marton, Dall'Alba and Beaty, 1993), has identified important and beneficial aspects of students' understanding of and approach to their studies.

The general findings of this work are that university students vary in their understandings of and approach to study, and that this influences their success in learning. In particular, the research suggests that students who have a deep understanding of the subject will perform better than those who do not. In studying students' learning in engineering, Marshall, Summers and Woolnough (1999) identified five different conceptions of learning among first year Engineering students at a UK university:

1. Learning as memorising definitions, equations and procedures – closely related to course content and assessment
2. Learning as applying equations and procedures – more closely related to sense of future career
3. Learning as making sense of physical concepts and procedures – coherent and integrated understanding sought
4. Learning as seeing phenomena in the world in a new way – developing ability to apply knowledge and methods to see phenomena in new ways, mediated by a reflective dimension.
5. Learning as change as a person – awareness of being able to see the world differently makes them see themselves differently.

The later stages of this progression represent deep approaches to learning. Similar distinctions have been drawn in other studies. In reporting research into university mathematics learning, Crawford, Gordon, Nicholas and Prosser (1998, p. 465) concluded that

> …fragmented conceptions of mathematics are associated with surface approaches to learning mathematics... On the other hand, cohesive conceptions of mathematics are associated with deep approaches to learning mathematics…. students holding cohesive conceptions of mathematics adopt deep approaches to learning mathematics, and have very different interpretations of learning mathematics at university. They perceive the learning environment as more satisfactory and fulfilling than do students reporting fragmented conceptions. Moreover, these students achieve at a higher level in their university study of mathematics than those students holding fragmented conceptions of mathematics and adopting surface approaches to learning.
>
> Most students learn mathematics at school and university in a competitive environment where mathematics is presented as a finished and polished product and where the assessment encourages students to reproduce authoritative statements of facts… In presenting mathematics in this way, students are provided with mathematical information about concepts, proofs, techniques and skills, but the processes which created this information are hidden… The lack of awareness of these creative processes makes it difficult for students to experience

> mathematics as personally meaningful and misrepresents the nature of mathematics itself.

These analyses suggest that, rather than developing a broad familiarity with a subject or a mastery of its particular skills and techniques, the most valuable preparation for university learning is the development of a deep understanding of the subject.

A relevant question here is what evidence exists about the extent to which students themselves feel that they are well prepared for university study. A recent study of the first year experience of students in Australian universities found that over the past decade, the proportion of school leavers reporting that the standard of work at universities was much higher than expected 'has declined significantly from 45 per cent (in 1994) to 41 per cent (in 2004)', most notably among female school-leavers (Krause et al., 2005, p. 23). The authors conclude that

> …the ten-year trend data show a significant increase from 34 to 42 per cent in the proportion of students agreeing that their university courses build on school subjects. A significant rise of the same proportions is evident in response to the question of whether the final school year was a good preparation for university study. Admittedly, students agreeing to these closer school-university connections remain in the minority. Nevertheless, the trends are promising and warrant continued monitoring in the future'. (24)

A longitudinal study by Hillman (2005, p. 10) tracked students from year 9 through to university. The study showed results similar to those above, with 34% of first year school leaver university students saying that the course was more difficult than expected, compared with 27% in TAFE. However, only 11% and 12% of students respectively listed this as their main area of difficulty, after fees and balancing work and study commitments. Interestingly, when university students were compared on their year 9 achievement levels (high, middle, low), there were no significant differences in the proportions of students finding the first year more difficult than expected. For TAFE students, the middle achievement group reported more difficulty than the high or low year 9 achievement group.

Another approach to identifying students' needs for preparation for university study may be to compare school learning with the generic skills which are increasingly said to be a key focus of university study. The promotion of generic skills in universities is complex and problematic, and many have questioned its value, either criticising the vague and disparate uses of the idea, or questioning whether knowledge can be transferred in intellectually authentic ways from specific contexts of learning to a range of unknown future uses (Bennett, Dunne and Carre, 1999; Bridges, 1992; Hyland and Johnson, 1998).

Bennett, Dunne, and Carre, (1999, p. 74) comment on the 'semantic confusion' of the term in the United Kingdom, which has been used to refer to 'competences, capabilities, attributes, elements or learning outcomes, sometimes incorporating levels and sometimes not'. The fact that different organizations and agencies have produced a range of lists further complicates the situation. The authors' view of the results of this process has implications for similar developments in Australia (p. 74):

> A proliferation of lists of employers' skill demands appeared through the 1980's and early 1990's, but they did little to clarify the definitions of the skill labels used. More recently a discourse of attributes has been added to the discourse of skills (cf. HEQC, 1997), although this may only serve to exacerbate the evident conceptual confusions….

Of particular importance for the present study are the quoted comments by Coffield (1997) and Barnett (1997) on the process by which the lists of generic skills are generated.

> … As Coffield (1997) argues, the strategic assessment of graduates' future roles turns out on examination to be a highly selective amalgam of untested speculations from focus groups and interested parties. 'Fundamental changes to the curriculum of higher education needs to be based on more robust evidence...'(p. 82). Barnett (1997) is equally scathing, arguing that the AGR [Association of Graduate Recruiters] requirement is for 'extra-clever chameleons who can change not just their colours but their whole working selves, and in an instant if necessary' (p. 121)' (Bennett, Dunne, and Carre, 1999, p. 75).

In an attempt to clarify this situation, Bennett et al. (1999, p. 77) reviewed a range of generic skills and developed a composite framework of skills which 'are generic in that they can potentially be applied to any discipline, to any course in higher education, to the workplace or indeed to any other context'. Their model is shown in the Table 2.

MANAGEMENT OF SELF	MANAGEMENT OF INFORMATION
Manage time effectively Set objectives, priorities and standards Take responsibility for own learning Listen actively and with purpose Use a range of academic skills (analysis, synthesis, argument etc.) Develop and adapt learning strategies Show intellectual flexibility Use learning in new or different situations Plan/work towards long term aims and goals Purposefully reflect on own learning Cope with stress	Use appropriate sources of information (library, retrieval systems, people, etc.) Use appropriate technology Handle large amounts of information/data effectively Use appropriate language and form in a range of activities Interpret a variety of information forms Present information/ideas competently (orally, in written form, visually) Respond to different purposes/contexts/audiences Use information critically Use information in innovative and creative ways
MANAGEMENT OF OTHERS	MANAGEMENT OF TASK
Respect the views and values of others Work productively in a cooperative context Adapt to the needs of the group Defend/justify views or actions Take initiative and lead others Negotiate Offer constructive criticism Take the role of chairperson Learn in a collaborative context Assist/support others in learning	Identify key features Conceptualise issues Set and maintain priorities Identify strategic options Plan/implement a course of action Organise sub-tasks Use and develop appropriate strategies Assess outcomes

Table 2: A framework for the development of generic skills (adapted from Bennett, Dunne and Carre, 1999, p. 78)

Bennett et al. (1999) proposed a model which could articulate the various elements and contexts of university learning with the generic skills listed. The aim was to promote the development of generic skills by showing their relationship with other aspects of the university curriculum. The resulting model identified five 'elements of course provision in higher education: disciplinary content knowledge, disciplinary skills, workplace awareness, workplace experience and generic skills', as shown in Figure 1.

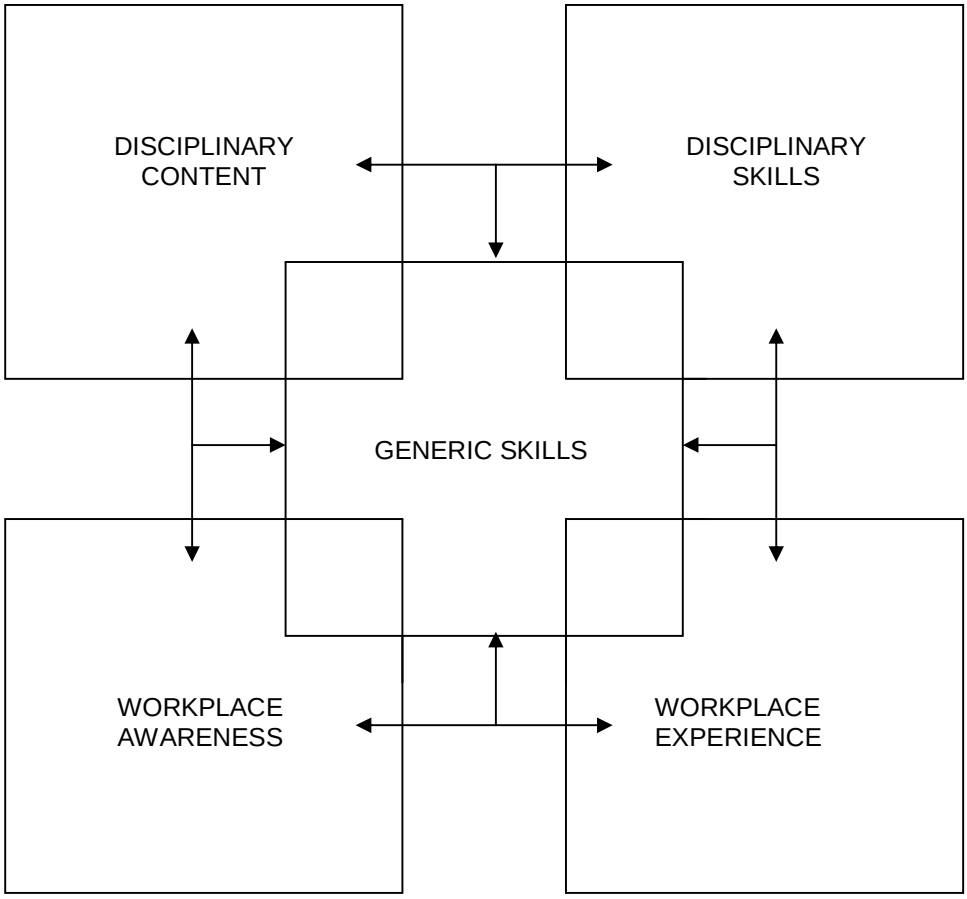

Figure 1: A model of course provision (Bennett, Dunne and Carre, 1999, p. 80)

The generic skills which universities aim to develop may be one way of identifying preparatory needs for secondary school students. However, the place of generic skills in universities is not the dominant consideration in the normal practice of teaching in university schools and departments. Rather, the traditions and current emphases of the field of study are much more influential.

In this connection, Conley (2003) reports a study which, if conducted in Australia, would make a significant contribution to the issues under consideration here. Conley worked with staff in twenty universities to identify what students needed to do to be adequately prepared for entry level courses in US universities. While the study focused on particular subject areas, an approach which has of necessity been excluded from this study,

Conley's observation about general habits of mind is important.

> One of the most dominant themes raised by participants is the importance of the habits of mind students develop in high school and bring with them to university studies. These habits are considered by many faculty members to be more important than specific content knowledge. The habits of mind include critical thinking, analytic thinking and problem solving; an inquisitive nature and interest in taking advantage of what a research university has to offer; the willingness to accept critical feedback and to adjust based on such feedback; openness to possible failures from time to time; and the ability and desire to cope with frustrating and ambiguous learning tasks. Other critical skills include the ability to express one's self in writing and orally in a clear and convincing fashion; to discern the relative importance and credibility of various sources of information; to draw inferences and reach conclusions independently; and to use technology as a tool to assist the learning process rather than as a crutch. (Conley, 2003, p. 8)

Conley's findings suggest that the generic approach to preparation for university study has merit, and that while it may not suffice for the specific needs of some more technical areas, a generic approach such as that taken here is nonetheless an important part of any assessment of university preparation. Given the earlier comments about the range of courses for which school leavers are destined, there are grounds for arguing that the general skills, habits of mind and conceptions of learning identified in this brief review are essential to university preparation.

An important statement in this context is the list of skills identified in a 2001 ACER study which aimed to develop an assessment framework for generic graduate skills through a consultation process with Australian universities (Australian Council for Educational Research, 2001). Given its focus on the generic skills which universities and other interested parties agree should be the result and therefore an important focus of university study, it suggests important learning for which students need to be prepared. The list is set out in Table 3 on the following page, and has been an important input to the construction of the content analysis framework used in the analysis reported in later chapters. In addition to these skills, the template for this study includes elements of the concept of deep learning discussed earlier in this chapter.

Preparing for work and training

While there is a considerable tradition of research into the nature of university learning, the same cannot be said for vocational education (though in recent years the National Centre for Vocational Education Research has produced a large number of valuable studies). This may be in part because of the varied contexts in which vocational education occurs, ranging across TAFE institutions, workplace training, and, increasingly, schools. The distinction between workplace and institutional learning in apprenticeships and traineeships is particularly blurred.

In the past, the separation of vocational education and university education has been reasonably strong, with the exception of traditional professions like medicine or law, but, as discussed in the section on university pathways, the divisions between the two sectors are diminishing. Universities have become more vocational with the development of new areas of professional training, to the point where, in areas such as information technology, the distinctions from TAFE provision may be difficult to draw. In

other areas, such as nursing or the arts, programs have been transferred from largely workplace or TAFE contexts to universities, with similar blurring of the vocational-university divide.

Component	Institutions	Other stakeholders (e.g. employers and careers councils)
Communication/structured written response	///// ///// ///// ///// /	///// /
Problem solving/applied reasoning	///// ///// ///// /	///// /
Analytical skills	///// ////	/////
Critical thinking	///// ///// /////	//
Logical reasoning	///// ////	//
Ethics/citizenship/social responsibility/empathy	///// ///// /////	///
Creativity	///// ///	//
Interpersonal skills/teamwork/leadership	///// ///// ///// ////	///// //
Sceptical but open-minded	///// ///	
Flexibility/tolerate uncertainty	///// /	//
Capacity for or commitment to lifelong/ independent learning	///// ///// //	///
Numeracy/ability to quantify	///// /	//
Literacy	///	/
IT familiarity/IT use	///// ///// ///	///
Personal skills/self-management/reflective/ confidence/self-reliance/initiative	///// /	/////
Global/national/historical/cross-cultural perspective	///// //	//
Information literacy/management/research skills	///// ///	

Table 3: University generic skills identified in ACER consultation (Australian Council for Educational Research, 2001, p. 27)

The current research has taken the view that the intellectual demands of institutional vocational education overlap to varying but considerable degrees with those of professional education in universities. This view is supported by a comparison of the generic skills identified by universities with those promoted under the label 'employability'. As a result, vocational education pathways are defined here as education and training pathways other than university, with no *a priori* presumption about the nature of the learning involved or preparation required.

Accordingly, the view taken here is that there are no *prima facie* preparatory requirements for vocational education which are qualitatively different from those of academic professional study on the one hand (discussed in the section on university pathways above), or from those required for workplace training on the other. In other words, there is an overlap between preparation for university and vocational education,

and between vocational education and work (and, as has been mentioned, between university and work as well). There may well be different emphases across these pathways, and there may be elements within each of them which are relatively distinctive. For instance, while workplace skills are not unique to either the university or the TAFE sector, they are no doubt more comprehensively and immediately relevant to vocational education than to many university courses. Equally, the focus on research in university teaching may make it distinctive, but at the undergraduate level this focus is variable, and runs in parallel with a vocational function in most professional courses. Taken as a whole, for the present purposes the key distinctions are between preparation for the demands of further education (wherever it might occur), and preparation for the demands of the workplace. The recent emphasis on the concept of employability strengthens this link, and justifies the approach here of dealing with preparation for vocational education and the workplace together. The following discussion addresses the latter demands, and draws on two main sources: analyses of employability, and the concept of lifelong learning.

Addressing the pathway to work is not straightforward for education authorities committed to promoting education as a personal and public good. It is clear that some students wish to enter the workforce directly from school, so that the demands of preparation for work are an important consideration for the school curriculum. However, the economic and industrial context dictates that entering work in the contemporary world must always be done with a view to further work-related education and training, which may be at any of the levels from traineeship to university.

Julian (2004) posits a spectrum of employability skills which can assist in clarifying the range of skills relevant to this issue. (See Figure 2.) The skills are distinguished along a continuum from broad life skills to technical skills specific to a particular occupation. For the purposes of this study, and in keeping with the approach taken to university preparation, the focus will be on life, employability and cross-industry generic skills. The more limited cross-industry technical skills and occupation-specific skills will depend on particular occupational choices which are beyond the scope of the present study.

The history of preparation for work in Australian education has been dominated by the focus on the Mayer Key Competencies, reflected in the current requirement that all Senior syllabuses show how they relate to the competencies. However, recent developments have augmented the Mayer competencies, producing more detailed lists. Possibly the most important of these developments is the work carried out by the Australian Chamber of Commerce and Industry and the Business Council of Australia for the Department of Education, Science and Training.

In developing a set of employability skills for Australian industry, the project sought to build on the Mayer Key Competencies, ‘by including skill areas identified in the national frameworks of broadly comparable societies, and evidence of Australian employers’ views’ (Curtis and McKenzie, 2001, p. 50). In developing the consultancy framework for the project, Curtis and McKenzie comment on a number of ways in which the Mayer framework has been extended:

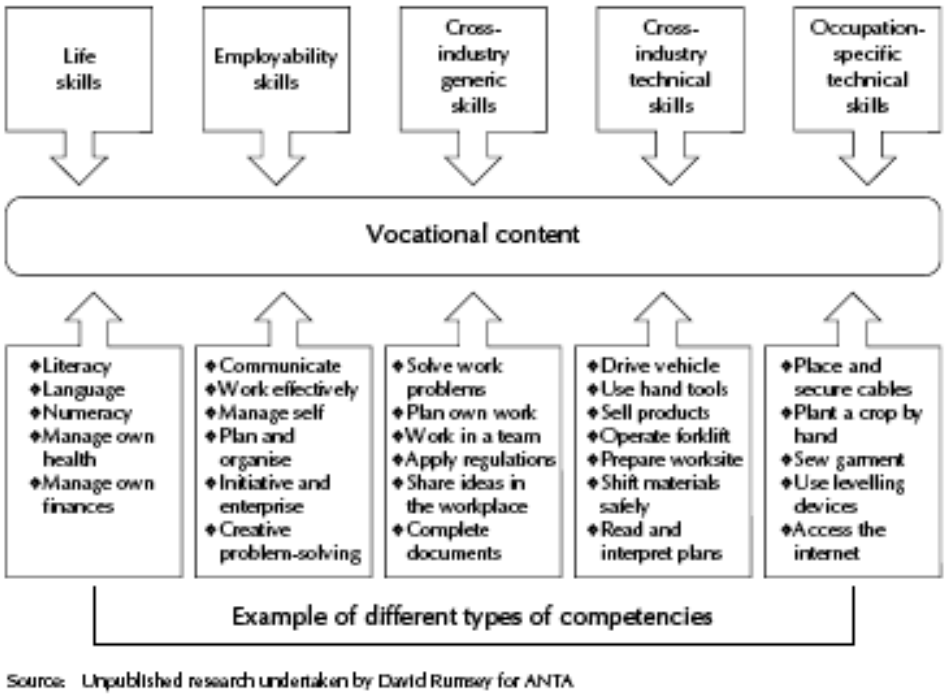

Figure 2: A spectrum of vocational skills (Julian, 2004, p. 85)

- Literacy has been elaborated to focus more on listening and speaking, an awareness of purpose, audience, and medium, information literacy and facility with information technology
- A broader conception of intellectual abilities includes creativity, decision making and 'contextual understanding' and elaborates Planning and Organising Activities to include goal setting, time management, and project management.
- Personal attributes are included, such as values and attitudes and other affective elements such as self-esteem, commitment to learning, preparedness to accept change, and cultural inclusivity.
  (Curtis and McKenzie, 2001, p. 52)

The inclusion of personal attributes is a considerable departure from the Mayer focus on skills, but echoes the similar development in professional education mentioned in the previous section on university pathways. Curtis and McKenzie cite in support of this move the literature review by Kearns (2001), who concluded:

> The pressures for self-direction, autonomy, adaptability, and lifelong learning generated by the new economic environment of Australian education and training go beyond the current ambit of the Mayer key competencies and raise a spectrum of fundamental issues relating to skill, personal attributes and values, and the generation, management and use of new knowledge. There is a strong case that the current exclusion of personal attributes and values from the key competencies can no longer be maintained in the new environment of education and training ... (Kearns, 2001, p.72)

The following Table 4 shows the framework of employability skills which has been incorporated in the development of the content analysis in the present study.

Personal attributes that contribute to overall employability	Loyalty Commitment Honesty and integrity Reliability Enthusiasm Personal presentation Commonsense Positive self-esteem Sense of humour Ability to deal with pressure Motivation Balanced attitude to work and home life Adaptability

Skill	**Element–(facets of the skill that employers identified as important, noting that the mix and priority of these facets would vary from job to job)**
Communication that contributes to productive and harmonious relations between employees and customers	Listening and understanding Speaking clearly and directly Writing to the needs of the audience Negotiating responsively Reading independently Empathising Using numeracy effectively Understanding the needs of internal and external customers Persuading effectively Establishing and using networks Being assertive Sharing information Speaking and writing in languages other than English
Teamwork that contributes to productive working relationships and outcomes	Working with people of different ages, gender, race, religion or political persuasion Working as an individual and as a member of a team Knowing how to define a role as part of a team Applying teamwork skills to a range of situations, e.g. futures planning, crisis problem solving Identifying the strengths of team members Coaching, mentoring and giving feedback
Problem solving that contributes to productive outcomes	Developing creative, innovative solutions Developing practical solutions Showing independence and initiative in identifying problems and solving them Solving problems in teams Applying a range of strategies to problem solving Using mathematics including budgeting and financial management to solve problems Applying problem-solving strategies across a range of areas Testing assumptions taking the context of data and circumstances into account

	Resolving customer concerns in relation to complex project issues
Initiative and enterprise that contribute to innovative outcomes	Adapting to new situations Developing a strategic, creative, long-term vision Being creative Identifying opportunities not obvious to others Translating ideas into action Generating a range of options Initiating innovative solutions
Planning and organising that contribute to long-term and short-term strategic planning	Managing time and priorities – setting timelines, coordinating tasks for self and with others Being resourceful Taking initiative and making decisions Adapting resource allocations to cope with contingencies Establishing clear project goals and deliverables Allocating people and other resources to tasks Planning the use of resources including time management Participating in continuous improvement and planning processes Developing a vision and a proactive plan to accompany it Predicting – weighing up risk, evaluating alternatives and applying evaluation criteria Collecting, analysing and organising information Understanding basic business systems and their relationships
Self-management that contributes to employee satisfaction and growth	Having a personal vision and goals Evaluating and monitoring own performance Having knowledge and confidence in own ideas and vision Articulating own ideas and vision Taking responsibility
Learning that contributes to ongoing improvement and expansion in employee and company operations and outcomes	Managing own learning Contributing to the learning community at the workplace Using a range of mediums to learn – mentoring, peer support, networking, information technology (IT), courses Applying learning to 'technical' issues (e.g. learning about products) and 'people' issues (e.g. interpersonal and cultural aspects of work) Having enthusiasm for ongoing learning Being willing to learn in any setting – on and off the job Being open to new ideas and techniques Being prepared to invest time and effort in learning new skills Acknowledging the need to learn in order to accommodate change
Technology that contributes to effective execution of tasks	Having a range of basic IT skills Applying IT as a management tool Using IT to organise data Being willing to learn new IT skills Having the occupational health and safety knowledge to apply technology Having the appropriate physical capacity

Table 4: Employability Skills Framework (Australian Chamber of Commerce and Industry and the Business Council of Australia, 2002, pp. 46-47)

Of interest here is the fact that these dimensions of employability have wide relevance – including in university-based professions. Evidence here comes from the research of Eraut and colleagues into workplace learning (Eraut, 2005). The researchers observed the early years of professional learning among novice nurses, accountants and engineers, and identified a range of aspects of the professions which are learned in their initial experience. Table 5 presents the categories of learning, with examples of each. The similarity with the ACCE/BCA formulation suggests that the expectations and demands of the workplace are common across a wide range of contexts and occupations.

Task Performance Speed and fluency Complexity of tasks and problems Range of skills required Communication with a wide range of people Collaborative work **Awareness and Understanding** Other people: colleagues, customers, managers, etc. Contexts and situations One's own organization Problems and risks Priorities and strategic issues Value issues **Personal Development** Self evaluation Self management Handling emotions Building and sustaining relationships Disposition to attend to other perspectives Disposition to consult and work with others Disposition to learn and improve one's practice Accessing relevant knowledge and expertise Ability to learn from experience **Teamwork** Collaborative work Facilitating social relations Joint planning and problem solving Ability to engage in and promote mutual learning	**Role Performance** Prioritisation Range of responsibility Supporting other people's learning Leadership Accountability Supervisory role Delegation Handling ethical issues Coping with unexpected problems Crisis management Keeping up-to-date **Academic Knowledge and Skills** Use of evidence and argument Accessing formal knowledge Research-based practice Theoretical thinking Knowing what you might need to know Using knowledge resources (human, paper-based, electronic) Learning how to use relevant theory (in a range of situations) **Decision Making and Problem Solving** When to seek expert help Dealing with complexity Group decision making Problem analysis Generating, formulating and evaluating options Managing the process within an appropriate timescale Decision making under pressurised conditions **Judgement** Quality of performance, output and outcomes Priorities Value issues Levels of risk

Table 5: What is learned in professional workplaces? (Eraut, 2005, p. 7)

Of particular relevance to the demands of the workplace are the findings of a recent study into the skill needs of new entrants to the workforce (Ryan and Watson, 2003, p. 5). The authors describe the changing skill requirements resulting from a shift from 'a mass production process to one that is more managerial and entrepreneurial'. In the former context, involving largely routine tasks, the need is for workers to be able to adapt to tasks. In the current more flexible, managerial and entrepreneurial context, greater understanding of the whole process and organization is needed to deal flexibly with novel situations. Ryan and Watson quote Sheehan (1998, p. 317) who observes that:

> … the balance of work activity is shifting rapidly from the production of goods to the provision of services needed by business and by the community as a whole. This implies a major shift in the dominant work, and a devaluing of the skills traditionally involved in the production of goods in favour of interpersonal and cognitive skills…

In their study of work in the printing, hairdressing and library industries, Ryan and Watson (2003, p. 5) concluded:

> Although the education and training requirements of all industries are not the same, the consistent themes emerging from this research are:
> - In industries where a large proportion of the production process has been computerised, workers need a broad underpinning knowledge to effectively manage the production process, and the capacity to solve problems of a diverse nature;
> - Basic clerical skills and basic computer skills appear to be a minimum requirement for most jobs;
> - Workers need the capacity to learn about new products and processes as they are introduced; and
> - Communication skills are increasingly valued in all occupations due to the increased complexity of interactions between workers and suppliers, colleagues and clients.

Ryan and Watson (2003, p. 5) also note that their research supports the findings of Field and Mawer's (1996) study of ten industries. Field and Mawer identified the following skills as essential in a 'high performance' organization:

- Open attitude to new information, capacity to manipulate new ideas, and put forward their own suggestions, as well as being confident in adapting to new situations;
- Routine technical skills, such as processing forms or handling simple keyboard activities;
- Generic skills, such as those identified in the Mayer Key Competencies (collecting, analysing and organising information; communication skills; organisational skills; ability to work in teams; numeracy skills; problem-solving; and skills in using technology);
- Capacity to learn through reflection and to contribute to other people's learning;
- Empowerment, in the sense of being active in communicating and contributing within and between teams.

A final consideration in this review is the recent work on the concept of lifelong learning. While immediate post-school pathways are clearly important influences on senior school

planning, it is also the case that occupations are changing at a rapid rate, new ones replacing old, and existing ones being transformed by new technologies and other developments. The confident expectation is that demands on workers will continue to change with these changing circumstances, and that the capacity for and commitment to lifelong learning will be an important requirement for people in this context.

One recent proposal for preparation for lifelong learning was developed by Bryce, McKenzie and Withers (2000), who identified key areas for school action in promoting lifelong learning. The key areas included information literacy; questioning, reasoning and evaluating; values, dispositions and attitudes, such as adaptability, flexibility and the ability to apply new knowledge in practice; problem solving skills; communication skills; and learning how to learn, including encouraging deep learning, developing metacognitive skills, helping young people construct their own knowledge and providing an engaging context for learning. Bryce, McKenzie and Withers (2000, p. 28) elaborate the last of these in terms which relate to the issue of transferability discussed in the opening chapter of this report.

> Lifelong learners have a number of learning skills which enable them to identify what it is they need to do to successfully engage in a learning task and to transfer what they have learnt to other situations. These types of skills include learning to learn skills, higher order thinking, organisational skills and metacognition. When the learner is using these skills, learning becomes a systematic process over which they have control.

Conclusion

In each of the three pathways considered here, current discussion and research emphasise the importance of the changing economic and information context, its effects on what knowledge is valued, and its implications for education and training. There is an apparent convergence in some aspects of these changes, and past distinctions are blurring as universities become more vocational, and vocational education and training focus on more abstract and flexible skills required for decision making in the workplace.

The frameworks of skills and requisite learnings reviewed here provide a basis from which the learning needs for secondary students of the future can be considered. While the functional and largely economic perspectives which have given rise to these frameworks are not the only considerations in assessing or devising the senior curriculum, they are important ones. The analysis in this study will build on these frameworks to analyse the current suite of offerings in the senior years. Before presenting this analysis, however, it is important to consider the nature of the curriculum and its implications for such a task.

3

An approach to curriculum analysis

Hamilton (1987, p. 34) traces the origins of the English use of the word 'curriculum' to Glasgow University in the late sixteenth century, where it referred to 'notions of order, coherence and intellectual discipline' of an entire programme of studies. While contexts of application of the term have broadened, this aspect of the term has survived: 'To create a curriculum is to systematise stored-up human experience' (p. 35).

The curriculum can be conceptualised in various ways. Ross (2000, p. 8) cites the simplest meaning as 'a definition of what is to be learned'. This concept, sometimes called the *intended* curriculum, is the most common referent of the term, and includes formal statements of purpose, aims or intended outcomes, or, in some cases, lists of content or concepts to be known, or competencies or skills to be mastered. Of course, those implementing the formal curriculum will interpret curriculum statements in particular ways, and in translating a curriculum into practice, will draw on sources other than the curriculum. These sources will influence the translation into practice of the formal intended curriculum.

This gives rise to the notion of the *enacted* curriculum, which refers to the experiences designed and provided by an educational institution or program in order to achieve the stated aims. The idea of the enacted curriculum recognises that when stated intentions are put into practice, they will be interpreted, prioritised, selected and augmented in various ways by those who implement them.

The *hidden* curriculum refers to the knowledge, beliefs, values or practices which are implicit in the practice or culture of an institution or program and learned by its participants, but which are not explicitly derived from or openly designed to achieve the stated aims. Examples might be aspects of school rules and procedures in which students engage and from which they learn such things as how to relate to others, what is appropriate behaviour, how to cooperate or compete, etc. It is also possible to consider the *informal* curriculum as those learnings which result from the participation in the institution or program, but which are not part of the enacted or hidden curriculum. This would include the learning which results from socialising with other students or from informal contacts with staff.

In contrast to the common narrow definition, Ross (2000, p. 9) quotes the English school inspectorate's definition of the school curriculum as consisting of 'all those activities designed or encouraged within its organisational framework to promote the intellectual, personal, social and physical development of its pupils'. Cited in illustration are formal lessons, and what has been described here as the hidden curriculum, including 'the quality of relationships' and 'values exemplified in the way the school sets about its task and the way in which it is organized and managed'. The HMI also suggest that teaching and learning styles 'strongly influence' the curriculum and 'in practice cannot be separated from it'.

This view broadens the notion of curriculum to the point where the distinction between curriculum and pedagogy dissolves. The enacted curriculum is synonymous with the

experience of learning, which is constructed in the teaching strategies through which learning occurs. This point is significant for the task undertaken here, and will be discussed in Chapter 5. The focus of this study is the intended curriculum described in syllabuses and subject area specifications devised for years 11 and 12 in Queensland schools.

Analysing the intended curriculum

To evaluate the adequacy of curricula we need to consider their conditions of existence, just what they represent, and how they relate to the phenomena they attempt to describe and prescribe. Curricula are attempts to articulate knowledge, and any assessment of a curriculum will be influenced by our views of the nature of knowledge and how it can best be represented.

Knowledge, like history, is a seamless web, which can be classified only by imposing certain artificial strictures. Knowledge exists in the myriad practices of institutions of learning, government and commerce, and in the day-to-day discourse of civil society. It is housed in formal stocks of knowledge, but also in the practices of the community, the trades and professions, leisure, religious and cultural pursuits, and a host of other contexts. Knowledge also shares with history a constant dual dynamic, for while it is constantly changing as a result of new questions, discoveries and technologies, it is also always being reinterpreted as a result of new perspectives and priorities. Consequently, it can never be fully comprehended, and any description of it is doomed to obsolescence.

A curriculum is an articulation of and from these practices. It seeks to crystallise and describe knowledge in a form which will serve the various functions of the curriculum. It is forced to freeze the dynamic development of knowledge at some point in time, and classify it in ways that allow it to be organised, scheduled, delivered and assessed. Any description of the curriculum is both retrospective and proactive. It is retrospective in the sense that it tries to fix in language the valued aspects of past practice in order to ensure their continuation. It is proactive in that it tries to influence and guide the practice in ways that are seen to be desirable.

Since no practice can be fully comprehended in language, the descriptions of the curriculum articulate only certain aspects of it. A subject syllabus can only point to certain key aspects of the practices of the subject, the details of which must be reinserted by those who implement it in order to bring the practice to life. A syllabus represents a knowledge practice as a map abstracts and simplifies a landscape, or as the visible part of an iceberg signifies a much larger object beneath the surface.

The process which produces this situation suggests two further metaphors. A syllabus is the distillation of the practices of the discipline, and is reconstituted by teachers in the planning of school programs and lessons, and in their classroom implementation. A test of a syllabus is the extent to which its reconstitution in practice matches its intentions.

We can also see the curriculum as a net used to capture and constrain knowledge to some intended form. The syllabus describes only key points of the intended learning, and the links among them, just as a net comprises knots and threads. When a syllabus tries to capture the knowledge practice it represents, the gaps between the knots and threads need to be filled in. As with any net, some of what it attempts to capture will

escape. Again, the syllabus is only a partial description of what it tries to represent. The process of distillation and reconstitution, and the incompleteness of the fabric of the syllabus, place limits on what can be expected of an analysis of curriculum documents alone.

Like all official documents, public statements of the aims, objectives and programs of study are multi-vocal, with numerous functions, audiences and intended effects. For instance, syllabuses will be framed to:

- provide a guide from which schools and teachers will develop teaching programs;
- act as a public statement of what schools are achieving, and a promotion of their activities for interested parties such as parents or employers;
- establish a set of desired outcomes which can be the basis of an accountability process.

Syllabuses also have multiple authors. Most syllabuses are revisions of earlier versions, retaining elements and traces of their predecessors. They are produced according to certain centrally prescribed parameters and frameworks about their content and form, so that those who write them do so within certain constraints laid down by others. Finally, syllabuses are produced by committees or working parties, so documents will reflect a range of views, with varying degrees of unanimity and consistency.

As a result of this process of textual construction, curriculum statements will be partial and selective, reflecting various and sometimes competing priorities and preferences. They will also be abstract and general, since they are intended to be flexible enough to apply to a range of contexts and student needs. However, this generality inevitably means that applying these statements as guides to policy or practice requires considerable interpretation and inference.

Consequently, it needs to be acknowledged that statements of the intended curriculum cannot fully comprehend the range of knowledge practices they seek to describe. To the extent that this applies, the curriculum evades explicit consideration and analysis. Since curriculum documents are multi-vocal, abstract and intentionally open to interpretation, it follows that any summary of them will reflect this. No single perspective will represent the diversity and complexity of the documents. The following section describes the process by which the current analysis was conducted.

Methods for analysing the intended curriculum

The analysis presented here sought to identify the extent to which the requirements for the various pathways described in Chapter 2 were evident in the syllabuses and subject area specifications of the senior curriculum in Queensland. The frameworks reviewed in that discussion were combined and reduced to produce a single framework, which was applied through a content analysis of the syllabuses and specifications.

Content analysis is a fraught method, since it involves assumptions about language that are generally questionable. Key among these are that:

- Text has meaning that can be classified according to discrete categories;

- Text meaning can be reliably classified in 'objective' or replicable ways that exclude individual interpretation;
- Meanings can be equated from one text to another, or from one part of a text to another, for the purposes of generalising and collating classifications. This assumes that meaning inheres in small units (words, phrases), can be abstracted from context, and can be added together as equivalents.

While these assumptions are fallacious, a pragmatic approach suggests that they are not so mistaken as to make the exercise worthless. However, they do suggest caution in interpreting the results. Given that syllabuses are produced and largely consumed within professional cultures, their effective meanings are those constructed in use in those cultures. An attempt to identify these meanings from outside this context may or may not be able to identify the effective or authentic meanings in use.

The analytical framework and method

From a list of the recommendations from the various frameworks described in Chapter 2, a composite framework was created, by grouping the various elements, deleting repeated categories, and combining similar ones. The resulting framework of preparatory requirements is shown in Table 6. Syllabuses and Subject Area Specifications were analysed, with a mark being recorded in the appropriate box for each mention of the curriculum outcome. Table 9 in Appendix 1 illustrates the process, showing verbatim extracts from the text of the Accounting syllabus which were taken to indicate the relevant curriculum element.

Syllabuses and SASs have sections on aims, objectives, course organisation (describing how subject units should be selected, sequenced and constructed), learning experiences, and assessment, as well as sections common to all syllabuses on language and quantitative skills and educational equity. Since the import of these sections is likely to vary (for example, when learning experiences are only suggested, whereas objectives and assessment matrices are essential), these sections were listed separately. Tables of the resulting analyses for all syllabuses and specifications analysed are in Appendix 2 Tables 10-32.

Since assessment could be taken as a strong indicator of the intended outcomes of the curricula, separate counts were made of references in the Assessment sections of the documents. In the case of the standards matrices, counts were made of references in the description of Level C standard, equivalent in general terms to a Sound Achievement level. It is worth mentioning here that these descriptions were generally very brief and skeletal, and are often not a clear and comprehensive reflection of the rest of the curriculum documents. Were an analysis to look only at the descriptions of standards of achievement, a very different picture would emerge of a quite limited range of learnings.

Syllabuses and SASs were sampled from the range offered by the Queensland Studies Authority (QSA). Of the 54 QSA Subjects, syllabuses were chosen which had enrolments in 2004 of more than 3000 enrolments, or approximately 10% of total student enrolments. This criterion meant that no language other than English was included in the sample, so Japanese was added. The selection resulted in a sample of 23 subjects, shown in the summary Table 7. For Subject Area Specifications, specifications were chosen which had enrolments in 2004 of more than 2000, resulting in a sample of eight

of the twelve specifications developed by the QSA, covering 70% of the total SAS enrolments. These specifications are shown in Table 8.

The analysis was conducted by the two authors after an initial consultation on the application of the framework. After practice and consultation, an agreement rate of 85% was independently established, suggesting that the categories were sufficiently clear and discrete for the analysis to proceed. Consultation continued throughout the process in cases where the classification of content was not straightforward. While this is a high level of agreement for the categories and documents used, the process of analysis was difficult to apply in the same way across such a wide range of subject fields. Accordingly, while the totals across subjects are reliable indicators of relative frequencies, the analysis of any sub-category in any particular subject should be treated with caution. Totals and percentages of the analysis across all categories and sub-categories for all subjects and specifications are shown in Appendix 3 Tables 33 and 34. Results of the analysis are presented in the following chapter.

Content category	Common syllabus elements	Subject level aims, objectives, content	Learning Experiences	Unit level content	Assessment
1 Thinking					
A Analyses/interprets information, problems and issues					
B Evaluates and applies a range of strategies for solving problems					
C Uses evidence, argument and logical reasoning					
D Predicts consequences					
E Synthesises information and concepts for					
F Uses values in decision making and judgment					
G Uses mathematics to solve problems					
H Tests assumptions taking the context of data and					
I Develops metacognitive skills					
2 Basic information and communication skills					
A Listens and understands					
B Speaks clearly and directly					
C Writes to the needs of the audience					
D Reads independently with understanding					
E Speaks and writes in languages other than English					
F Uses numeracy effectively (estimates, calculates)					
G Uses and interprets tables and graphs					
H Selects and organises relevant information					
I Uses routine IT skills (e.g. processing forms or simple keyboard activities)					
J Uses IT to seek, process and organise information					

K	Develops and delivers AV/multimedia presentations					
L	Uses IT as a planning/management tool					
3	**Interpersonal and teamwork skills**					
A	Works productively and cooperatively in groups					
B	Participates in group goal-setting, planning, role allocation					
C	Takes the role of chairperson					
D	Coaches, mentors and gives feedback					
E	Facilitates social relations in teams and with individuals					
F	Empathises/understands others' needs					
G	Works sensitively with people of different ages, gender, race, religion or political persuasion					
H	Negotiates/resolves conflicts					
I	Is assertive and persuasive					
4	**Effective participation and work in context**					
A	Understands contexts and situations beyond school through observation or experience					
B	Uses appropriate strategies, procedures and networks in contexts beyond school					
C	Participates in problem solving or developing projects in contexts beyond school					
5	**Initiative and creativity**					
A	Shows independence in defining and addressing problems or projects					
B	Develops creative, innovative solutions					
C	Is adaptable, flexible and receptive to new information and ideas					
D	Deals with uncertainty and knows when to seek expert help					
E	Takes initiative and makes decisions					
6	**Organisational skills**					
A	Establishes clear project goals and deliverables					
B	Prioritises and coordinates tasks					
C	Identifies information and resources needed for problems or tasks					
D	Manages the process within an appropriate timescale					
E	Copes with unexpected problems					
F	Monitors progress and evaluates outcomes					
7	**Independent lifelong learning**					
A	Recognises own strengths and weaknesses or preferred learning styles					
B	Takes responsibility for and manages own learning					
C	Is committed to ongoing learning and learning new skills					
D	Critically reflects on own learning					
8	**Personal development**					
A	Is self-motivated and evaluates own performance					
B	Demonstrates self-management and self-reliance					
C	Builds and sustains relationships					

D	Respects and attends to others' perspectives					
E	Shows loyalty, honesty, integrity, ethics					
F	Is reliable					
G	Has positive self-esteem					
H	Accepts responsibility for own actions and their effects on others					
I	Handles emotions					
9	**Deep learning/ knowledge**					
A	Reflects on and evaluates own views and opiniioins and those others.					
B	Connects and integrates bodies of knowledge.					
C	Recognises tentativeness and change in knowledge and solutions					
D	Applies concepts or theoretical frameworks from discipline to research issues and problems					
E	Evaluates quality of performance, output and outcomes					
F	Engages thoughtfully with values issues					
G	Articulates own ideas and vision					
H	Applies and reflects on knowledge and methods to see phenomena in new ways,					
I	Develops a global/national/historical/cross-cultural perspective					
10	**Employment skills/knowledge**					
A	Uses basic clerical skills					
B	Understands the needs of customers					
C	Budgets and manages finances					
D	Resolves customer concerns					
E	Understands basic business and workplace systems and processes					

Table 6: A framework for analysing syllabuses

4

Intended learning outcomes in syllabuses and SASs

Tables 7 and 8 present summary results of the analysis of syllabus and SAS documents by category. Full results for sub-categories are presented in Tables 33 and 34 in Appendix 3. Two implications follow from the frequency of mentions of categories of outcome. First is whether and to what extent the outcome appears at all; second, the relative number of mentions indicates the importance attributed to the outcome compared with others. This is a very crude assessment, since one mention in one part of a syllabus (such as the Standards matrix), is likely to be more influential than a number of mentions in some other section, such as Learning Experiences. These distinctions are beyond the level of detail possible here, but they can be tracked in the tables in Appendix 2.

The chief emphasis of Authority Syllabuses is on *Basic Information and Communication Skills*, which accounts for 44% of the intended outcomes, or an average of 40 mentions per syllabus. Syllabuses are relatively consistent in their references to these skills, with only one syllabus having fewer than 30 mentions. Quite often, the references are to communication skills in general. The most commonly mentioned of the sub-categories is *Selecting and Processing Information*, followed by *Writes to the Needs of the Audience*. Relatively infrequent are mentions of *Uses Routine IT Skills* (though these may be assumed in the more frequently mentioned *Uses IT to Process Information*). Also relatively rare are *Uses IT as a Planning or Management Tool*, and *Develops AV/Multimedia Presentations.*

The next most frequent category is *Thinking*, comprising 22% of mentions. The key sub-categories here were *Synthesises Information for Problem Solving* and *Analyses and Interprets Information*. *Tests Assumptions*, *Uses Values in Decision Making*, *Uses Mathematics to Solve Problems* and *Predicts Consequences* were not evident in a number of syllabuses. Particularly noticeable is the lack of reference to *Metacognitive Skills.*

Deep Learning and Knowledge follows with 12%, or 11 mentions per syllabus. The distribution across sub-categories is relatively even, with the exception of the rather idiosyncratic *Articulates Own Ideas and Vision* and *Sees Phenomena in New Ways*. However, the total frequency of mention of *Deep Learning and Knowledge* elements is less than might be expected, and the variability is surprising. For instance, 12 of the 23 subjects did not identify *Reflects on and Evaluates Own Views and Opinions and Those of Others* as an intended outcome, while nine did not identify *Develops Global/National/Historical/Cross –cultural Perspectives,* and an equal number omitted *Engages Thoughtfully with Values Issues*.

Organisational Skills accounts for 7% of mentions, but its distribution is very uneven, with five syllabuses accounting for half the mentions, and some not mentioning it at all. No other category accounts for more than 5% of mentions. A number of syllabuses do not nominate *Participation* or *Independent Lifelong Learning* at all as intended outcomes, and *Employment Skills* is quite rare.

An interesting feature of these results, which is apparent in Tables 7 and 8 and in Tables 33 and 34 in Appendix 3, is the great variability in categories and sub-categories across subjects. Given the number of possible combinations of subjects in the enrolment of any student, it is difficult to say just what range of outcomes might result from any particular student's subject choice, other than *Thinking* and *Basic Information and Communication Skills*, which are the only categories evident in every subject. If preparation for post-school pathways is an intended outcome for all students, and if the approach taken here to identifying these outcomes is valid, then dealing with this variability is a challenge for curriculum design.

The pattern of results for Subject Area Specifications is similar to Authority syllabuses in that *Basic Information and Communication Skills* and *Thinking* are the two most frequently mentioned outcomes with 40% and 20.5% respectively. *Selecting and Processing Information* is again the most frequent Basic Skill, though *Uses Numeracy Effectively* ranks more highly than in Authority syllabuses. The order of frequency of sub-categories of *Thinking* is also similar, with *Synthesises Information for Problem Solving* and *Analyses and Interprets Information* the two most common. While seven of the syllabuses did not mention *Develops AV/Multimedia Presentations*, all but one of the SASs included it. *Develops Metacognitive Skills* was mentioned only once.

All SASs indicated *Interpersonal and Teamwork Skills* as outcomes, with the average number of mentions almost nine per specification, compared with only four per subject in the syllabuses. *Personal Development* is mentioned in all but one of the SASs, with an average of six mentions per SAS, compared with fewer than three in the syllabuses. On the other hand, *Deep Learning and Knowledge*, while present in all SASs, is mentioned on average fewer than four times per specification, compared with eleven in the syllabuses. Perhaps surprisingly, *Employment Skills and Knowledge* figures very seldom in the SASs.

The overall patterns of emphasis in the two types of curriculum document indicate interesting similarities and differences. Both groups highlight *Uses Basic IC Skills* and *Thinking* as the most important categories. In Basic IC Skills, *Selecting and Processing Information*, the range of language skills of listening, speaking, reading and writing, and the use of numeracy and tables and graphs are important across the curricula. Both groups, especially the syllabuses, give relatively little attention to *Develops AV/Multimedia Presentations*. In *Thinking*, analysing, synthesising for problem solving, using evidence and argument are important intended outcomes in most documents, but *Metacognitive Skills* is notable for its absence, given what has been said about its contribution to transferability.

Apart from the common categories of *Uses Basic IC Skills* and *Thinking*, syllabuses and SASs show different emphases. Syllabuses give mixed attention to all but *Deep Learning and Knowledge*. *Interpersonal Skills*, *Participation*, *Initiative and Creativity*, *Independent Learning* and *Personal Development* seldom receive more than a few mentions, and sometimes none at all. SASs give more emphases to these, especially *Interpersonal Skills* and *Personal Development*. On the other hand, the absence of *Deep Learning and Knowledge* in the SASs is marked. The overall picture here is complex, showing considerable variability across subjects in the evidence of some categories, and a relative lack of emphasis on some outcomes seen as important in the pathways literature.

Content categories	Accountg	An. History	Biology	Bus Com Tech	Chemistry	Drama	Economics	English	Geography	Graphics	Home Econ.	Info. Proc. Tech	Japanese	Legal Studies	Maths A	Maths B	Maths C	Modern History	Multistrand Science	Physical Education	Physics	St of Religion	Visual Arts	Totals	Percent
Thinking	14	19	19	10	27	16	20	16	38	29	26	36	10	24	15	20	18	19	31	10	18	26	24	**485**	**22.7**
Basic IC skills	67	30	39	38	44	30	26	38	47	44	32	55	81	47	42	37	40	30	38	49	31	31	31	**947**	**44.3**
Interpers'al skills	2	3	4	7	10	5		2	2	7	3	6	9	7		1		3	4	9	3	1	3	**91**	**4.3**
Participation	2	1	5	2	2	1			6	1			3	5				1	6		1	2	1	**39**	**1.8**
Initiative, creat'y		2	3		2	5	3	1	2	12	1	4	2	1	2	1	1	2	3	1	2	3	7	**60**	**2.8**
Organ'al skills		20	5	7	8	2	4	4	4	13	17	16	5	5	4	2	2	21	1		3	2	4	**149**	**7.0**
Independent lng	3	5		2	2	2	3	3	1			1	2		1	1		5		2		1	2	**36**	**1.7**
Personal devt	1	4	4	5	4	4	1	2	2	4	1	8	1	1				3	5	5	2	2	2	**61**	**2.9**
Deep learning	5	21	6	0	11	2	10	6	13	8	7	18	12	26	6	4	5	26	19	13	9	2	25	**254**	**11.9**
Employm't skills	3			7			1								5									**16**	**0.7**
Totals	**97**	**105**	**85**	**78**	**110**	**67**	**68**	**72**	**115**	**118**	**87**	**144**	**125**	**116**	**75**	**66**	**66**	**110**	**107**	**89**	**69**	**70**	**99**	**2138**	**100**

Table 7: Totals for all Authority Subjects by outcome group

Content category	Creative Arts	English Communicatio...	Hospitality Studies	Info and Com Technology	Physical Recreation	Prevocational Mathematics	Religion and Ethics	Tourism	Totals	Percent
1 Thinking	7	14	28	9	15	28	25	15	141	**20.5**
2 Basic information and communication skills	15	50	29	33	28	43	30	47	275	**39.9**
3 Interpersonal and teamwork skills	5	1	7	4	27	3	10	12	69	**10**
4 Effective participation and work in context	1	3	5		2			4	15	**2.2**
5 Initiative and creativity	7	1	3	6	4		1	1	23	**3.3**
6 Organisational skills	7	4	14	13	10		7	6	61	**8.8**
7 Independent lifelong learning	6	2	2	3	2		2	0	17	**2.5**
8 Personal development	5	2	5	12	8		10	8	50	**7.3**
9 Deep learning/ knowledge	1	5	3	5	3	1	8	3	29	**4.2**
10 Employment skills/knowledge			1			2		6	9	**1.3**
	54	**82**	**97**	**85**	**99**	**77**	**93**	**102**	**689**	**100**

Table 8: Totals for all Study Area Specifications by outcome group

5

Issues for Consideration

It is not intended here to make general assessments of the adequacy of the syllabuses and SASs in light of the results of the content analysis. The frameworks on which the analysis was based are not without their problems, as illustrated in the references to debates about transferability and the value of generic skills. However, for the purposes of the analysis, the frameworks and categories were taken largely at face value.

It can be said that certain outcomes which figure prominently in discussions of employability and lifelong learning receive relatively little emphasis in the syllabuses and specifications. The importance of this will depend on one's views on fundamental questions about the purposes of education which are beyond the present brief. The results presented here should inform such discussions

However, in the course of the study, a number of issues arose which warrant mention, for they highlight aspects of the curriculum which can significantly affect the adequacy of the documents as a basis for meeting students' post-school needs.

One such issue is deciding which aspects of the syllabuses should be taken as general grounds for assessing their contribution. Most syllabuses and specifications contain considerable areas of choice. The most frequent instances of this are the learning experiences through which the subjects are learned. However, in many cases, it applies also to units of study, where schools are able to select the particular unit topics to be studied. In some syllabuses, core units are specified with additional elective units. In others, there are no required units and the course is constructed completely from a list of electives. In some cases, the number of electives to be studied is specified; in others, schools are advised to choose the number of electives to be studied within a specified range; in yet others, the number of elective units to be studied is completely open.

In such a situation, identifying which units should be counted as contributing to the 'preparation' of the students is very difficult. The present study included all core units in the analysis, and the minimum number of elective units specified in the syllabus or specification course organisation advice.

Another aspect of choice within syllabuses is the language used to recommend the importance of various options. This language varies from one document to another. For instance, in listing learning experiences, syllabuses and specifications state that certain experiences are 'recommended', 'possible' or 'suggested'. In some cases the documents identify experiences which students 'could' or 'should' have, or should 'have the opportunity' to experience. These terms refer to quite long lists of possible learning experiences, often described as 'neither prescriptive nor exhaustive'. In such a situation it is again difficult to identify experiences which student can reasonably be expected to have in the course of study. While no doubt the practice of the subject in schools would tend to include some experiences more frequently than others, this is not apparent in the documents. In the current study, learning experiences listed in the general sections of that name were included in the analysis, on the assumption that their inclusion there indicated that they were important. However, it is impossible to say whether the

experiences listed are actually implemented in schools. Lists of possible learning experiences which accompanied individual units were not included in the analysis.

This is an issue not only for this content analysis, but has deeper significance in influencing the nature of the subject, for the learning experience is the means by which the subject is realised. This is especially so for the process objectives of the syllabus. The highly optional nature of learning experiences seems to imply that they are means to the ends of the subject, and that different choices will nonetheless achieve the same outcomes. However, this is clearly not the case.

Numerous examples could be used to demonstrate this. In the case of the Legal Studies syllabus, units are presented as lists of 'understandings' and 'recommended subject matter'. These are intended to be implemented through learning experiences chosen by teachers. Tables of 'Suggested learning experiences' are provided for each section, each with 20-30 experiences, giving over 200 experiences in total. The assumption is that teachers would choose experiences which would meet the objectives of the subject. However, in any section, the outcomes will be markedly different depending on what learning experiences are chosen. For instance, in the section on Crime and Society, the twenty suggested experiences include 'explore viewpoints on the role of the media', 'design a board game', 'survey the school population', and 'organise a 'Drugs and the Law Awareness Night'. In terms of the 'subject matter', it may be (though it is doubtful), that each of these experiences would involve the same information and understandings. However, it is clear that the experiences do not include the same thinking, interpersonal, participation or organisational skills.

The nature of the subject in such cases will be strongly determined by which suggested learning experiences are chosen. Having such an open approach to the choice of learning experiences is problematic. This is especially so in the case of the performative outcomes which figure so highly in much of the pathways literature. A focus on performative outcomes would imply much clearer guidance on important learning experiences.

This point is also relevant to the question of how senior schooling prepares students for the kinds of learning which they will meet in the post-school context, quite apart from the knowledge and skills laid down. Approaches to teaching and learning in universities and TAFE and the workplace are changing, with greater use of IT and online learning, larger classes and higher student/staff ratios. The trend is to more flexible learning environments to enable students to mix work, study and other commitments. In such circumstances, students need to be able to operate independently in their learning, especially in the use of information and communication technologies. In these respects, the curriculum documents present a mixed picture.

The optional nature of learning experiences noted in the comments above makes it difficult to assess the degree of independent learning in senior studies. However, references to independent learning and the development of initiative were relatively rare. Eight of the 23 Authority syllabuses and half of the SASs did not mention *Shows Independence in Problems and Projects* as an outcome, while only five syllabuses and three SASs indicated *Takes Responsibility for and Manages Own Learning* as an intended outcome. Only two syllabuses and three SASs referred to *Critically Reflects on Own Learning*. The lack of reference to *Develops Metacognitive Skills* is also relevant here.

More frequent were references to the basic skill of *Uses IT to Seek, Process and Organise Information* which was mentioned in all but one of the syllabuses and six of the eight SASs. However, an issue here was the frequent statement in the documents that the use of IT was *not* a specific requirement, presumably to avoid problems of lack of resources. To the question of whether schools prepare students, not only for subject related knowledge and basic skills of communication and processing information, but for becoming independent and reflective learners, the content of current curriculum documents do not provide a ready answer.

This analysis, derived as it was from a literature driven by assumptions of performativity, has reproduced that emphasis, so that the analysis focuses strongly on 'knowing how' rather than 'knowing that'. However, many of the syllabuses are elaborated largely in terms of 'subject matter', the topics and descriptive statements of information and understandings to be learned. This creates a mismatch between the process emphasis of generic skills frameworks and the topic and information emphasis of significant sections of the syllabuses and specifications. The issue arises in other areas as well. For instance, the employability frameworks include reference to 'showing' attributes of honesty, integrity and ethics, presumably by demonstrating it in behaviour, whereas the almost universal practice in the documents is that students show 'appreciation' or 'awareness' of these dispositions.

It could be asked whether some of the outcome groups which figure less frequently in the senior curriculum are dealt with in the compulsory years. To check this possibility, a similar analysis was applied to Level 6 level and outcome statements in the eight QSA Key Learning Area syllabuses. Table 35 shows the results for this analysis, revealing a similar spread of results to the Authority subject syllabuses, though with an even stronger showing for *Deep Learning and Knowledge*. *Thinking* and *Basic IC Skills* are prominent, but the remaining categories are not mentioned in any consistent or comprehensive way. These syllabuses also reflect the emphasis on knowledge, cognition and basic skills, with the more personal and performative outcomes receiving much less attention.

These matters are particularly important with respect to the demands identified in vocational education and lifelong learning pathways, where, at least at the system level, the concern for generic abilities is dominant. The university pathway gives more emphasis to subject specific knowledge, where issues of deep knowledge become more important, though, as the analysis showed, this is not always well represented in the syllabuses. However, even here the generic approach is strong and increasing. This may increase further if both school and university curricula continue to expand, making the matching of subjects in the two contexts more difficult.

Along with this is the tendency in many areas for a greater link between institutional and workplace learning, ranging from problem based medical degrees, to school based teacher education, the growth in workplace training, the recognition of prior learning and cross-institutional links of TAFE and universities. While these developments may seem to lead to a more 'practical' element in post-school learning, the changing nature of the workplace at the same time is demanding more flexible, complex and higher level problem solving abilities. The implications of these trends will continue to be a challenge to the preparatory function of the senior curriculum

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Appendix 1

Table 9: Content analysis of 2003 Accounting syllabus

Content category	Common syllabus elements	Subject level aims, objectives, content	Teaching strategies	Unit level content	Assessment
1 Thinking		knowledge and practical skills of accounting required to record, report, process, understand, investigate, analyse, critically examine, interpret, evaluate and communicate accounting data and other information to interested parties, both external and internal, for decision making (3)			
A Analyses problems and issues		apply accounting knowledge and concepts to analyse, select and organise data in practical accounting situations which involve complex reasoning			applying accounting concepts and principles to analyse and interpret information, solve problems, and make valid decisions and recommendations. (45)
B Evaluates and applies a range of strategies for solving problems	evaluating and assessing accounting decisions made (9)				

E Synthesises information and concepts for problems solving and decision making		ability to apply accounting knowledge and skills in problem solving, decision making and financial management which will be of value in their business, social and personal lives (3) analyse and interpret accounting data to solve problems and make accounting decisions, judgments and recommendations (4) use complex practical processes to solve problems and make decisions (5)			applying accounting concepts and principles to analyse and interpret information, solve problems, and make valid decisions and recommendations. (45) analyses and generally interprets accounting information to make valid decisions (49) solves problems involving complex practical processes on some occasions. (50)
G Uses mathematics to solve problems	students should be presented with experiences that stimulate their mathematical interest and hone those quantitative skills that contribute to operating successfully within each of their subject areas. (7)	use accounting terminology, assumptions, procedures, and basic mathematical techniques to solve fundamental accounting problems. (4)			

H Tests assumptions taking the context of data and circumstances into account					
2 Basic information and communication skills		knowledge and practical skills of accounting required to record, report, process, understand, investigate, analyse, critically examine, interpret, evaluate and communicate accounting data and other information to interested parties, both external and internal, for decision making (3) effective use of the communication skills required in the discipline of accounting (3) communicate accounting knowledge and understandings, in written and/or nonwritten forms, using language conventions and terminology (4)			a range of communication forms (2)
A Listens and understands			listening to guest speakers		

			(8)		
B Speaks clearly and directly			conducting debates and discussions (8) delivering oral presentations (8)		clarity of expression and logical exposition (44) communicates a range of accounting information and understandings in written and/or non-written forms, in a manner which is generally clear and accurate, using some appropriate terminology. (49)
C Writes to the needs of the audience	Students are required to communicate accounting information through activities such as: preparing − explanatory and descriptive paragraphs − business letters and memoranda − letters to the editor − letters of advice − emails − short reports − extended and formal reports − articles for professional journals − newspaper articles				clarity of expression and logical exposition (44) assessment techniques selected must include, as a minimum, extended response items.. (45) communicates a range of accounting information and understandings in written and/or non-written forms, in a manner which is generally clear and accurate, using some appropriate

	(6)				terminology. (49)
E Speaks and writes in languages other than English	presenting seminars, discussing and debating issues (6)				
F Uses numeracy effectively (estimates, calculates)	extract, convert or translate information given in numerical forms, diagrams, graphs or tables (7) calculate and apply numerical procedures (7)	prepare and present accounting records and reports from figures which may require simple calculations (4) prepare and present accounting records and reports from figures, some of which require calculations derived from complex accounting situations. (5)			preparing and presenting accounting reports from figures which may require simple calculations. (44) preparing and presenting accounting reports from figures, some of which require calculations derived from complex accounting situations (45) Practical application items **...** include questions involving not only basic numeracy but also complex problem solving using mathematical calculations in accounting situations. (46)
G Interprets tables and graphs	preparing and presenting information using graphs and charts (6) extract, convert or translate information given in numerical		analysing statistics and data. (8)		analysing, selecting and organising written, practical and/or graphical information (44) Practical application items**...**include questions involving

	forms, diagrams, graphs or tables (7)				not only basic numeracy but also complex problem solving using mathematical calculations in accounting situations. (46)
H Selects and organises relevant information	Students should be taught how to select and sequence information into a coherent, logical response. (7)	select and organise relevant data (4) process accounting information in usual situations (4) apply accounting knowledge and concepts to analyse, select and organise data in practical accounting situations which involve complex reasoning (5) apply accounting knowledge and concepts to record, process and report accounting information in a variety of situations involving practical elements that are either usual but complicated, or unusual	students will collect, analyse, organise and evaluate the quality and validity of accounting information from a variety of sources, (9)		selecting and organising relevant data (44) processing accounting information in usual situations (44) analysing, selecting and organising written, practical and/or graphical information (44)

			(5)			
I	Uses routine IT skills (e.g. processing forms or simple keyboard activities)	make use of technologies, including calculators and computers (7)		using computers and the internet (8) teachers are encouraged to make use of technologies in information and communication, such as computer-based and web-based learning. (9) Computers have a variety of uses in Accounting: • entering data into commercial accounting packages (9) preparing word-processed responses in a variety of genres. (9)		
J	Uses IT to seek, process and organise information		awareness of the role of technology in accounting and an ability to apply appropriate technologies in carrying out accounting and financial procedures (3) knowledge and understanding of the applications of information technology and	using computers and the internet (8) The use of these technologies for learning serves as an aid to the more efficient implementation of tasks such as: • analysing and interpreting reports • preparing graphs • researching accounting topics for	recording a variety of business transactions using an accounting package (33) interpretation of reports generated by an accounting package (33)	Spreadsheeting (41)

		accounting packages to record information and assist in decision making (3) Students should use: • spreadsheets to perform calculations and present numeric information • the internet, particularly in relation to understanding e-business and accessing websites and on-line databases for research purposes • other packages, such as word processing for the preparation of letters, reports, and memoranda, and datashow and multimedia presentations. (13)	assignments (9) using spreadsheets and other programs to construct models, consider 'what if' scenarios, calculate amounts such as depreciation, and prepare reports and graphs (9) using the internet in a variety of situations including coursework, sharemarket games, and problem-solving activities (9)		
K Develops and delivers AV/multimedia presentations	producing datashow or multimedia presentations (6) producing radio or TV news reports • developing videos or websites. (6)		using audiovisual material (8) using computers for classroom datashow presentations, in conjunction with presentation software such as datashow and graphics		

			programs (9)		
L Applies IT as a planning/management tool		knowledge and understanding of the applications of information technology and accounting packages to record information and assist in decision making (3) It is a requirement of the course that spreadsheet design and construction be used in cash budgets (RD5), and in at least one other major component within any area of study, (13) Students should use: • accounting packages to understand the accounting process and how it operates in the real world (13)			Assessment techniques selected must include…practical responses which demonstrate the use of an accounting package and the design and construction of a spreadsheet. (45)
3 Interpersonal and teamwork skills					
A Works productively and cooperatively in groups			engaging in group work (8)		
G Works sensitively with people of different ages, gender, race, religion or political persuasion	In choosing appropriate learning experiences teachers can introduce and reinforce non-racist, nonsexist, culturally sensitive and unprejudiced attitudes and				

	behaviour. (11)				
4 Effective participation and work in context					
A Understands contexts and situations beyond school through observation or experience			participating in excursions to suitable venues (8) engaging in work experience (8)		
5 Initiative and creativity					
6 Organisational skills					
7 Independent lifelong learning					
C Is committed to ongoing learning and learning new skills		interest in accounting and a keenness to pursue accounting knowledge (5)			
8 Personal development					
E Shows loyalty, honesty, integrity, ethics		awareness of social, ethical, legal and professional responsibilities in accounting. (3) appreciation of the need for ethical conduct, social responsibility and the use of Accounting Standards in accounting practice. (5)			
9 Deep learning					
B Connects and integrates bodies of knowledge.	use skills or apply concepts from one problem or one subject area to another. (7)				

D Uses concepts or theoretical frameworks to research issues and problems		apply theoretical concepts and principles to accounting situations (4) demonstrate and apply fundamental accounting concepts (4)	problem solving in the context of theoretical and practical accounting situations.(9)		
10 Employment skills					
C Budgets and manages finances		It is a requirement of the course that spreadsheet design and construction be used in cash budgets (13)			
E Understands basic business and workplace systems and processes and their relationships		knowledge of the nature and purposes of accounting, its role in business, and its relevance to business financial decision making (3) knowledge and understanding of the procedures used by small business organisations to process accounting data, produce reports and make decisions (3) business acumen and a continuing interest in accounting and business-related issues (3) awareness of the role accounting plays in		analysis and interpretation of published accounting reports of a company (including additional ratios for companies) (34)	

		the decision-making processes in a business situation (5) students should develop skills to become efficient users of business computer applications (13) Students should use: • accounting packages to understand the accounting process and how it operates in the real world (13)			

Appendix 2

Note that in the following tables, row sub-categories with a zero frequency are omitted. An entry of 'n' indicates that the sub-category was pervasive throughout the document.

Table 10: Contents of the Accounting syllabus

Content category	Common syllabus elements	Aims, objectives, organisation	Learning Experiences	Unit level content	Assessment	Totals
1 Thinking		•				**1**
A Analyses/interprets problems and issues		•			•	**2**
B Evaluates/applies strategies for solving problems			•			**1**
C Uses evidence, argument and logical reasoning		•				**1**
E Synthesises information and concepts for problem solving and decision making		••••			•••	**7**
G Uses mathematics to solve problems	•	•				**2**
2 Basic information and communication skills		••	•		•	**4**
A Listens and understands			•			**1**
B Speaks clearly and directly	••	•	••		••	**7**
C Writes to the needs of the audience	•	•			•••	**5**
F Uses numeracy effectively (estimates, calculates)	••	••	•		•••	**8**
G Uses and interprets tables and graphs	••				••	**4**
H Selects, processes and organises information	•	••••	•		•••••	**11**
I Uses routine IT skills	•		••••	•		**6**
J Uses IT to seek, process and organise information		•••••	••••	••	•	**12**
K Develops and delivers AV/multimedia presentations	•••		••			**5**
L Applies IT as a planning/management tool		••••	•			**4**
3 Interpersonal and teamwork skills						
A Works productively and cooperatively in groups			•			**1**
G Works sensitively with people of different ages, gender, race, religion or political persuasion	•					**1**
4 Effective participation and work in context						
A Understands contexts and situations beyond school through observation or experience			••			**2**

5	**Initiative and creativity**						
6	**Organisational skills**						
7	**Independent lifelong learning**						
A	Recognises own strengths and weaknesses or preferred learning styles					•	**1**
B	Takes responsibility for and manages own learning					•	**1**
C	Is committed to ongoing learning/learning new skills		•				**1**
8	**Personal development**						
E	Shows loyalty, honesty, integrity, ethics		•				**1**
9	**Deep learning/knowledge**						
B	Connects and integrates bodies of knowledge.	•					**1**
D	Applies discipline concepts/theories		••	•			**3**
I	Develops a global/national/historical/cross-cultural perspective		•				**1**
10	**Employment skills**						
C	Budgets and manages finances		••			•	**3**
E	Understands business/workplace processes		•••••		**• numerous references**		**n**

Table 11: Contents of the Ancient History syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Learning Experiences	Unit level content	Assessment	Totals
1 Thinking						
A Analyses/interprets information, problems and issues		••	••		••	**6**
B Evaluates/applies strategies for solving problems				•	•	**2**
C Uses evidence, argument, logical reasoning		••	•		•••	**6**
D Predicts consequences						
E Synthesises information and concepts for problem solving and decision making		•	••		••	**5**
2 Basic information and communication skills	•	••	••		••	**7**
A Listens and understands	•					**1**
B Speaks clearly and directly	•	•				**2**
C Writes to the needs of the audience	•••				••	**5**
D Reads independently with understanding					•	**1**
F Uses numeracy effectively (estimates, calculates)	••					**2**
G Uses and interprets tables and graphs	•					**1**
H Selects, processes and organises information		•	•		••	**4**
I Uses routine IT skills						**3**
J Uses IT to seek, process and organise information	•		••			**3**
K Develops and delivers AV/multimedia presentations		•				**1**
3 Interpersonal and teamwork skills						
F Empathises/understands others' needs		•		•		**2**
G Works sensitively with people of different ages, gender, race, religion or political persuasion	•					**1**
4 Effective participation and work in context						
A Understands contexts and situations beyond school through observation or experience			•			**1**
5 Initiative and creativity						
A Shows independence in problems/projects		•				**2**

6	**Organisational skills**					
A	Establishes clear project goals and deliverables		•	•	••	•••	**7**
C	Identifies information/resources needed for tasks		•	•	••	•••	**7**
F	Monitors progress and evaluates outcomes		•	•	•••	•	**6**
7	**Independent lifelong learning**					
D	Critically reflects on own learning					
8	**Personal development**					
D	Respects and attends to others' perspectives				••		**2**
E	Shows loyalty, honesty, integrity, ethics		•		•		**2**
9	**Deep learning/ knowledge**					
A	Reflects on, evaluates own and others' views		•••				**3**
B	Connects and integrates bodies of knowledge.	•			•••		**4**
C	Recognises tentativeness and change in knowledge and solutions		••			•	**3**
D	Applies concepts or theoretical frameworks from discipline to research issues and problems		••				**2**
E	Evaluates quality of performance, output, outcomes				•		**1**
F	Engages thoughtfully with values issues		••		••		**4**
I	Develops a global/national/historical/cross-cultural perspective		••		••		**4**
10	**Employment skills/knowledge**					

Table 12: Contents of Biology syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Teaching strategies	Unit level content	Assessment	Totals
1 Thinking						
A Analyses/interprets information, problems and issues		••	•			**3**
C Uses evidence, argument, logical reasoning			•••			**3**
D Predicts consequences		•	•		•	**3**
E Synthesises information and concepts for problems solving and decision making		••••	•••		••	**9**
G Uses mathematics to solve problems	•					**1**
2 Basic information and communication skills	•	••••	•		••	**8**
A Listens and understands			•			**1**
B Speaks clearly and directly			•••			**3**
C Writes to the needs of the audience			•		••	**3**
D Reads independently with understanding	•		••			**3**
F Uses numeracy effectively (estimates, calculates)		•				**1**
G Uses and interprets tables and graphs	•		•			**2**
H Selects, processes and organises information		•••••	••••		••	**11**
J Uses IT to seek, process and organise information			•••••			**5**
K Develops and delivers AV/multimedia presentations			••			**2**
3 Interpersonal and teamwork skills						
A Works productively and cooperatively in groups		•	•			**2**
I Is assertive and persuasive			••			**2**
4 Effective participation and work in context						
A Understands contexts and situations beyond school through observation or experience		•	•••		•	**5**
5 Initiative and creativity						
A Shows independence in problems/projects			•		•	**2**
C Is adaptable, flexible and receptive to new ideas		•				**1**
6 Organisational skills		•			•	**2**

A	Establishes clear project goals and deliverables	•	•		**2**
C	Identifies information/resources needed for tasks	•			**1**
7	**Independent lifelong learning**				
8	**Personal development**				
E	Shows loyalty, honesty, integrity, ethics	••	•		**3**
H	Accepts responsibility for actions, effects on others	•			**1**
9	**Deep learning/ knowledge**				
C	Recognises tentativeness and change in knowledge and solutions	•			**1**
D	Applies concepts or theoretical frameworks from discipline to research issues and problems	••			**2**
E	Evaluates quality of performance, output, outcomes			•	**1**
F	Engages thoughtfully with values issues	•			**1**
I	Develops a global/national/historical/cross-cultural perspective	•			**1**
10	**Employment skills/knowledge**				

Table 13: Contents of the Business Communication and Technologies syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Learning Experiences	Unit level content	Assessment	Totals
1 Thinking						
A Analyses/interprets information, problems and issues		•			•	**2**
B Evaluates/applies strategies for solving problems			•			**1**
C Uses evidence, argument, logical reasoning		•			••	**3**
E Synthesises information and concepts for problem solving and decision making		••			••	**4**
2 Basic information and communication skills				•	••	**3**
A Listens and understands				•		**1**
B Speaks clearly and directly	••	•	•			**4**
C Writes to the needs of the audience	••	••		•	••	**7**
F Uses numeracy effectively (estimates, calculates)	•					**1**
G Uses and interprets tables and graphs	•					**1**
H Selects, processes and organises information		••		•	••	**5**
I Uses routine IT skills			•	•••		**4**
J Uses IT to seek, process and organise information			•	••	••	**5**
K Develops and delivers AV/multimedia presentations		•	•	•		**3**
L Uses IT as a planning/management tool			•	••	•	**4**
3 Interpersonal and teamwork skills						
A Works productively and cooperatively in groups			•	•		**2**
B Participates in group planning, role allocation				•		**1**
C Takes the role of chairperson				•		**1**
G Works sensitively with people of different ages, gender, race, religion or political persuasion	•					**1**
H Negotiates/resolves conflicts				•		**1**
I Is assertive and persuasive				•		**1**
4 Effective participation and work in context						
A Understands contexts and situations beyond school			••			**2**

	through observation or experience				
5	**Initiative and creativity**				
6	**Organisational skills**				
A	Establishes clear project goals and deliverables		•		**1**
B	Prioritises and coordinates tasks		•		**1**
C	Identifies information/resources needed for tasks		•		**1**
D	Manages the process in an appropriate timescale		••		**2**
F	Monitors progress and evaluates outcomes		••		**2**
7	**Independent lifelong learning**				
C	Is committed to ongoing learning/learning new skills	••			**2**
8	**Personal development**				
C	Builds and sustains relationships		•		**1**
D	Respects and attends to others' perspectives	•			**1**
E	Shows loyalty, honesty, integrity, ethics	•••			**3**
9	**Deep learning/ knowledge**				
10	**Employment skills/knowledge**				
C	Budgets and manages finances		•	••	**3**
E	Understands basic business/workplace processes	••••			**4**

Table 14: Contents of the Chemistry syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Learning Experiences	Unit level content	Assessment	Totals
1 Thinking						
A Analyses/interprets information, problems and issues		•••			•••••	**8**
B Evaluates/applies strategies for solving problems		•	•		•	**3**
C Uses evidence, argument, logical reasoning	•	•	•			**3**
D Predicts consequences	•	••			••	**5**
E Synthesises information and concepts for problem solving and decision making		••	•		••	**5**
F Uses values in decision making and judgment		•				**1**
H Tests assumptions		•			•	**2**
2 Basic information and communication skills	•	••			•••	**6**
A Listens and understands	••					**2**
B Speaks clearly and directly	••	•	••			**5**
C Writes to the needs of the audience	••	•				**3**
D Reads independently with understanding	•••					**3**
F Uses numeracy effectively (estimates, calculates)	•••				•	**4**
G Uses and interprets tables and graphs	••	•			•	**4**
H Selects, processes and organises information	•	•••	•		••••	**9**
I Uses routine IT skills	•					**1**
J Uses IT to seek, process and organise information	•	•	••			**4**
K Develops and delivers AV/multimedia presentations	•	•	•			**3**
3 Interpersonal and teamwork skills						
A Works productively and cooperatively in groups		••	••••			**6**
G Works sensitively with people of different ages, gender, race, religion or political persuasion	•					**1**
I Is assertive and persuasive	•••					**3**
4 Effective participation and work in context						

A	Understands contexts and situations beyond school through observation or experience			••		**2**
5	**Initiative and creativity**					
B	Develops creative, innovative solutions		•			**1**
C	Is adaptable, flexible and receptive to new ideas		•			**1**
6	**Organisational skills**				•••	**3**
A	Establishes clear project goals and deliverables		•		•	**2**
C	Identifies information/resources needed for tasks		••		•	**3**
7	**Independent lifelong learning**					
A	Recognises own strengths and weaknesses or preferred learning styles				•	**1**
B	Takes responsibility for and manages own learning				•	**1**
8	**Personal development**					
B	Demonstrates self-management and self-reliance				•	**1**
E	Shows loyalty, honesty, integrity, ethics		•••			**3**
9	**Deep learning/ knowledge**					
B	Connects and integrates bodies of knowledge.	•				**1**
C	Recognises tentativeness and change in knowledge and solutions		••			**2**
D	Applies concepts or theoretical frameworks from discipline to research issues and problems		•••		••	**5**
H	Applies and reflects on knowledge and methods to see phenomena in new ways,		•			**1**
I	Develops a global/national/historical/cross-cultural perspective		••			**2**

Table 15: Contents of the Drama syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Learning Experiences	Unit level content	Assessment	Totals
1 Thinking						
A Analyses/interprets information, problems and issues		••••			•••	**7**
C Uses evidence, argument, logical reasoning			•		•	**2**
E Synthesises information and concepts for problem solving and decision making		•••	•		••	**6**
G Uses mathematics to solve problems			•			**1**
2 Basic information and communication skills		••••	•		•••••	**10**
A Listens and understands			•••••			**5**
B Speaks clearly and directly			••		••	**4**
C Writes to the needs of the audience			•		••••	**5**
D Reads independently with understanding			•••			**3**
F Uses numeracy effectively (estimates, calculates)			•			**1**
G Uses and interprets tables and graphs			•			**1**
H Selects, processes and organises information					•	**1**
3 Interpersonal and teamwork skills						
A Works productively and cooperatively in groups		••	••			**4**
G Works sensitively with people of different ages, gender, race, religion or political persuasion	•					**1**
4 Effective participation and work in context						
A Understands contexts and situations beyond school through observation or experience			•			**1**
5 Initiative and creativity						
B Develops creative, innovative solutions		•		•	•••	**5**
6 Organisational skills						
D Manages the process in an appropriate timescale			•			**1**
F Monitors progress and evaluates outcomes		•				**1**
7 Independent lifelong learning						
C Is committed to ongoing learning/learning new skills			•			**1**

D	Critically reflects on own learning			•	**1**
8	**Personal development**				
B	Demonstrates self-management and self-reliance	•			**1**
D	Respects and attends to others' perspectives	••			**2**
G	Has positive self-esteem	•			**1**
9	**Deep learning/ knowledge**				
A	Reflects on, evaluates own and others' views	•			**1**
G	Articulates own ideas and vision		•		**1**
10	**Employment skills/knowledge**				

Table 16: Contents of the Economics syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Learning Experiences	Unit level content	Assessment	Totals
1 Thinking		•				**1**
A Analyses/interprets information, problems and issues		••			••	**4**
B Evaluates/applies strategies for solving problems		•			•	**2**
C Uses evidence, argument, logical reasoning		•				**1**
E Synthesises information and concepts for problem solving and decision making		•••••		•	•	**7**
F Uses values in decision making and judgment		•		•		**2**
G Uses mathematics to solve problems		•••				**3**
I Develops metacognitive skills		•				**1**
2 Basic information and communication skills		•••••			••	**7**
A Listens and understands		•				**1**
C Writes to the needs of the audience		•••••				**5**
D Reads independently with understanding		••			•	**3**
F Uses numeracy effectively (estimates, calculates)		••				**2**
H Selects, processes and organises information		•••			•••	**6**
J Uses IT to seek, process and organise information		••				**2**
3 Interpersonal and teamwork skills						
4 Effective participation and work in context						
5 Initiative and creativity						
A Shows independence in problems/projects		•				**1**
B Develops creative, innovative solutions		•				**1**
E Takes initiative and makes decisions		•				**1**
6 Organisational skills						
A Establishes clear project goals and deliverables		•		•	•	**3**
C Identifies information/resources needed for tasks		•				**1**
7 Independent lifelong learning						
C Is committed to ongoing learning/learning new skills		•		••		**3**

8	**Personal development**			
D	Respects and attends to others' perspectives	•		**1**
9	**Deep learning/ knowledge**			
A	Reflects on, evaluates own and others' views		•	**1**
B	Connects and integrates bodies of knowledge.		•	**1**
C	Recognises tentativeness and change in knowledge and solutions	•	•	**2**
D	Applies concepts or theoretical frameworks from discipline to research issues and problems	••	•	**3**
F	Engages thoughtfully with values issues	•	•	**2**
I	Develops a global/national/historical/cross-cultural perspective	•		**1**
10	**Employment skills/knowledge**			
E	Understands basic business/workplace processes		•	**1**

Table 17: Contents of the English syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Learning Experiences	Unit level content	Assessment	Totals
1 Thinking						
A Analyses/interprets information, problems and issues		••	••		••	**6**
B Evaluates/applies strategies for solving problems		•			••	**3**
C Uses evidence, argument, logical reasoning		•			•	**2**
E Synthesises information and concepts for problem solving and decision making		•	•		••	**4**
F Uses values in decision making and judgment					•	**1**
2 Basic information and communication skills		••••••			••	**8**
A Listens and understands		•	•			**1**
B Speaks clearly and directly		••••	•		•••••	**10**
C Writes to the needs of the audience		••••	•		••••	**9**
D Reads independently with understanding		•	•			**2**
F Uses numeracy effectively (estimates, calculates)	•					**1**
H Selects, processes and organises information		••			••	**4**
K Develops and delivers AV/multimedia presentations		•	•		•	**3**
3 Interpersonal and teamwork skills						
A Works productively and cooperatively in groups			•			**1**
G Works sensitively with people of different ages, gender, race, religion or political persuasion	•					**1**
4 Effective participation and work in context						
5 Initiative and creativity						
A Shows independence in problems/projects			•			**1**
6 Organisational skills						
A Establishes clear project goals and deliverables				•		**1**

F	Monitors progress and evaluates outcomes		•	••		**3**
7	**Independent lifelong learning**					
B	Takes responsibility for and manages own learning		•			**1**
C	Is committed to ongoing learning/learning new skills	•				**1**
D	Critically reflects on own learning			•		**1**
8	**Personal development**					
B	Demonstrates self-management and self-reliance			•		**1**
C	Builds and sustains relationships	•				**1**
9	**Deep learning/ knowledge**					
A	Reflects on, evaluates own and others' views	•				**1**
D	Applies concepts or theoretical frameworks from discipline to research issues and problems				•	**1**
E	Evaluates quality of performance, output, outcomes			••		**2**
F	Engages thoughtfully with values issues	•			•	**2**
10	**Employment skills/knowledge**					

Table 18: Contents of the Geography syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Learning Experiences	Unit level content	Assessment	Totals
1 Thinking		•				**1**
A Analyses/interprets information, problems and issues	•	•••	••		••••••	**12**
B Evaluates/applies strategies for solving problems		•	••		•••••	**8**
C Uses evidence, argument, logical reasoning					•••••	**5**
D Predicts consequences			••			**2**
E Synthesises information and concepts for problem solving and decision making		•	•		•••••	**7**
F Uses values in decision making and judgment		••				**2**
G Uses mathematics to solve problems	•					**1**
2 Basic information and communication skills		••	•••		•••	**8**
A Listens and understands		••				**2**
B Speaks clearly and directly	•	•				**2**
C Writes to the needs of the audience	•	•	•		•	**4**
D Reads independently with understanding		•				**1**
F Uses numeracy effectively (estimates, calculates)	•••					**3**
G Uses and interprets tables and graphs	••	••	••		•	**7**
H Selects, processes and organises information	•	•••	••		••••	**10**
I Uses routine IT skills	•		•			**2**
J Uses IT to seek, process and organise information	••	•	••			**5**
K Develops and delivers AV/multimedia presentations	•	••				**3**
3 Interpersonal and teamwork skills						
A Works productively and cooperatively in groups			•			**1**
G Works sensitively with people of different ages, gender, race, religion or political persuasion	•					**1**
4 Effective participation and work in context						
A Understands contexts and situations beyond school		•	•••			**4**

	through observation or experience					
C	Participates in problem solving or developing projects in contexts beyond school	•	•			**2**
5	**Initiative and creativity**					
A	Shows independence in problems/projects		•		•	**2**
6	**Organisational skills**		•			**1**
A	Establishes clear project goals and deliverables	•	•	•		**3**
7	**Independent lifelong learning**					
C	Is committed to ongoing learning/learning new skills	•				**1**
8	**Personal development**					
D	Respects and attends to others' perspectives	•				**1**
E	Shows loyalty, honesty, integrity, ethics	•				**1**
9	**Deep learning/ knowledge**					
B	Connects and integrates bodies of knowledge.		•			**1**
C	Recognises tentativeness and change in knowledge and solutions	•				**1**
D	Applies concepts or theoretical frameworks from discipline to research issues and problems	••				**2**
F	Engages thoughtfully with values issues	•••••				**5**
I	Develops a global/national/historical/cross-cultural perspective	••		••		**4**

Table 19: Contents of the Graphics syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Learning Experiences	Unit level content	Assessment	Totals
1 Thinking		•				
A Analyses/interprets information, problems and issues				••	••	**4**
B Evaluates/applies strategies for solving problems				•••	•	**4**
C Uses evidence, argument, logical reasoning	•			•	•	**3**
E Synthesises information and concepts for problem solving and decision making		•••	•••	••••	•••••	**15**
G Uses mathematics to solve problems	•	•				**2**
H Tests assumptions				•		**1**
2 Basic information and communication skills	•	•••	•		•	**6**
B Speaks clearly and directly	•					**1**
C Writes to the needs of the audience	•••	•			•	**5**
D Reads independently with understanding	•		•		•	**3**
F Uses numeracy effectively (estimates, calculates)	•	••		•	••	**6**
G Uses and interprets tables and graphs		•				**1**
H Selects, processes and organises information	••	••		•••	•••	**10**
I Uses routine IT skills			•			**1**
J Uses IT to seek, process and organise information		•	••	•		**4**
K Develops and delivers AV/multimedia presentations		•		•		**2**
L Uses IT as a planning/management tool		•	•	•••		**5**
3 Interpersonal and teamwork skills						
A Works productively and cooperatively in groups		•	••	•	•••	**7**
4 Effective participation and work in context						
A Understands contexts and situations beyond school through observation or experience				•		**1**
5 Initiative and creativity						
A Shows independence in problems/projects		••		•••	•••	**8**
B Develops creative, innovative solutions				••		**2**

E	Takes initiative and makes decisions			•	•	**2**
6	**Organisational skills**					
A	Establishes clear project goals and deliverables		••	•••		**5**
C	Identifies information/resources needed for tasks		•	•••	•	**5**
D	Manages the process in an appropriate timescale		•			**1**
F	Monitors progress and evaluates outcomes		•	•		**2**
7	**Independent lifelong learning**					
B	Takes responsibility for and manages own learning	•				
8	**Personal development**					
B	Demonstrates self-management and self-reliance		•	••		**3**
G	Has positive self-esteem		•			**1**
9	**Deep learning/ knowledge**					
B	Connects and integrates bodies of knowledge.		•	•		**2**
E	Evaluates quality of performance, output, outcomes		••	••	•	**5**
F	Engages thoughtfully with values issues		•			**1**
10	**Employment skills/knowledge**					

Table 20: Contents of the Home Economics syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Learning Experiences	Unit level content	Assessment	Totals
1 Thinking						
A Analyses/interprets information, problems and issues		•	•		•	**3**
B Evaluates/applies strategies for solving problems					•	**1**
C Uses evidence, argument, logical reasoning	•	••	•••		•••	**9**
D Predicts consequences			•			**1**
E Synthesises information and concepts for problem solving and decision making	••	•••	••		•••	**10**
F Uses values in decision making and judgment		••				**2**
2 Basic information and communication skills		•	•		••	**4**
A Listens and understands	•		•			**2**
B Speaks clearly and directly	•••					**3**
C Writes to the needs of the audience	••••••				••	**8**
D Reads independently with understanding	•••					**3**
F Uses numeracy effectively (estimates, calculates)	••					**2**
G Uses and interprets tables and graphs	•					**1**
H Selects, processes and organises information	••	•••	•		••	**8**
J Uses IT to seek, process and organise information	•					**1**
3 Interpersonal and teamwork skills						
A Works productively and cooperatively in groups		••				**2**
G Works sensitively with people of different ages, gender, race, religion or political persuasion	•					**1**
4 Effective participation and work in context						
5 Initiative and creativity						
A Shows independence in problems/projects			•			**1**
6 Organisational skills						
A Establishes clear project goals and deliverables			••		•	**3**
B Prioritises and coordinates tasks			•		••	**3**

C	Identifies information/resources needed for tasks		••	••	**4**
F	Monitors progress and evaluates outcomes	•	••	••••	**7**
7	**Independent lifelong learning**				
8	**Personal development**				
E	Shows loyalty, honesty, integrity, ethics		•		**1**
9	**Deep learning/ knowledge**				
A	Reflects on, evaluates own and others' views	•	•		**2**
E	Evaluates quality of performance, output, outcomes	•	•		**2**
F	Engages thoughtfully with values issues	•	•		**2**
I	Develops a global/national/historical/cross-cultural perspective		•		**1**
10	**Employment skills/knowledge**				

Table 21: Contents of the IPT syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Teaching strategies	Unit level content	Assessment	Totals
1 Thinking						
A Analyses/interprets information, problems and issues		•	••••	•	•••	**9**
B Evaluates/applies strategies for solving problems			•		•	**2**
C Uses evidence, argument, logical reasoning				••••	••	**6**
D Predicts consequences						
E Synthesises information and concepts for problems solving and decision making		•	•••	••••••	•••	**13**
F Uses values in decision making and judgment				••		**2**
G Uses mathematics to solve problems				••••		**4**
2 Basic information and communication skills	••	••	••	•	•••	**10**
A Listens and understands	••			•	•	**4**
B Speaks clearly and directly	•		••	••	•	**6**
C Writes to the needs of the audience	•		•••	••	••	**8**
D Reads independently with understanding	••		•		•	**4**
F Uses numeracy effectively (estimates, calculates)	•		•	••		**4**
G Uses and interprets tables and graphs	••			•••		**5**
H Selects, processes and organises information	••		•••	•	•	**7**
I Uses routine IT skills			•	•		**2**
J Uses IT to seek, process and organise information		•	••••	**•numerous**		**n**
K Develops and delivers AV/multimedia presentations			•			**1**
L Uses IT as a planning/management tool			••	•	•	**4**
3 Interpersonal and teamwork skills						
A Works productively and cooperatively in groups		•	•••			**4**
E Facilitates social relations with individuals/teams		•				**1**
F Empathises/understands others' needs		•				**1**
4 Effective participation and work in context						
5 Initiative and creativity						

A	Shows independence in problems/projects			•	•	**2**
B	Develops creative, innovative solutions	••				**2**
6	**Organisational skills**		••		•	**3**
A	Establishes clear project goals and deliverables			•	••	**3**
C	Identifies information/resources needed for tasks				•	**1**
D	Manages the process in an appropriate timescale				••	**2**
F	Monitors progress and evaluates outcomes	••		••	•••	**7**
7	**Independent lifelong learning**					
A	Recognises own strengths and weaknesses or preferred learning styles				•	**1**
8	**Personal development**					
A	Is self-motivated and evaluates own performance		•			**1**
B	Demonstrates self-management and self-reliance	•				**1**
E	Shows loyalty, honesty, integrity, ethics	•	•	•	•	**4**
H	Accepts responsibility for actions, effects on others	••				**2**
9	**Deep learning/ knowledge**					
A	Reflects on, evaluates own and others' views		•	•		**2**
C	Recognises tentativeness and change in knowledge and solutions				•	**1**
D	Applies concepts or theoretical frameworks from discipline to research issues and problems	••	•	•••••	••	**10**
E	Evaluates quality of performance, output, outcomes			•	•••	**4**
F	Engages thoughtfully with values issues			•		**1**
10	**Employment skills/knowledge**					

Table 22: Contents of the Japanese Syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Teaching strategies	Unit level content	Assessment	Totals
1 Thinking						
A Analyses/interprets information, problems and issues			•			**1**
B Evaluates/applies strategies for solving problems			•			**1**
C Uses evidence, argument, logical reasoning			•		•	**2**
E Synthesises information and concepts for problems solving and decision making		••	••		•	**5**
I Develops metacognitive skills			•			**1**
2 Basic information and communication skills	•	•	•		•	**4**
A Listens and understands		••••	••••••		••	**12**
B Speaks clearly and directly		•••••	••••		••	**11**
C Writes to the needs of the audience		•••••	•		••	**8**
D Reads independently with understanding		••••	••		••	**8**
E Speaks and writes in languages other than English		••••••••	•	•••	•••	**15**
F Uses numeracy effectively (estimates, calculates)	•	•		•••		**5**
H Selects, processes and organises information		•••	••		•	**6**
I Uses routine IT skills		•				**1**
J Uses IT to seek, process and organise information		•••	••••			**7**
K Develops and delivers AV/multimedia presentations		•	•••			**4**
3 Interpersonal and teamwork skills						
A Works productively and cooperatively in groups		•••••	••			**7**
G Works sensitively with people of different ages, gender, race, religion or political persuasion		••				**2**
4 Effective participation and work in context						
A Understands contexts and situations beyond school through observation or experience	•	•				**2**
B Uses appropriate strategies, procedures and networks in contexts beyond school		•				**1**

5	**Initiative and creativity**					
A	Shows independence in problems/projects			•		**1**
B	Develops creative, innovative solutions		•			**1**
6	**Organisational skills**		•	•		**2**
A	Establishes clear project goals and deliverables		•	•		**2**
F	Monitors progress and evaluates outcomes			•		**1**
7	**Independent lifelong learning**					
A	Recognises own strengths and weaknesses or preferred learning styles				•	**1**
B	Takes responsibility for and manages own learning			•		**1**
8	**Personal development**					
A	Is self-motivated and evaluates own performance			•		**1**
9	**Deep learning/ knowledge**					
B	Connects and integrates bodies of knowledge.	•				**1**
D	Applies concepts or theoretical frameworks from discipline to research issues and problems		•	•		**2**
E	Evaluates quality of performance, output, outcomes			•		**1**
G	Articulates own ideas and vision		•	•		**2**
I	Develops a global/national/historical/cross-cultural perspective	•	••••	•		**6**
10	**Employment skills/knowledge**					

Table 23: Contents of the Legal Studies syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Learning Experiences	Unit level content	Assessment	Totals
1 Thinking						
A Analyses/interprets information, problems and issues	•	••	•	•	•	**6**
B Evaluates/applies strategies for solving problems			••			**2**
C Uses evidence, argument, logical reasoning		•••	•		•	**5**
D Predicts consequences						
E Synthesises information and concepts for problem solving and decision making		•••		•	•••••	**9**
H Tests assumptions		••				**2**
2 Basic information and communication skills	••	•••			•••	**8**
A Listens and understands	•	•	••			**4**
B Speaks clearly and directly	••	••	•		•	**6**
C Writes to the needs of the audience	•	••		•	•••	**7**
D Reads independently with understanding	•	•		•		**3**
F Uses numeracy effectively (estimates, calculates)	••					**2**
G Uses and interprets tables and graphs	•	•			•	**3**
H Selects, processes and organises information	•	••••		••	••••	**11**
J Uses IT to seek, process and organise information	••	•	•			**3**
3 Interpersonal and teamwork skills						
A Works productively and cooperatively in groups		•	•			**2**
F Empathises/understands others' needs		•				**1**
G Works sensitively with people of different ages, gender, race, religion or political persuasion	••					**2**
I Is assertive and persuasive	•				•	**2**
4 Effective participation and work in context						
A Understands contexts and situations beyond school through observation or experience	•	•	•••			**5**
5 Initiative and creativity						

A	Shows independence in problems/projects		•			**1**
6	**Organisational skills**					
A	Establishes clear project goals and deliverables			•		**1**
B	Prioritises and coordinates tasks		•			**1**
C	Identifies information/resources needed for tasks		•	•		**2**
F	Monitors progress and evaluates outcomes	•				**1**
7	**Independent lifelong learning**					
8	**Personal development**					
E	Shows loyalty, honesty, integrity, ethics		•			**1**
9	**Deep learning/ knowledge**					
A	Reflects on, evaluates own and others' views		•	•	•	**3**
B	Connects and integrates bodies of knowledge.	•			•	**2**
C	Recognises tentativeness and change in knowledge and solutions				••	**2**
D	Applies concepts or theoretical frameworks from discipline to research issues and problems			•	•	•••• **6**
F	Engages thoughtfully with values issues		•••	••	•	•• **8**
H	Applies and reflects on knowledge and methods to see phenomena in new ways,					• **1**
I	Develops a global/national/historical/cross-cultural perspective		•	•	••	**4**
10	**Employment skills/knowledge**					

Table 24: Contents of the Mathematics A syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Learning Experiences	Unit level content	Assessment	Totals
1 Thinking						
A Analyses/interprets information, problems and issues		•		•	•	**3**
B Evaluates/applies strategies for solving problems		•••			•	**4**
C Uses evidence, argument, logical reasoning		•				**1**
E Synthesises information and concepts for problem solving and decision making		•••		•		**4**
G Uses mathematics to solve problems		•••				**3**
2 Basic information and communication skills	•	•••	•			**5**
C Writes to the needs of the audience	•	••				**3**
D Reads independently with understanding		••				**2**
F Uses numeracy effectively (estimates, calculates)		••		••••••	••	**10**
G Uses and interprets tables and graphs		••		••••••		**8**
H Selects, processes and organises information	•	•		•••		**5**
I Uses routine IT skills		•		•		**2**
J Uses IT to seek, process and organise information		••••		••	•	**7**
3 Interpersonal and teamwork skills						
4 Effective participation and work in context						
5 Initiative and creativity						
B Develops creative, innovative solutions		•				**1**
D Deals with uncertainty		•				**1**
6 Organisational skills						
A Establishes clear project goals and deliverables				•		**1**
B Prioritises and coordinates tasks		•				**1**
C Identifies information/resources needed for tasks		•				**1**
F Monitors progress and evaluates outcomes		•				**1**
7 Independent lifelong learning						
C Is committed to ongoing learning/learning new skills		•				**1**

8	**Personal development**			
9	**Deep learning/ knowledge**			
C	Recognises tentativeness and change in knowledge and solutions	••		**2**
D	Applies concepts or theoretical frameworks from discipline to research issues and problems	••••		**4**
10	**Employment skills/knowledge**			
C	Budgets and manages finances	•	••••	**5**

Table 25: Contents of the Mathematics B syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Learning Experiences	Unit level content	Assessment	Totals
1 Thinking						
A Analyses/interprets information, problems and issues		••		••	••	**6**
B Evaluates/applies strategies for solving problems		••••			•	**5**
C Uses evidence, argument, logical reasoning					•	**1**
E Synthesises information and concepts for problem solving and decision making		••••		•		**5**
G Uses mathematics to solve problems		•		**numerous**		**n**
H Tests assumptions		••				**2**
I Develops metacognitive skills		•				**1**
2 Basic information and communication skills	•	•••		••	•	**7**
C Writes to the needs of the audience	•	•••••				**6**
D Reads independently with understanding		••				**2**
F Uses numeracy effectively (estimates, calculates)		••		**numerous**	••	**n**
G Uses and interprets tables and graphs				••••••••••	•	**11**
H Selects, processes and organises information	•	•		•	•	**4**
J Uses IT to seek, process and organise information		•••••		•	•	**7**
3 Interpersonal and teamwork skills						
G Works sensitively with people of different ages, gender, race, religion or political persuasion	•					**1**
4 Effective participation and work in context						
5 Initiative and creativity						
B Develops creative, innovative solutions		•				**1**
6 Organisational skills						
B Prioritises and coordinates tasks		•				**1**
F Monitors progress and evaluates outcomes		•				**1**
7 Independent lifelong learning						
C Is committed to ongoing learning/learning new skills		•				**1**

8	**Personal development**		
9	**Deep learning/ knowledge**		
C	Recognises tentativeness and change in knowledge and solutions	••	**2**
D	Applies concepts or theoretical frameworks from discipline to research issues and problems	••	**2**
10	**Employment skills/knowledge**		

Table 26: Contents of the Mathematics C syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Learning Experiences	Unit level content	Assessment	Totals
1 Thinking					•	**1**
A Analyses/interprets information, problems and issues		••		•	•	**4**
B Evaluates/applies strategies for solving problems		••••			•	**5**
C Uses evidence, argument, logical reasoning					•	**1**
D Predicts consequences						
E Synthesises information and concepts for problem solving and decision making		••••				**4**
G Uses mathematics to solve problems		•		**numerous**		**n**
H Tests assumptions		••				**2**
I Develops metacognitive skills		•				**1**
2 Basic information and communication skills	•	•••		•	•	**6**
C Writes to the needs of the audience	•	••••••				**7**
D Reads independently with understanding		••				**2**
F Uses numeracy effectively (estimates, calculates)		••		•••••••••	••	**13**
G Uses and interprets tables and graphs		•		•	•	**3**
H Selects, processes and organises information	•	•		•	•	**4**
J Uses IT to seek, process and organise information		••••			•	**5**
3 Interpersonal and teamwork skills						
4 Effective participation and work in context						
5 Initiative and creativity						
B Develops creative, innovative solutions		•				**1**
6 Organisational skills						
B Prioritises and coordinates tasks		•				**1**
F Monitors progress and evaluates outcomes		•				**1**
7 Independent lifelong learning						
8 Personal development						
9 Deep learning/ knowledge						

C	Recognises tentativeness and change in knowledge and solutions	••		**2**
D	Applies concepts or theoretical frameworks from discipline to research issues and problems	••	•	**3**
10	**Employment skills/knowledge**			

Table 27: Contents of the Modern History syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Learning Experiences	Unit level content	Assessment	Totals
1 Thinking						
A Analyses/interprets information, problems and issues		••	••		••	**6**
B Evaluates/applies strategies for solving problems				•	•	**2**
C Uses evidence, argument, logical reasoning		••	•		•••	**6**
D Predicts consequences						
E Synthesises information and concepts for problem solving and decision making		•	••		••	**5**
2 Basic information and communication skills	•	••	••		••	**7**
A Listens and understands	•					**1**
B Speaks clearly and directly	•	•				**2**
C Writes to the needs of the audience	•••				••	**5**
D Reads independently with understanding					•	**1**
F Uses numeracy effectively (estimates, calculates)	••					**2**
G Uses and interprets tables and graphs	•					**1**
H Selects, processes and organises information		•	•		••	**4**
I Uses routine IT skills						**3**
J Uses IT to seek, process and organise information	•		••			**3**
K Develops and delivers AV/multimedia presentations		•				**1**
3 Interpersonal and teamwork skills						
F Empathises/understands others' needs		•		•		**2**
G Works sensitively with people of different ages, gender, race, religion or political persuasion	•					**1**
4 Effective participation and work in context						
A Understands contexts and situations beyond school through observation or experience			•			**1**
5 Initiative and creativity						

A	Shows independence in problems/projects		•			**2**
6	**Organisational skills**					
A	Establishes clear project goals and deliverables		•	•	•••	•••	**8**
C	Identifies information/resources needed for tasks		•	•	•••	•••	**8**
F	Monitors progress and evaluates outcomes		•	•	•••	•	**5**
7	**Independent lifelong learning**					
D	Critically reflects on own learning				•••••		**5**
8	**Personal development**					
D	Respects and attends to others' perspectives		•				**1**
E	Shows loyalty, honesty, integrity, ethics		•		•		**2**
9	**Deep learning/ knowledge**					
A	Reflects on, evaluates own and others' views		•••				**3**
B	Connects and integrates bodies of knowledge.	•			••••		**5**
C	Recognises tentativeness and change in knowledge and solutions		••			•	**3**
D	Applies concepts or theoretical frameworks from discipline to research issues and problems		••				**2**
E	Evaluates quality of performance, output, outcomes				•		**1**
F	Engages thoughtfully with values issues		••		••••		**6**
I	Develops a global/national/historical/cross-cultural perspective		•••		•••		**6**
10	**Employment skills/knowledge**					

Table 28: Contents of Multi-strand Science syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Teaching strategies	Unit level content	Assessment	Totals
1 Thinking						
A Analyses/interprets information, problems and issues		••	•			**3**
B Evaluates/applies strategies for solving problems		•		•		**2**
C Uses evidence, argument, logical reasoning		•••	••			**5**
D Predicts consequences		••	•	•••		**6**
E Synthesises information and concepts for problems solving and decision making		••••	••	••••••	•	**13**
F Uses values in decision making and judgment				•		**1**
H Tests assumptions		•				**1**
2 Basic information and communication skills		••	••		•	**5**
B Speaks clearly and directly		••	•••			**5**
C Writes to the needs of the audience		•	•			**2**
D Reads independently with understanding		•	••			**3**
F Uses numeracy effectively (estimates, calculates)		••••				**4**
G Uses and interprets tables and graphs		•	•			**2**
H Selects, processes and organises information		•••••	••	•	•	**9**
J Uses IT to seek, process and organise information		•	••••			**5**
K Develops and delivers AV/multimedia presentations		•	••			**3**
3 Interpersonal and teamwork skills						
A Works productively and cooperatively in groups		•	•			**2**
I Is assertive and persuasive			••			**2**
4 Effective participation and work in context						
A Understands contexts and situations beyond school through observation or experience			••	••	•	**5**
C Participates in problem solving or developing projects in contexts beyond school				•		**1**
5 Initiative and creativity						

A	Shows independence in problems/projects	•	•			**2**
C	Is adaptable, flexible and receptive to new ideas	•				**1**
6	**Organisational skills**					
A	Establishes clear project goals and deliverables				•	**1**
7	**Independent lifelong learning**					
8	**Personal development**					
E	Shows loyalty, honesty, integrity, ethics	••	•	••		**5**
9	**Deep learning/ knowledge**					
A	Reflects on, evaluates own and others' views			•		**1**
B	Connects and integrates bodies of knowledge.			•		**1**
C	Recognises tentativeness and change in knowledge and solutions	•				**1**
D	Applies concepts or theoretical frameworks from discipline to research issues and problems	•••	•		•	**5**
F	Engages thoughtfully with values issues	•				**1**
G	Articulates own ideas and vision	•				**1**
I	Develops a global/national/historical/cross-cultural perspective	••		•••••••		**9**
10	**Employment skills/knowledge**					

Table 29: Contents of Physical Education syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Teaching strategies	Unit level content	Assessment	Totals
1 Thinking						
A Analyses/interprets information, problems and issues		••	•			**3**
D Predicts consequences					•	**1**
E Synthesises information and concepts for problems solving and decision making		••			••	**4**
G Uses mathematics to solve problems	••					**2**
2 Basic information and communication skills	••	•••			•••	**8**
A Listens and understands	•••					**3**
B Speaks clearly and directly	•••	•	•	•	••	**8**
C Writes to the needs of the audience	••••	•	•	•	•••	**10**
D Reads independently with understanding	•••	•				**4**
F Uses numeracy effectively (estimates, calculates)	••					**2**
G Uses and interprets tables and graphs	•••					**3**
H Selects, processes and organises information	•	••••			•••	**8**
I Uses routine IT skills	•					**1**
J Uses IT to seek, process and organise information		•				**1**
K Develops and delivers AV/multimedia presentations	•					**1**
3 Interpersonal and teamwork skills		•				**1**
A Works productively and cooperatively in groups		••••			••••	**8**
4 Effective participation and work in context						
5 Initiative and creativity						
A Shows independence in problems/projects			•			**1**
6 Organisational skills						
7 Independent lifelong learning					•	**1**
B Takes responsibility for and manages own learning			•			**1**
8 Personal development						
A Is self-motivated and evaluates own performance					•••	**3**
E Shows loyalty, honesty, integrity, ethics		•				**1**

G	Has positive self-esteem		•		**1**
9	**Deep learning/ knowledge**				
B	Connects and integrates bodies of knowledge.	•			**1**
D	Applies concepts or theoretical frameworks from discipline to research issues and problems		•		**1**
E	Evaluates quality of performance, output, outcomes		•••	•••••	**8**
F	Engages thoughtfully with values issues		••		**2**
I	Develops a global/national/historical/cross-cultural perspective		•		**1**
10	**Employment skills/knowledge**				

Table 30: Contents of Physics syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Teaching strategies	Unit level content	Assessment	Totals
1 Thinking						
A Analyses/interprets information, problems and issues		•••	•			**4**
B Evaluates/applies strategies for solving problems		•				**1**
C Uses evidence, argument, logical reasoning		•••	••			**5**
D Predicts consequences		•	•			**2**
E Synthesises information and concepts for problem solving and decision making		••••	•			**5**
G Uses mathematics to solve problems		••		• **numerous**		**n**
H Tests assumptions		•				**1**
2 Basic information and communication skills		•	••		•	**4**
A Listens and understands			•			**1**
B Speaks clearly and directly		••	•••			**5**
C Writes to the needs of the audience		•	•			**2**
D Reads independently with understanding		•	••			**3**
F Uses numeracy effectively (estimates, calculates)		••••		• **numerous**		**n**
G Uses and interprets tables and graphs		•	•			**2**
H Selects, processes and organises information		•••	•••		•	**7**
J Uses IT to seek, process and organise information		•	••••			**5**
K Develops and delivers AV/multimedia presentations		•	•			**2**
3 Interpersonal and teamwork skills						
A Works productively and cooperatively in groups			•			**1**
I Is assertive and persuasive			••			**2**
4 Effective participation and work in context						
A Understands contexts and situations beyond school through observation or experience			•			**1**

5	**Initiative and creativity**					
A	Shows independence in problems/projects		•			**1**
C	Is adaptable, flexible and receptive to new ideas	•				**1**
6	**Organisational skills**					
A	Establishes clear project goals and deliverables	•			•	**2**
C	Identifies information/resources needed for tasks	•				**1**
7	**Independent lifelong learning**					
8	**Personal development**					
E	Shows loyalty, honesty, integrity, ethics	••				**2**
9	**Deep learning/ knowledge**					
C	Recognises tentativeness and change in knowledge and solutions	•••				**3**
D	Applies concepts or theoretical frameworks from discipline to research issues and problems	•••		• **numerous**	•	**n**
F	Engages thoughtfully with values issues	••				**2**
G	Articulates own ideas and vision	•				**1**
H	Applies and reflects on knowledge and methods to see phenomena in new ways,	•				**1**
I	Develops a global/national/historical/cross-cultural perspective	••				**2**
10	**Employment skills/knowledge**					

Table 31: Contents of the Study of Religion syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Learning Experiences	Unit level content	Assessment	Totals
1 Thinking						
A Analyses/interprets information, problems and issues		•••			••••	**7**
B Evaluates/applies strategies for solving problems						
C Uses evidence, argument, logical reasoning		••••	•		••••	**9**
D Predicts consequences					••	**2**
E Synthesises information and concepts for problem solving and decision making		••			••••	**6**
H Tests assumptions		•			•	**2**
2 Basic information and communication skills		••			••	**4**
A Listens and understands	•		•		•	**3**
B Speaks clearly and directly	•		•			**2**
C Writes to the needs of the audience	•••				••••	**7**
D Reads independently with understanding	•	•			••	**4**
F Uses numeracy effectively (estimates, calculates)						
G Uses and interprets tables and graphs	•	•			•	**3**
H Selects, processes and organises information		•••			••	**5**
J Uses IT to seek, process and organise information			••			**2**
K Develops and delivers AV/multimedia presentations		•				**1**
3 Interpersonal and teamwork skills						
F Empathises/understands others' needs		•				**1**
4 Effective participation and work in context						
A Understands contexts and situations beyond school through observation or experience			••			**2**
5 Initiative and creativity						
B Develops creative, innovative solutions			••			**2**
C Is adaptable, flexible and receptive to new ideas		•				**1**
6 Organisational skills						

A	Establishes clear project goals and deliverables		•	**1**
E	Copes with unexpected problems	•		**1**
7	**Independent lifelong learning**			
C	Is committed to ongoing learning/learning new skills	•		**1**
8	**Personal development**			
D	Respects and attends to others' perspectives	••		**2**
9	**Deep learning/ knowledge**			
A	Reflects on, evaluates own and others' views	••		**2**
10	**Employment skills/knowledge**			

Table 32: Contents of Visual Arts syllabus

Content category	Common syllabus elements	Subject level, aims, objectives, content	Teaching strategies	Unit level content	Assessment	Totals
1 Thinking						
A Analyses/interprets information, problems and issues		••	••••		••	**8**
B Evaluates/applies strategies for solving problems		••				**2**
C Uses evidence, argument, logical reasoning			•			**1**
E Synthesises information and concepts for problem solving and decision making		•••	•		•••••	**9**
F Uses values in decision making and judgment		•	••			**3**
G Uses mathematics to solve problems	•					**1**
2 Basic information and communication skills		••	•••••			**7**
A Listens and understands		•	••			**3**
B Speaks clearly and directly		•	••			**3**
C Writes to the needs of the audience					•	**1**
D Reads independently with understanding			•			**1**
F Uses numeracy effectively (estimates, calculates)	••					**2**
H Selects, processes and organises information		••	••••••••		•	**11**
J Uses IT to seek, process and organise information	•		•			**2**
K Develops and delivers AV/multimedia presentations			•			**1**
3 Interpersonal and teamwork skills						
A Works productively and cooperatively in groups		•				**1**
E Facilitates social relations with individuals/teams		•				**1**
I Is assertive and persuasive			•			**1**
4 Effective participation and work in context						
A Understands contexts and situations beyond school through observation or experience			•			**1**
5 Initiative and creativity						
A Shows independence in problems/projects		•••			•	**4**
B Develops creative, innovative solutions		••			•	**3**

6	**Organisational skills**	••			**2**
A	Establishes clear project goals and deliverables		•		**1**
C	Identifies information/resources needed for tasks	•			**1**
7	**Independent lifelong learning**				
A	Recognises own strengths and weaknesses or preferred learning styles			•	**1**
C	Is committed to ongoing learning/learning new skills	•			**1**
8	**Personal development**				
G	Has positive self-esteem	••			**2**
9	**Deep learning/ knowledge**				
A	Reflects on, evaluates own and others' views		•		**1**
B	Connects and integrates bodies of knowledge.		•		**1**
D	Applies concepts or theoretical frameworks from discipline to research issues and problems			••	**2**
E	Evaluates quality of performance, output, outcomes		••		**2**
F	Engages thoughtfully with values issues		•••		**3**
G	Articulates own ideas and vision	••	••••	•	**7**
H	Applies and reflects on knowledge and methods to see phenomena in new ways,				
I	Develops a global/national/historical/cross-cultural perspective	•••••	•••••••		**12**
10	**Employment skills/knowledge**				

Appendix 3

Table 33: Contents of all Authority Subject syllabuses

Content categories	Accountg	An. History	Biology	Bus Com Tech	Chemistry	Drama	Economics	English	Geography	Graphics	Home Econ.	Info. Proc. Tech	Japanese	Lealg Studies	Maths A	Maths B	Maths C	Modern History	Multistrand Science	Physical Education	Physics	St of Religion	Visual Arts	Totals
Thinking	1						1		1								1							**4**
A Analyses, interprets	2	6	3	2	8	7	4	6	12	4	3	9	1	6	3	6	4	6	3	3	4	7	8	**117**
B Evaluates strategies	1	2		1	3		2	3	8	4	1	2	1	2	4	5	5	2	2		1		2	**51**
C Uses evidence	1	6	3	3	3	2	1	2	5	3	9	6	2	5	1	1	1	6	5		5	9	1	**80**
D Predicts consequence	0		3		5				2		1								6	1	2	2		**22**
E Synthesises …	7	5	9	4	5	6	7	4	7	15	10	13	5	9	4	5	4	5	13	4	5	6	9	**161**
F Uses values …	0				1		2	1	2		2	2							1				3	**14**
G Uses mathematics …	2		1			1	3		1	2		4			3	n	n			2	n		1	**20**
H Tests assumptions	0				2					1				2		2	2		1		1	2		**13**
I Develops metacognitive	0												1			1	1							**3**
Totals	**14**	**19**	**19**	**10**	**27**	**16**	**20**	**16**	**38**	**29**	**26**	**36**	**10**	**24**	**15**	**20**	**18**	**19**	**31**	**10**	**18**	**26**	**24**	**485**
Basic IC skills	4	7	8	3	6	10	7	8	8	6	4	10	4	8	5	7	6	7	5	8	4	4	7	**146**
A Listens and understands	1	1	1	1	2	5	1	1	2		2	4	12	4				1		3	1	3	3	**48**
B Speaks clearly and directly	7	2	3	4	5	4		10	2	1	3	6	11	6				2	5	8	5	2	3	**89**
C Writes to needs of audience	5	5	3	7	3	5	5	9	4	5	8	8	8	7	3	6	7	5	2	10	2	7	1	**125**
D Reads independently		1	3		3	3	3	2	1	3	3	4	8	3	2	2	2	1	3	4	3	4	1	**59**
E Speaks and writes in LOTE													15											**15**
F Uses numeracy effectively	8	2	1	1	4	1	2	1	3	6	2	4	5	2	10	n	13	2	4	2	n		2	**75**
G Uses tables and graphs	4	1	2	1	4	1			7	1	1	5		3	8	11	3	1	2	3	2	3		**63**
H Selects, processes, info.	11	4	11	5	9	1	6	4	10	10	8	7	6	11	5	4	4	4	9	8	7	5	11	**160**

I	Uses routine IT skills	6	3		4	1				2	1		2	1		2			3		1				**26**
J	Uses IT to process info.	12	3	5	5	4		2		5	4	1	n	7	3	7	7	5	3	5	1	5	2	2	**88**
K	AV/multimedia pres'ns	5	1	2	3	3			3	3	2		1	4					1	3	1	2	1	1	**36**
L	Uses IT as tool	4			4						5		4												**17**
	Totals	**67**	**30**	**39**	**38**	**44**	**30**	**26**	**38**	**47**	**44**	**32**	**55**	**81**	**47**	**42**	**37**	**40**	**30**	**38**	**49**	**31**	**31**	**31**	**947**
Interpersonal skills																					1				**1**
A	Works in groups	1		2	2	6	4		1	1	7	2	4	7	2					2	8	1		1	**51**
B	Group planning				1																				**1**
C	Takes role of chairperson				1																				**1**
D	Coaches, mentors																								**0**
E	Facilitates social relations												1											1	**2**
F	Empathises		2										1		1				2				1		**7**
G	Sensitive to difference	1	1		1	1	1		1	1		1		2	2		1		1						**14**
H	Resolves conflicts				1																				**1**
I	Is persuasive			2	1	3									2					2		2		1	**13**
	Totals	**2**	**3**	**4**	**7**	**10**	**5**	**0**	**2**	**2**	**7**	**3**	**6**	**9**	**7**	**0**	**1**	**0**	**3**	**4**	**9**	**3**	**1**	**3**	**91**
Participation																									**0**
A	Observes contexts	2	1	5	2	2	1			4	1			2	5				1	5		1	2	1	**35**
B	Uses procedures													1											**1**
C	Participates prob. solving,									2										1					**3**
	Totals	**2**	**1**	**5**	**2**	**2**	**1**	**0**	**0**	**6**	**1**	**0**	**0**	**3**	**5**	**0**	**0**	**0**	**1**	**6**	**0**	**1**	**2**	**1**	**39**
Initiative and creativity																									**0**
A	Shows independence		2	2				1	1	2	8	1	2	1	1				2	2	1	1		4	**31**
B	Creative, innovative					1	5	1			2		2	1		1	1	1					2	3	**20**
C	Is adaptable, flexible			1		1														1		1	1		**5**
D	Deals with uncertainty															1									**1**
E	Takes initiative							1			2														**3**
	Totals	**0**	**2**	**3**	**0**	**2**	**5**	**3**	**1**	**2**	**12**	**1**	**4**	**2**	**1**	**2**	**1**	**1**	**2**	**3**	**1**	**2**	**3**	**7**	**60**

Organisational skills			2		3				1			3	2											2	**13**
A Establishes project goals		7	2	1	2		3	1	3	5	3	3	2	1	1			8	1		2	1	1	**47**
B Prioritises and coordinates				1							3			1	1	1	1							**8**
C Identifies info./resources		7	1	1	3		1			5	4	1		2	1			8			1		1	**36**
D Manages timescale				2		1				1		2												**6**
E Copes with unexpected																						1		**1**
F Monitors, evaluates		6		2		1		3		2	7	7	1	1	1	1	1	5						**38**
Totals	**0**	**20**	**5**	**7**	**8**	**2**	**4**	**4**	**4**	**13**	**17**	**16**	**5**	**5**	**4**	**2**	**2**	**21**	**1**	**0**	**3**	**2**	**4**	**149**
Independent learning																				1				**1**
A Recognises strengths	1	5			1							1	1					5					1	**15**
B Responsibility for learning	1				1			1					1							1				**5**
C Committed to learning	1			2		1	3	1	1						1	1						1	1	**13**
D Reflects on learning						1		1																**2**
Totals	**3**	**5**	**0**	**2**	**2**	**2**	**3**	**3**	**1**	**0**	**0**	**1**	**2**	**0**	**1**	**1**	**0**	**5**	**0**	**2**	**0**	**1**	**2**	**36**
Personal development																								**0**
A Self-motivated												1	1							3				**5**
B Self-management					1	1		1		3		1												**7**
C Builds relationships				1				1																**2**
D Respects perspectives		2		1		2	1		1									1				2		**10**
E Develops integrity, ethics	1	2	3	3	3				1		1	4		1				2	5	1	2			**29**
F Is reliable																								**0**
G Has positive self-esteem						1				1										1			2	**5**
H Responsible for actions			1									2												**3**
I Handles emotions																								**0**
Totals	**1**	**4**	**4**	**5**	**4**	**4**	**1**	**2**	**2**	**4**	**1**	**8**	**1**	**1**	**0**	**0**	**0**	**3**	**5**	**5**	**2**	**2**	**2**	**61**
Deep learning																								**0**
A Reflects on views		3				1	1	1			2	2		3				3	1			2	1	**20**

B	Connects knowledge.	1	4			1		1		1	2			1	2				5	1	1			1	**21**
C	Recognises change		3	1		2		2		1			1		2	2	2	2	3	1		3			**25**
D	Applies discipline	3	2	2		5		3	1	2			10	2	6	4	2	3	2	5	1	n		2	**55**
E	Evaluates outcomes		1	1					2		5	2	4	1					1		8			2	**27**
F	Engages with values		4	1				2	2	5	1	2	1		8				6	1	2	2			**37**
G	Articulates own ideas,						1							2						1		1		7	**12**
H	Sees in new ways,					1									1							1			**3**
I	Develops perspectives	1	4	1		2		1		4		1		6	4				6	9	1	2		12	**54**
	Totals	**5**	**21**	**6**	**0**	**11**	**2**	**10**	**6**	**13**	**8**	**7**	**18**	**12**	**26**	**6**	**4**	**5**	**26**	**19**	**13**	**9**	**2**	**25**	**254**
Employment skills																									**0**
A	Uses clerical skills																								**0**
B	Understands customers																								**0**
C	Budgets and finances	3			3											5									**11**
D	Customer concerns																								**0**
E	Understands business	n			4			1																	**5**
	Totals	**3**	**0**	**0**	**7**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**

Table 34: Contents of all Study Area Specifications

Content category	Creative Arts	English Communication	Hospitality Studies	Info and Com Technology	Physical Recreation	Prevocational Mathematics	Religion and Ethics	Tourism	Totals
Thinking									
A Analyses/interprets information, problems and issues	2	3	7	1		8	11	3	**35**
B Evaluates/applies strategies for solving problems		2		3	8	1		3	**17**
C Uses evidence, argument, logical reasoning		5	7		1	1	4	2	**20**
D Predicts consequences		1	1		1	3			**6**
E Synthesises for problem solving and decision making	4	3	12	5	5	9	6	7	**51**
F Uses values in decision making and judgment							3		**3**
G Uses mathematics to solve problems	1		1			6			**8**
H Tests assumptions									**0**
I Develops metacognitive skills							1		**1**
Totals	**7**	**14**	**28**	**9**	**15**	**28**	**25**	**15**	**141**
Basic information and communication skills	9	12	4	7	9		9	2	**52**
A Listens and understands		3	1	1			2	2	**9**
B Speaks clearly and directly	1	5	4	2	3	1	3	8	**27**
C Writes to the needs of the audience	1	10	4	2	3	2	1	5	**28**
D Reads independently with understanding		4	2	2	1	2	2	2	**15**
E Speaks and writes in languages other than English									**0**
F Uses numeracy effectively (estimates, calculates)	1	1	3	2	1	20	1	5	**34**
G Uses and interprets tables and graphs	1	2	2	3	4	8	3	2	**25**
H Selects, processes and organises information	1	7	3	2	4	6	6	11	**40**
I Uses routine IT skills		2	1			1			**4**
J Uses IT to seek, process and organise information			3	5	3	2	2	5	**20**
K Develops and delivers AV/multimedia presentations	1	4	2	1		1	1	5	**15**
L Uses IT as a planning/management tool				6					**6**
Totals	**15**	**50**	**29**	**33**	**28**	**43**	**30**	**47**	**275**

Interpersonal and teamwork skills						1				**1**
A Works productively and cooperatively in groups		4	1	5	3	24	3	8	6	**54**
B Participates in group planning, role allocation		1		1						**2**
C Takes the role of chairperson										**0**
D Coaches, mentors and gives feedback						1				**1**
E Facilitates social relations with individuals/teams										**0**
F Empathises/understands others' needs								1	1	**2**
G Works sensitively with people of different groups				1	1	1		1	1	**5**
H Negotiates/resolves conflicts									4	**4**
I Is assertive and persuasive										**0**
	Totals	**5**	**1**	**7**	**4**	**27**	**3**	**10**	**12**	**69**
Effective participation and work in context										**0**
A Experiences contexts and situations beyond school		1	3	4		2			3	**13**
B Uses procedures in contexts beyond school				1					1	**2**
C Problem solving, projects in contexts beyond school										**0**
	Totals	**5**	**1**	**7**	**4**	**27**	**3**	**10**	**12**	**69**
Initiative and creativity										**0**
A Shows independence in problems/projects		1		1	1	2				**5**
B Develops creative, innovative solutions		5			5			1		**11**
C Is adaptable, flexible and receptive to new ideas				1					1	**2**
D Deals with uncertainty		1								**1**
E Takes initiative and makes decisions			1	1		2				**4**
	Totals	**7**	**1**	**3**	**6**	**4**	**0**	**1**	**1**	**23**
Organisational skills		2	3	4	2	1		3		**15**
A Establishes clear project goals and deliverables		1		2	1	2			2	**8**
B Prioritises and coordinates tasks		2		2	1	1		2	2	**10**
C Identifies information/resources needed for tasks		1		1	3	1				**6**
D Manages the process in an appropriate timescale		1			3	1		2		**7**
E Copes with unexpected problems										**0**
F Monitors progress and evaluates outcomes			1	5	3	4			2	**15**
	Totals	**7**	**4**	**14**	**13**	**10**	**0**	**7**	**6**	**61**

Independent lifelong learning										**0**
A Recognises strengths, weaknesses, learning styles										**0**
B Takes responsibility for and manages own learning					1	1		1		**3**
C Is committed to ongoing learning/learning new skills			2	2	1			1		**6**
D Critically reflects on own learning		6			1	1				**8**
	Totals	**6**	**2**	**2**	**3**	**2**	**0**	**2**	**0**	**17**
Personal development						4				**4**
A Is self-motivated and evaluates own performance					1					**1**
B Demonstrates self-management and self-reliance					1					**1**
C Builds and sustains relationships										**0**
D Respects and attends to others' perspectives				1				2	2	**5**
E Shows loyalty, honesty, integrity, ethics		2		2	8	2		7	4	**25**
F Is reliable										**0**
G Has positive self-esteem		2	1	1		1			1	**6**
H Accepts responsibility for actions, effects on others		1	1	1	2	1		1	1	**8**
I Handles emotions										**0**
	Totals	**5**	**2**	**5**	**12**	**8**	**0**	**10**	**8**	**50**
Deep learning/ knowledge										**0**
A Reflects on, evaluates own and others' views			2				1	2		**5**
B Connects and integrates bodies of knowledge.				2	1	1		2	1	**7**
C Recognises tentativeness and change										**0**
D Applies concepts, theories from discipline										**0**
E Evaluates quality of performance, output, outcomes		1		1	4	1				**7**
F Engages thoughtfully with values issues			2			1		2	1	**6**
G Articulates own ideas and vision								1		**1**
H Reflects on knowledge to see in new ways,										**0**
I Develops global/historical/cross-cultural perspective			1					1	1	**3**
	Totals	**1**	**5**	**3**	**5**	**3**	**1**	**8**	**3**	**29**

Employment skills/knowledge										**0**
A Uses basic clerical skills									2	**2**
B Understands the needs of customers										**0**
C Budgets and manages finances							2		3	**5**
D Resolves customer concerns			1							**1**
E Understands basic business/workplace processes									1	**1**
Totals	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**6**	**9**	

Table 35: Contents of Key Learning Area Syllabus Level 6 Outcomes

Content category	SOSE	Maths	Arts	English	Science	HPE	LOTE	Technol	Totals
1 Thinking	11	21	6	16	7	6	2	1	71
2 Basic information, communic'n skills	3	8	13	40	1	1	12	7	85
3 Interpersonal and teamwork skills	4		4	2	1	5		1	17
4 Participation, work in context	1								1
5 Initiative and creativity	1		5	1			1		8
6 Organisational skills		5			1	3		9	18
7 Independent lifelong learning									
8 Personal development	1				2	5			8
9 Deep learning/ knowledge	23	4	20	10	16	7	6	8	94
10 Employment skills/knowledge	2	2	3		1			1	9
Totals	47	40	51	69	29	27	21	27	311