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Signalling Abilities and Achievement:
Measuring and Reporting on Skill and Competency Development

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1. Introduction

Ensuring a nation's capacity to compete in today's knowledge based economy (KBE) has placed increased attention on each nation's higher education systems. In order to maintain or develop a highly skilled and qualified workforce, governments must ensure that students have access to higher education. Those responsible in postsecondary education institutions must ensure that the curricula offered in varied programs of study provide students with opportunities to strengthen and further develop the knowledge, skills, and competencies essential for success in current and future labour markets. Considering the globalization of labour markets, Governments must also ensure that, through assessment of the knowledge, skills and competencies of their students, they can provide accurate reports and appropriate recognition in documents that describe in commonly accepted terms the graduates' competencies. It is the identification, measurement, and designation of qualifications that inures transparency of the credential to the benefit of the students/graduates and their institutions, as well as to future national and international employers.

This is the third report in a series examining international trends in developing higher education systems that support the knowledge based economy (KBE) for the purposes of enhancing Ontario's higher education policy initiatives. . The first two papers in this series examine emerging policy trends and themes in international sources and how they relate to the Ontario context[1]. This paper reviews initiatives designed to measure and report on individuals' acquisition of skills and competencies. It examines policies and strategies for developing common definitions when stating expectations about learning outcomes, transparency in communication of goals and accomplishments both prior to and following education and training, and the mobility of students within education systems and institutions, nationally and internationally. Tools and strategies for assessing student performance in achieving stated learning outcomes (that have been and are being introduced in some countries) are examined as to their intent and implementation. Also addressed are the qualifications frameworks that other countries have developed to define outcomes and expectations at each qualification level.

In this review, the European Union (EU), and selected EU member states provide case studies of activities in assessing and reporting on graduates' achievements in acquiring skills and competencies because several have been particularly active in this respect. Through what became known as the Bologna Process, the EU has aimed to develop the European Higher Education Area (EHEA) by 2010; progress toward this goal has included initiatives supporting broad agreements on learning outcomes, increasing standardisation of curriculum for the purposes of comparability, and devising common methods for reporting on skills, and competencies acquired through studies. The European model is being employed in other

[1] The first report identified pathways to higher education, and highlighted policy initiatives encouraging student participation and employer engagement. The second report assessed skills and competency training initiatives within higher education. It examined policies and initiatives that support the development of skills and competencies that encourage labour market matching.

regions of the world, and is an important development in qualification assessment and reporting for the labour market.

2. Defining learning outcomes and key competencies

Learning outcomes, defined by the European Commission in terms of the knowledge, skills, and competencies to be acquired, are considered "statements of what a learner knows, understands and is able to do on completion of a learning process" (European Commission, 2006a: 16). Other researchers and institutions describe learning outcomes as "what a learner knows or can do as a result of learning" (Otter, 1992, in Nusche, 2008: 7). Frameworks of learning outcomes have been introduced for the purpose of assisting students, staff and faculty, and employers to understand the value of the education. Students benefit from defined learning outcomes that help them to make informed choices about their courses and programs of study, and help them to articulate what they have learned. Faculty and staff benefit from defined learning outcomes because they can more readily "translate the aims of a course of programme of study into to a set of competencies'," makes it easier to give credit for learning acquired in another institution or workplace, removes barriers to student mobility, and promotes lifelong learning (Roberts, 2008). Employers, too, benefit from defined learning outcomes because such statements clarify what they can expect graduates to know, understand, and be able to do.

Outcomes-based evaluation is a relatively new model of measuring' education, and has only recently been introduced into higher education systems (Nusche, 2008: 8). Traditionally, measurements for qualifications have been based on inputs such as years of study, curriculum followed, and grades awarded (CEDEFOP, 2009: 15). As outcomes-based measurement is still a developing field, no single or standard typology is used to determine graduates' achievement of skills and competencies and the knowledge gained. However, the broad themes commonly held as indicators of learning and achievement in higher education can be broadly divided into the following cognitive and non-cognitive outcomes (Nusche, 2008: 8-11):

1. "Cognitive outcomes – the development of skills and knowledge
    a. Knowledge outcomes
        i. General content knowledge – common content reaching across disciplines
        ii. Domain-specific or subject-specific knowledge – discipline-specific knowledge (commonly thought to be the most important role of PSE)

    b. Skills outcomes
        i. Generic skills outcomes – verbal and quantitative reasoning, comprehension, critical thinking, and problem solving (questionable as to whether these skills result directly from the PSE experience)
        ii. Domain specific skills – different thinking patterns are used in different domains, and may not be as transferable (e.g., writing in the sciences vs. in the humanities)

2. Non-cognitive outcomes
    a. Many other activities serve to support the development of students – including psychosocial development, attitudes and values, employability, and occupational competence"

Defining key competencies can help focus the learning outcomes, and may serve as the drivers for specific learning outcomes. The OECD has compiled a classification of key competencies. Developed in the late 1990s and linked to the Programme for International Student Assessment (PISA), the Definition and Selection of Competencies (DeSeCo) project groups competencies into three categories (OECD, n.d.: 5):

1. Using tools interactively
    a) Use language, symbols and texts interactively
    b) Use knowledge and information interactively
    c) Use technology interactively

2. Interacting in heterogeneous groups
    a) Relate well to others
    b) Co-operate, work in teams
    c) Manage and resolve conflicts

3. Acting autonomously
    a) Act within the big picture
    b) Form and conduct life plans and personal projects
    c) Defend and assert rights, interests, limits and needs.

These groupings are best applied to general education, but can also be applicable for vocational education, teacher training (CEDEFOP, 2009: 48), and lifelong learning (OECD, n.d.: 16).

At higher education levels, particularly in colleges, more specific competencies are set out. Ontario, for example, has developed a summary of "essential employability skills" which sets out 6 categories of skills: Communication, Numeracy, Critical Thinking & Problem Solving, Information Management, Interpersonal, and Personal. The framework indicates the learning outcomes associated with each skill and sub-skill (Ontario Ministry of Training, Colleges and Universities, 2009b) (see Appendix A).

3. Assessing learning outcomes

Learning outcomes and key competencies are broad concepts that serve to support the theoretical expectations of different types of knowledge which should be developed within educational programs. Yet, assessing learning outcomes also has a practical rather than theoretical side. Assessing outcomes of programs in terms of skills can provide an alternative to the current general ranking methods for PSE institutions such as in *Maclean's*, *Times Higher Education Supplement,* and the *Academic Ranking of World Universities* compiled by the Shanghai Jiao Tong University. Many governments are developing tests to determine the actual outcomes of learning in universities and colleges. Each country assesses its students' achievement of stated learning outcomes in different ways and for different purposes (see Appendix B for a review of selected instruments). Some are intended to examine general skill competencies (such as Australia), others focus on domain-specific knowledge and skills (such as Mexico), while still others (such as Canada and the UK) examine occupational competencies. The audience for the results of these examinations or surveys also varies — from students, institutions, employers, and government bodies.

Currently, there are very few standardized tests assessing learning outcomes performed at a national level (OECD, 2008a: 280). Brazil, the US, and Europe are the most advanced in the development of standardized testing for university and college graduates to assess key competencies. Brazil is the only country that issues standard leaving examinations to all students in their graduating year from tertiary education institutes. The government-sponsored Brazilian national exam of student achievement, abbreviated in Portuguese as ENADE, has been carried out in one form or another since 1996. The most recent incarnation involves assessments of both subject-specific knowledge and generic academic abilities (Shwartzman, 2007)[2]. In the US over 200 institutions are voluntarily participating in the Collegiate Learning Assessment (CLA). These institutions are sampling their students to determine learning outcomes in the areas of critical thinking, analytic reasoning, written communication, and problem solving (CLA, 2009a, 2009b). With the data from the test results, an institutional report can be prepared that allows for institutional comparison over time.

The OECD's international Assessment of Higher Education Learning Outcomes (AHELO) aims to assess learning outcomes for students of universities, polytechnics, and colleges throughout the OECD member countries (AHELO, 2009a). It is currently being piloted in 10 countries to determine its validity for different cultures and languages. Although not intended to be a ranking tool, it is expected to provide an alternative measure of success that incorporates four strands: 1.) the Generic Skills strand; 2.) the Discipline-Specific Skills strand; 3.) the Learning in Context strand; and 4.) the Value-Added strand (AHELO, 2009b). The Generic Skills strand assesses analytical skills, written communication, leadership ability, and a number of other elements. The Specific Skills strand targets discipline-specific knowledge, but goes beyond factual knowledge to determine students' capacity to use or apply the knowledge. The Specific Skills assessments are being piloted in the disciplines of engineering and economics. The Learning in Context strand examines institutional characteristics, that is, physical and organizational characteristics of the institution as a whole outside of the classroom, including the education-related behaviours

[2] Concerns with this assessment are that it becomes a ranking tool (Shwartzman, 2007).

and practices of the institution, the psycho-social and cultural attributes of the student body, and behavioural and attitudinal practices of students. It is expected that this type of information will support a more holistic understanding of an institution. Finally, AHELO aims to examine Value-Added elements, trying to determine the gain in learning that takes place during the higher education experience (International Management in Higher Education [IMHE], 2009). It is expected, for example, that a student with an A+ entry grade graduates with an A+, but there needs to be recognition of the work of the institute that creates an A graduate from the B student. Much of the data will be collected at the national level.

Learning outcomes assessments may provide valuable information; however, there is concern that the results can be used as ranking tools to assess, grade, and compare institutions if they are not carefully implemented. Yet, establishing clear expectations of learning outcomes for the purposes of transparency, mobility, and accountability are is important to ensure quality, transparency, and compatibility among the credentials. Furthermore, with the common practice of developing qualifications frameworks, it is necessary to have a solid understanding of the skills, competencies, and knowledges gained within each qualification bracket.

4. Qualifications frameworks

Many forms of, or tools for, measuring student performance against expected learning outcomes are still in their infancy, but most OECD countries have developed, or are in the process of developing, the more traditional qualifications frameworks. Although similar to the statements of expected learning outcomes, the purpose of qualifications frameworks is to demystify the knowledge, skills, and competencies to be acquired through the chosen educational program. The general aims are to support an understanding for students, institutions and employers about how to navigate the system. If assessment of the compatibility of programs, degrees and diplomas for the student and the labour market is completed, then both national and international mobility become more feasible.

Qualifications frameworks are important tools “to signal to the labour market the skills and competencies held by graduates” (OECD, 2008a: 261), the principal goal of a national framework is to ”achieve a better match between educational provision and the needs of the labour market” (Young, 2007: 453) and aim to “integrate and coordinate national qualifications subsystems and improve the transparency, access, progression and quality of qualifications in relation to the labour market and civil society” (European Union, 2008: 11). National qualifications frameworks (NQF) are developed for a number of reasons including those given below from Young & Gordon, 2007 in CEDEFOP, 2009: 58):

- Moving from a supply-led approach to education and training to one that takes better account of demand;
- Improving the coherence of a particular national qualification system through connecting the different parts and making the whole more transparent to users;
- Making the components of individual qualifications more portable and so encouraging progression;

- Providing a framework within which an individual's formal and informal learning can be recognised and accredited (for the purposes of study, training, employment, mobility, etc.);
- Providing a basis for the exchange, credit transfer and recognition of qualifications between different countries.

Most OECD nations have developed, or are in the process of developing, qualifications frameworks. They can be developed from the bottom up or the top down (Young, 2007; 447); however, those from the bottom up face less resistance from stakeholders. Similarly, quality assurance frameworks can either be input- or output-based (Bohlinger, 2008; OECD, 2008a). The goal of the government implementing an NQF indicates how well it will be received and how well it is used. For example, governments implementing an NQF as an instrument of accountability will find that there is a disconnect between inputs and outcomes as users of the framework will be filling in boxes, yet those applying it as a voluntary "educational instrument" will find it easy to maintain those links (Young, 2007: 448–449). Young (2007: 455) suggests that NQFs may not always be used in the most appropriate manner: for example, developed countries may find that the standardized approach undermines the traditional system without providing any benefits. He further suggests that NQFs are best used as an "enabling instrument'" rather than a "driver of reform."

There are many debates on how the development of NQFs can — or should — occur, and what purpose it serves (OECD, 2008a: 259–317). Increasingly, there is a need to ensure that qualifications frameworks are internationally compatible, because student mobility is increasing, and each nation will have its own definition of skills, knowledge, and competencies. In Europe, the European Qualifications Framework (EQF) incorporates a number of national frameworks (Bohlinger, 2008), and is also comparable to the Dublin Descriptors(see section 5.1). The EQF is designed to be more comprehensive as to the detailed description of the skills and competencies ascribed to each qualification than are the Dublin descriptors, a more generic tool for assessing outcomes. EQF defines learning outcomes as statements of what a learner knows, understands, and is able to do on completion of a learning process (CEDEFOP, 2009), and sets out eight levels of qualifications ranging from basic skills to college or vocational skills and on to doctoral level skills. Under each level are comprehensive outlines of what the skills and competencies encompass (see Appendix C).

The Government of Ontario has also developed a comprehensive qualifications framework to provide students, parents, employers, and others involved in the postsecondary education system with information on the various options and avenues of study (Ministry of Training, Colleges and Universities, 2009a). The Ontario Qualifications Framework (OQF) identifies the main purposes of each qualification, outlines the learning expectations for graduates who hold each type of qualification, and shows the relationship between the different qualifications (Appendix D). It is a well-developed tool that addresses both inputs and outputs of broad program areas that may allow for general international comparisons.

5. European Higher Education Area

The most aggressive work done on developing a common framework for higher education skills and competencies has occurred in Europe. Aspects of the Bologna Accord and the Copenhagen Accord have been introduced into other regions in the world, specifically the Tuning Project. Ontario should be aware of these developments as a good example of how learning competencies and assessments are being introduced into higher education systems.

5.1 The Bologna Process

A massive undertaking related to the development of standardized learning outcomes and competencies has been underway in Europe for nearly ten years. The Bologna Declaration of 1999 saw 20 ministers of education in member states of the European Union agree to form the European Higher Education Area (EHEA) by 2010. The goal of what became known as the Bologna Process has been to bring all higher education institutions into alignment with the Anglo-Saxon model of two-tiered PSE studies: 1.) undergraduate with bachelor's degrees; 2.) graduate levels — master's degrees and doctorates (Pechar, 2007: 110)[3]. Another goal of the process is to facilitate student mobility by developing a clear understanding of the value of each credential. Student mobility is eased by the European Credit Transfer System (ECTS), which assigns credit values to curriculum in the more traditional inputs method.

One aspect of the Bologna Process is the Tuning Project. Tuning is a voluntary agreement that the higher education systems in interested nations will develop and adjust their university programs to become aligned with similar programs in Europe. By bringing together expert scholars and practitioners from across Europe, committees collaborate to develop discipline-specific norms of content, competencies, and learning outcomes for their particular discipline, such as engineering or psychology. The Tuning Project was designed to focus on three types of learning outcomes, generically grouped into Instrumental competencies, Interpersonal competencies, and Systemic competences (see Table 1). It is expected to have a policy-level influence on learning and teaching in higher education. Overall, it supports the development of generic skills rather than subject-based competencies. The Tuning Project has been introduced in Latin America, where they are aiming to "identify and improve co-operation between higher education institutions, so as to develop excellence, effectiveness, and transparency" (Tuning, 2009).

[3] The equivalency of the 3-year bachelor's degree from the EHEA to the Canadian 4-year degree is worthy of consideration as to how it affects international graduate student mobility to Canada. Almost half of North American graduate schools in the US accept the 3-year European degree by "evaluating the degree for equivalency" (Pechar, 2007: 120).

Table 1. Tuning Project: Generic Learning Outcomes of University Graduates

Instrumental competences	Interpersonal competences	Systemic competences
Capacity for analysis and synthesis	Critical and self-critical abilities	Capacity to apply knowledge in practice
Capacity for organization and planning	Teamwork	Research skills
Basic general knowledge	Interpersonal skills	Capacity to learn
Grounding in professional knowledge	Ability to work in inter-disciplinary team	Capacity to adapt to new situations
Oral and written communication	Ability to communicate with experts in other fields	Creativity
Knowledge of a second language	Appreciation of diversity and multiculturalism	Leadership
Computing skills	Ability to work in international context	Understanding other cultures
Information management skills	Ethical commitment	Ability to work autonomously
Problem solving		Project design and management
Decision making		Initiative and entrepreneurial spirit
		Concern for quality
		Will to succeed

Source: CEDEFOP, 2009; 47.

5.1.1 Dublin Descriptors

A primary feature of the Bologna Declaration is the development of a common education area that facilitates student mobility. This process should ensure that degrees and qualifications following the two-tiered cycle of bachelor's and master's degrees, followed by doctoral are comparable, compatible, and transparent, and that there are common descriptors of the attributes that graduates will have obtained upon completion of each cycle (though more prescriptive than the Tuning Project) (European Union, 2004: Joint Quality Initiative). In 2004, members of eight EU countries meeting in Dublin developed what became called the Dublin Descriptors, based on multiple national frameworks, that set out the learning outcomes for short cycles and cycle 1, cycle 2, and cycle 3. The short cycle is equivalent to a college diploma awarded when the students have demonstrated knowledge in their field for the purposes of work, vocation, or personal development. Cycles 1, 2, and 3 are representative of the degrees of Bachelor's, Master's, and Doctorate respectively. There are five areas of competencies addressed by the descriptors, each of which is broken down into specific skills for each of the three primary cycles. The areas are Knowledge and understanding, Applying knowledge and understating, Making judgments; Communication; and Learning skills (European Union, 2004: Joint Quality Initiative) (see Appendix E for breakdown of cycles and descriptions of competencies).

5.1.2 Diploma Supplement

Another feature of the Bologna Process that allows skills, competencies, and knowledge to be easily transferable and transparent is the Diploma Supplement. Since 2005, a Diploma Supplement has been issued to all graduating students by their institution. Beyond a simple transcript, the Supplement is intended as a recognition instrument to indicate to employers, institutions, the general public, and the individual the content of the qualification and the structure of the system from which it came (United Kingdom Higher Education, Europe Unit, 2006). The Diploma Supplement addresses "Information on the Contents and Results Gained" which includes highlights of knowledge and understanding, Intellectual (thinking skills), Practical Skills (subject specific), and key skills (see Appendix F for an example of the Diploma Supplement).

5.2 Lisbon Strategy for an integrated Labour Market

At approximately the same time that the Bologna Process was instigated through the European Union, the European Commission leaders decided on a complementary strategy that would help ensure growth and prosperity within the European Economic Community. The signatories of the Lisbon Strategy[4] recognized that the productivity and competitiveness of Europe's economy are directly dependent on a well-educated, skilled, and adaptable workforce that is able to embrace change. They acknowledged the deficiencies of current investments in human capital in both high and low-skilled positions as well as in manufacturing and services. The leaders emphasized that education and training systems must be improved and that lifelong learning schemes must be available and encouraged for all, especially given the potential consequences of Europe's ageing population on economic productivity. Lastly, the leaders called on all actors — public authorities, individuals and businesses — to help raise the levels and efficiency of investment in human capital by creating incentives to boost training within individual companies and across sectors in order to support employers in providing access to learning (High Level Group, 2004: 33).

5.2.1 Copenhagen Process for Vocational Education and Training

Under the Lisbon strategy, a process corresponding to the Bologna Process was developed: the Burges-Copenhagen Process on Enhanced European Cooperation in Vocational Education and Training (VET). The Copenhagen Process (as it is commonly dubbed) was launched as a European strategy to improve the overall performance, quality, and attractiveness of VET in Europe (Helsinki Communiqué, 2006: 4). It emphasizes VET as an essential tool in providing European citizens with the skills, knowledge, and competencies needed in current labour markets and knowledge based societies. Signatories of the process call for improved governance of training systems and responsiveness to the changing skill requirements of the labour market. Consequently, the process advocates that training must become increasingly demand-driven.

[4] Unlike the European Union, the European Commission is not a legally binding organizational structure, such that not all members are mandated to formal agreements.

The Copenhagen Process aims to improve the links between VET and the labour market with regard to the strategy's three dimensions: competitiveness, employment, and social cohesion (European Commission, 2006b; Helsinki Communiqué: 7). Its specific projects focus on:

- The development of a single framework for transparency of competencies and qualifications — Europass.
- A public consultation on the development of a system of credit transfer for vocational education and training, the European Credit Transfer System for Vocational Education and Training (ECVET).
- Common criteria and principles for quality in VET to serve as a basis for European-level initiatives in quality assurance.
- Common principles for the validation of non-formal and informal learning to ensure greater compatibility between approaches in different countries.
- Offering lifelong guidance with a European dimension.

The Copenhagen Process is developing a framework for the transparency of competencies and qualifications (United Kingdom Higher education, Europe Unit, 2009). The Europass intends to "help people make their skills and qualifications clearly and easily understood." The Europass includes a template form Europass CV and Language Passport, Europass Mobility (which documents foreign work or educational activity), as well as a Europass Certificate Supplement and/or a Europass Diploma Supplement (Europass, 2009a). The Certificate Supplement is similar to the Bologna-based Diploma Supplement, outlining skills and competencies proven in the process of acquisition of Vocational Education Training[5] (see Appendix G for an example of the Certificate Supplement).

The work in Europe highlights how assessing skills, competencies, and knowledge can improve instruction and curriculum, serve as public accountability, assist in consumer information, and aid students in making the right educational choices (Nusche, 2008).

The Bologna Accord examines how universities are addressing issues of modernizing the university system and focuses on learning outcomes through the 'Tuning Project, which sets outcomes for programs and educational systems. At the college level, the Copenhagen Accord similarly sets to assign outcomes, skills, and competencies to programs across Europe. Thus, learning outcomes work as a quality assurance mechanism within institutions, educational systems, and the broader academic community, and as a means of establishing expected norms from programs and short-cycle diplomas. Ontario might want to consider the strategies of Europe when conceptualizing how to move forward in developing a comprehensive program for assessing the skills and competencies students acquire through training and standardizing methods of reporting and acknowledging in specific credentials.

[5]The Certificate Supplement is not part of the Bologna Process of the European Union, but rather associated with the Copenhagen Process and the Lisbon Accord of the European Commission. Thus, governments and their institutions are not mandated to provide Certificate Supplements.

6. Conclusion

The development of, assessment of, and recognition of the essential skills, competencies, and knowledge to be gained through postsecondary education are essential for the knowledge based economy. Students, parents, educators, institutions, employers, as well as national and international governments can more readily identify the type of graduates that postsecondary institutions are developing, which may ease their eventual transition into the local and global workforce.

The recent trend in PSE is to develop learning outcome frameworks. The bottom-up approach of having disciplines determine the skills, competencies, and knowledges of their graduates provides a more accurate explanation of the diploma or degree. Developing discipline-specific norms allows for a transparent — although somewhat standardized — system. A transparent system allows for greater mobility for individuals into other institutions of learning or into positions, fields, provinces, or countries as their abilities are clearly defined. Within Europe, the Bologna and Copenhagen processes are quickly enabling mobility and appropriate international degree recognition.

Discipline-specific learning outcomes are still being developed in many countries, but the demand has increased for assessing students' level of attaining the expectations stated in these learning outcomes. Such assessment tools have been developed in Brazil, the US, and more recently in Europe. These tools are intended to assess students' progress toward or accomplishment in meeting stated learning outcomes as well as to offer an alternative to more basic institutional ranking tools. However, the results of such assessments may be used as ranking measures, and thus the implementation of learning outcomes assessments should be very carefully employed.

While not as innovative as learning outcomes assessments, the qualifications frameworks that most nations have developed do set out general expectations of knowledge and skills to be attained through the programs of study for each certificate, diploma, and degree program. These are important tools to have in place because they bring greater transparency for students, parents, and the educational processes as well as a basic understanding of the balance of emphasis on each element. Ontario has a substantial qualifications framework which outlines the skills, competencies, and knowledge to be acquired through various programs.

To conclude, it has become increasingly important to take the development and assessment of graduates' skills, competencies, and knowledges into account. Having the right people in the right jobs is vital in a knowledge based economy. A better understanding of the marketplace and the skills and competencies required for success within it is essential, as is ensuring that those needs are addressed through the programming available in higher education institutions. In addition, by identifying a graduate's aptitudes vis-à-vis stated learning outcomes increases the likelihood of an appropriate fit for defined position descriptions, and assures employers that Ontario's graduates are ready to hit the ground running.

Appendix A – Ontario: Essential Employability Skills

Skill Category	Defining Skills: Skill areas to be demonstrated by graduates:	Learning Outcomes: The levels of achievement required by graduates. The graduate has reliably demonstrated the ability to:
Communication	• Reading • Writing • Speaking • Listening • Presenting • Visual literacy	*communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.* *respond to written, spoken, or visual messages in a manner that ensures effective communication.*
Numeracy	• Understanding and applying mathematical concepts and reasoning • Analyzing and using numerical data • Conceptualizing	*execute mathematical operations accurately*
Critical Thinking & Problem Solving	• Analyzing • Synthesizing • Evaluating • Decision making • Creative and innovative thinking	*apply a systematic approach to solve problems.* *use a variety of thinking skills to anticipate and solve problems*
Information Management	• Gathering and managing information • Selecting and using appropriate tools and technology for a task or a	*locate, select, organize, and document information using appropriate technology and information systems.* *analyze, evaluate, and apply relevant*

SKILL CATEGORY	DEFINING SKILLS: Skill areas to be demonstrated by graduates:	LEARNING OUTCOMES: The levels of achievement required by graduates. The graduate has reliably demonstrated the ability to:
	project • Computer literacy • Internet skills	*information from a variety of sources.*
Interpersonal	• Team work • Relationship management • Conflict resolution • Leadership • Networking	*show respect for the diverse opinions, values, belief systems, and contributions of others.* *interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals.*
Personal	• Managing self • Managing change and being flexible and adaptable • Engaging in reflective practices • Demonstrating personal responsibility	*manage the use of time and other resources to complete projects.* *take responsibility for one's own actions, decisions, and consequences.*

(Ontario Ministry of Training, Colleges and Universities, 2009b)

Appendix B – Learning outcome assessment tools and use by country

Country	Test Name, Introduction Date	Type of outcomes assessed	Use of assessment results
Australia	Graduate Skills Assessment (GSA), 2000	**Generic skills:** Critical Thinking, Problem Solving, Written Communication (ACER is currently considering modifications such as the addition of basic skills, management skills, IT skills, research skills). **Domain-specific knowledge and skills:** (Not yet included but ACER is currently considering the possibility of testing elements within various broad Field of Study groups) **Non-cognitive outcomes:** Interpersonal understanding.	**HEIs:** At entry level: identify poorly performing students to follow up and offer assistance. At graduation level: use results as an additional criterion for entry into graduate-level courses. Benchmark and analyse trends, document/demonstrate program effectiveness and improvement over time, compare students' achievement levels with national user norms, develop and improve curricula, determine student eligibility for upper-division studies. **Government:** Collect information on the quality of learning outcomes across HEIs for national and potentially international benchmarking of graduate skills. **Employers:** The Government promotes the test to employers and supports its use as a standard recruitment tool.
Australia	Course Experience Questionnaire (CEQ), part of the Graduate destination survey since 1993	**Generic skills:** Problem Solving, Analytic Skills, Written Communication Skills. **Non-cognitive outcomes:** Teamwork skills, Student satisfaction with the following: Teaching, Goals and Standards, Workload, Assessment. **General competencies:** Confidence in tackling unfamiliar situations, Ability to plan work.	**HEIs:** Benchmarking, trend analysis, evaluation of programmes, curriculum development and improvement. Provide national accountability data. **Government:** Ensure quality and performance management within HEIs. Inform student choice. Assess and plan for the needs of the HE sector. Since 2005, results from the CEQ are used for performance-based incentive funding through the national "Learning and Teaching Performance Fund (LTPF)".
Australia	Graduate Destination Survey (GDS), 1972	**Occupational competencies:** Employment outcomes approximately 4 months after graduation: availability for employment, sectors of employment, average annual salaries, graduates' job search activities. Further study activities, such as mode of study (full/part-time), levels of study, fields of education, and institution.	**HEIs:** Benchmarking, trend analysis, evaluation of programmes, curriculum development and improvement to optimize labour market and further study outcomes. Provide national accountability data. **Government:** Ensure quality and performance management within HEIs. Inform student choice. Assess and plan for the needs of the HE sector. Since 2005, results from the GDS are used for performance-based incentive funding through the "Learning and Teaching Performance Fund (LTPF)".
Brazil	Exame Nacional de Cursos (ENC or "Provão"), 1995-2003	**Domain-specific knowledge and skills** that are considered essential and common to all HEI curricula in the specific domain. Available for 26 subject areas.	**HEIs:** Good scores were widely used for commercial purposes (advertisements & publicity). Results often served to mobilize students and professors to make a joint effort to maintain good scores/improve bad

			ones. **Government:** Since 2001, the test served as guidance for accreditation and re-accreditation, but punitive measures were only taken in extreme cases. **General Public:** Provão results were widely divulged by the media to inform prospective students and society at large about the quality of learning across HEIs.
Brazil	Exame Nacional de Desempenho dos Estudantes (ENADE), 2004	**Domain-specific knowledge and skills** that are considered essential and common to all HEI curricula in the specific domain. Available for 13 subject areas. **General content knowledge:** Among the assessed themes are biological and social diversity, public policies, social networks, citizenship, and current events and problems. Generic skills: Ability to infer, interpret poetic texts, establish common points, identify associations, reflect, deduct, and understand graphics.	**Students:** Prove their performance according to national standards to potential employers. **HEIs:** Benchmarking, trend analysis, evaluation of programmes, curriculum development and improvement. Provide national accountability data. **Government:** ENADE is one aspect of a combination of performance indicators used for HEI evaluations. **Employers:** may ask for a candidate's test results as objective evidence of proficiency in the professional area.
Canada	National Graduate Survey (NGS), 1978. Follow-up Survey of Graduates, 1987	**Occupational competencies:** Employment outcomes two years and five years after graduations: Information on the number, characteristics, and duration of all jobs held since graduation, on the length of job search, the match between education and occupation. Graduate satisfaction with their HEI experience.	**HEIs:** Benchmarking, trend analysis, evaluation of programmes, curriculum development and improvement to optimize labour market and further study outcomes. Provide national accountability data. **Government:** Assess and plan for the needs of the HE sector
Canada	Youth in Transition Survey (YITS)	**Occupational competencies**: Questions for the 3rd cycle of assessment (target population then aged 22-24) include question on postsecondary education and engagement and employment outcomes.	**Human Resources Skills Development Canada:** Collect information on the patterns of, and influences on, major transitions in young people's lives, particularly with respect to education, training and work. Aid policy and program development. Provide information to educators, social and policy analysts and advocacy groups.
Mexico	Exámen Nacional de Ingreso al Posgrado (EXANI-III), 1997	**Generic skills:** Verbal and mathematic reasoning, Capacities to infer, analyse and synthesize. Competencies in information use: organise, obtain and understand information	**HEIs:** Use individual student results to compare performance of applicants and to facilitate decision-making on student admission and/or scholarship attribution.
Mexico	Exámen General Para el Egreso de	**Domain-specific knowledge and skills** that are considered	**Students:** Prove their performance according to national standards to

	la Licenciatura (EGEL), 1994	essential and common to all HEI curricula in the specific domain. Available for 33 different subject areas.	potential employers. **HEIs:** Benchmarking, trend analysis, evaluation of programmes, curriculum development and improvement. Some HEIs use results as an additional criterion for certification or graduation. **Employers:** may ask a candidate's test results as objective evidence of proficiency in the professional area.
Mexico	Exámenes Generales para el Egreso del Técnico Superior Universitario (EGETSU), 2000	**Domain-specific knowledge and skills:** Comprehension levels and problem solving skills needed in the student's major field. Tests are available for all 19 areas of the Technical University Track. General content knowledge and generic skills: knowledge and ability necessary for all careers, namely social and economic knowledge, IT, and English	**Students:** Prove their performance according to national standards to potential employers. **HEIs:** Benchmarking, trend analysis, evaluation of program analysis, curriculum development and improvement. Results may be used by individual HEIs as a criterion for certification or graduation. **Employers:** may ask a candidate's test results as objective evidence of proficiency in the professional area.
UK	Destinations of Leavers from Higher Education (DLHE), 2002 (replaced the "First Destination Supplement")	**Occupational competencies:** Employment and further study outcomes six months after graduation: how many graduates are in employment, the types of jobs they go into, and how many go onto further study.	**HEIs:** Benchmarking, trend analysis, evaluation of programmes, curriculum development and improvement to optimize labour market and further study outcomes. Provide national accountability data. **Government:** Assess and plan for the needs of the HE sector.
USA	Collegiate Assessment of Academic Proficiency (CAAP), 1988	**Generic skills:** Writing (objective and essay), reading, mathematics, science reasoning, critical thinking, curricular content drawn from all fields.	**HEIs:** Satisfy accreditation and accountability reporting requirements, benchmark and analyse trends, document/demonstrate program effectiveness and improvement over time, compare students' achievement levels with national user norms, develop and improve curricula, determine student eligibility for upper-division studies. **States:** the CAAP has been used to track entire systems over a period of time, using test results as a benchmark for progress within a public accountability framework. State-wide results may be published in a "public report card" and compared with the results of other states
USA	Measure of Academic Proficiency and Progress (MAPP), 2006 (replaced the ETS "Academic Profile" test, 1992-2006)	**Generic and domain-specific skills:** Reading and critical thinking are measured in the context of humanities, social sciences, or natural sciences. Writing, mathematics.	**HEIs:** Satisfy accreditation and accountability reporting requirements, benchmark and analyse trends, document/demonstrate program effectiveness and improvement over time, compare students' achievement levels with national user norms, develop and improve curricula, determine student eligibility for upper-division studies, counsel individual students for academic achievement
USA	Tasks in Critical	**Generic and domain-specific**	**HEIs:** Satisfy accreditation and

	Thinking, 1992 (discontinued)	**skills:** inquiry, analysis, communication skills. Performance based tasks set in the context of broad disciplines (natural sciences, social sciences, humanities, arts).	accountability reporting requirements, benchmark and analyse trends, document/demonstrate program effectiveness and improvement over time, compare students' achievement levels with national user norms, develop and improve curricula, determine student eligibility for upper-division studies.
USA	Major Field Tests, 1990 (based on the GRE Subject Tests)	**Domain-specific knowledge and skills** that are considered most important within each major field of study: factual knowledge, ability to analyse and solve problems, ability to understand relationships, ability to interpret material including graphs, diagrams, and charts based on material related to the field. Available for 15 undergraduate disciplines and for MBAs.	**Students:** Test is often given as a capstone course or in the last semester of study as part of a graduation requirement. **HEIs:** Scores may be used for medium to high-stakes decisions. Document proficiency in the specific area in the last semester of study to measure effectiveness of departmental curricula. Satisfy accreditation and accountability reporting requirements, benchmark and analyse trends, document/demonstrate program effectiveness and improvement over time, compare students' achievement levels with national user norms, develop and improve curricula, determine student eligibility for upper-division studies.
USA	Collegiate Learning Assessment (CLA), 2002	**Generic and domain-specific skills:** critical thinking, analytic reasoning, written communication, ability to use information. **Competencies:** Real-life tasks such as preparing a memo or policy recommendation by using different types of documents and data that must be reviewed and evaluated. Performance-based tasks set in the context of broad disciplines (natural sciences, social sciences, humanities, arts).	**HEIs:** Provide accountability data, create institution-wide criteria for course adoption, benchmark and analyse trends, document/demonstrate program effectiveness and improvement over time, compare students' achievement levels with national user norms, develop and improve curricula.
USA and Canada	National Survey of Student Engagement (NSSE), 2000 (in Canada since 2004)	**Non-cognitive outcomes**: information on student engagement: how undergraduates spend their time and what they gain from courses, extracurricular activities, and HEI services.	**HEIs**: Develop and improve curricula and services to enhance student engagement. Satisfy accreditation and accountability reporting requirements (NSSE provides an "Accreditation Toolkit" facilitating the use of NSSE results for regional accreditation). Benchmark and analyse trends, document/demonstrate program effectiveness and improvement over time, compare students' achievement levels with national user norms. **General public:** Aggregated results

			are publicly available and provide information about what students gain from their HEI experiences. **Government:** Data can be used as an indicator of institutional effectiveness in accrediting processes. Data supports national and sector benchmarking processes.
Test centres in the USA, Canada and other countries	Graduate Record Examination (GRE) General Test, 1966	**Generic skills:** verbal reasoning, quantitative reasoning, and analytical writing.	**HEIs:** Compare performance of applicants and to facilitate decision-making on student admission

(Modified from Nusche, 2008)

Appendix C – European Framework of Qualifications

Level	Knowledge Described as theoretical and/or factual	Skills Described as cognitive (use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments)	Competence Described in terms of responsibility and autonomy
1	Basic general knowledge	Basic skills required to carry out simple tasks	Work or study under direct supervision in a structured context
2	Basic factual knowledge of a field of work or study	Basic cognitive and practical skills required to use relevant information to carry out tasks and to solve routine problems using simple rules and tools	Work or study under supervision with some autonomy
3	Knowledge of facts, principles, processes and general concepts, in a field of work or study.	A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information	Take responsibility for completion of tasks in work or study Adapt own behaviour to circumstances in solving problems
4	Factual and theoretical knowledge in broad contexts within a field of work or study	A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	Exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change Supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities
5	Comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge	A comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	Exercise management and supervision in contexts of work or study activities where there is unpredictable change Review and develop performance of self and others
6	Advanced knowledge of a field of work or study, involving critical understanding of theories and principles	Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts Take responsibility for managing professional development of individuals and groups
7	Highly specialized knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking Critical awareness of knowledge issues in a field and at the interface between different fields	Specialised problem solving skills required in research and/or innovation to develop new knowledge and procedures and to integrate knowledge from different fields	Manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches Take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams
8	Knowledge at the most advanced	The most advanced and	Demonstrate substantial

	frontier of a field of work or study and at the interface between fields	specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice	authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research

(CEDEFOP 2009: p. 45)

Appendix D – Ontario Qualifications Framework

ONTARIO QUALIFICATIONS FRAMEWORK

The Ontario Qualifications Framework includes all non-religious postsecondary certificate, diploma and degree programs offered under the auspices of the Province of Ontario, including apprenticeship certificates, the qualifications awarded by private career colleges, the qualifications awarded by public colleges, and degrees offered by public universities and institutions authorized to award degrees by a consent of the Minister of Training, Colleges and Universities of Ontario.

A. QUALIFICATION DESCRIPTIONS

The qualification categories distinguish between levels of knowledge based on a continuum ranging from the mastery of particular, established bodies of knowledge and skills to levels at the frontiers of knowledge where new knowledge is created and established assumptions and methods are challenged. Each qualification may be seen as a reference point along that continuum. The descriptions of each qualification outline its purpose, typical admission requirements and typical duration.

Descriptors	1 Certificate I	2 Certificate II	Certificate of 3 Apprenticeship	Certificate of 4 Qualification	5 Certificate III	6 Diploma I	7 Diploma II	8 Advanced Diploma	9 Post-Diploma Certificate	10 Baccalaureate/Bachelor's Degree	11 Baccalaureate/Bachelor's Degree: Honours	12 Masters Degree	13 Doctoral Degree
Overall Program Design and Outcome Emphasis	Programs provide a level of skills, knowledge and attitudes to allow graduates to meet narrowly defined job requirements.	Programs provide a level of skills, knowledge and attitudes to allow graduates to work in a limited range of activities within a prescribed range of functions.	Programs require the apprentice to demonstrate the skills and knowledge in a specific trade or occupation. Training is workplace-based. Requires the successful completion of on-the-job training standards of skills and safety as recommended by industry (80-90%) and formal instruction incorporating a blend of theory and practice (10-20%). Learning outcomes and performance objectives are defined in provincial curriculum and training standards.	Programs require the successful completion of the qualification/ certification examination for a trade or occupation. A holder is qualified to be employed in a specific trade or occupation. A holder of the Ontario Certificate of Qualification with a Red Seal is qualified to practice a specific trade or occupation in participating Canadian jurisdictions.	Programs provide a level of skills, knowledge and attitudes to allow graduates to perform in a defined range of varied activities within a prescribed range of functions involving known routines and procedures. Programs also engage students in some learning in disciplines outside their main field of study.	Programs provide a level of skills, knowledge and attitudes to allow the graduates to work within a broad range of technical and/or administrative requirements coordination and evaluation.	Programs provide a level of skills, knowledge and attitudes to allow the graduates to work within a broad range of technical and/or administrative requirements, coordination and evaluation, and engage students in learning in disciplines outside their main field of study.	Programs provide the knowledge, skills and attitudes to enable graduates to work within a broad range of technical and/or management functions in a broad range of occupational areas. Graduates understand both the required conceptual frameworks as well as applications related to the specific occupational area.	Programs either deepen knowledge and skills already gained through a diploma or advanced diploma program or provide graduates of baccalaureate programs with specific knowledge and skills related to an applied occupational area.	Programs provide some broad knowledge and conceptual sophistication, including specialized knowledge in at least one discipline or field.	Programs provide more conceptual sophistication, specialized knowledge and intellectual autonomy. Students learn appropriate applications of conceptual frameworks. Normally require students to prepare, under supervision, a terminal research paper, thesis, project, exhibition etc. May also require to complete other practice-based exercises intended to develop and demonstrate the student's readiness for employment. Types: –Academically-oriented –Profession-oriented –In an applied area of study	Programs require the student to develop and demonstrate advanced research skills under supervision. Some programs require students to demonstrate the necessary research, analytical, interpretative, methodological and expository skills in course exercises. Types: –Profession-oriented –Research-oriented	Programs are thesis-based. Students must have demonstrated a high degree of intellectual autonomy, an ability to conceptualize, design and implement projects for the generation of significant new knowledge and/or understanding, and their ability to create and interpret knowledge that extends the forefront of a discipline, usually through original research or creative activity. Types: -Profession-oriented -Research-oriented
Preparation for Employment and Further Study	For employment at entry-level positions or to prepare graduates to begin postsecondary studies.		To provide workplace-based training in skilled trades or occupations.	To ensure individual's preparedness to be employed in specific skilled trade or occupation.	For employment at entry-level positions and for further postsecondary studies.	For employment at entry-level positions and for further postsecondary studies.	For employment at entry-level positions and for more specialized education at an advanced level.		For employment in a more specialized role and for further postsecondary studies.	For some second-entry professional degree programs, employment in a variety of fields, or advanced entry into an honours or specialist program of study in the field.	For entry into graduate study in the field, second-entry professional degree programs or, depending upon content, employment in a particular field of practice or employment in a variety of fields.	For a further study in the discipline or for employment in circumstances requiring sound judgment, personal responsibility and initiative, in complex and unpredictable professional environments.	For employment requiring the ability to make informed judgements on complex issues in specialist fields, and innovation in tackling and solving problems.
Typical Duration	At least 40 instructional hours.	240 to 500 instructional hours.	Up to five years depending on the trade or occupation.	N/A	Two semesters or 600-700 equivalent instructional hours.	1000+ instructional hours.	Four semesters or 1200-1400 equivalent instructional hours.	Six semesters or 1800-2100 equivalent instructional hours.	Two semesters or 600-700 equivalent instructional hours.	Six to eight semesters in duration (normally 90 to 120 credits, or the equivalent).	Eight semesters or more (normally 120 credits or the equivalent). May be supplemented by required professional experience (e.g., supervised practice, internships, work terms, co-ops).	Three to five semesters. Normally 45-60 credits or the equivalent.	Three to five years in length, depending on the field and the speed at which individuals progress through requirements.
Admission Requirements	Secondary school diploma or equivalent, or at least 18 years old (PCC) or at least 19 years old (CAAT), or is the holder of an admission requirement established by the Board of Governors (CAAT) or Superintendent of Private Career Colleges (PCC) for a specific program of instruction and additional program-specific requirements.		Academic entry requirements are defined in regulation. May be up to grade 12 but varies depending on the trade or occupation. Other entry requirements may be determined depending on the trade or occupation. Minimum age: 16 years. Also CAAT admission requirements for Co-op Diploma programs.	Demonstration of equivalent experience in a trade or occupation including meeting the performance objectives as defined in the training standard recommended by industry.	Secondary school diploma or equivalent, or at least 18 years old (PCC) or at least 19 years old (CAAT), or is the holder of an admission requirement established by the Board of Governors (CAAT) or Superintendent of Private Career Colleges (PCC) for a specific program of instruction and additional program-specific requirements.				Ontario College Diploma, Ontario College Advanced Diploma, private career college diploma, degree or equivalent and additional program-specific requirements.	Ontario Secondary School Diploma or equivalent, six university or university/college courses at the Grade 12 level, a minimum average set by the institution and additional requirements as programs require.	Ontario Secondary School Diploma or equivalent, six university or university/college courses at the Grade 12 level, a minimum average set by the institution and additional requirements as programs require.	Baccalaureate/Bachelor's Degree: Honours or other undergraduate degree, plus bridging studies where necessary.	Normally a Masters degree, though some doctoral programs admit high-performing students with Baccalaureate/Bachelor's Degree: Honours degrees. In some cases, bridging studies may be required.
Provider*	Private Career College (PCC)	PCC College of Applied Arts and Technology (CAAT)	Training provided by ministry-approved training delivery agents (majority are CAATs) and employers. The ministry issues the certificate.	Service provided by ministry Employment Ontario examination centres. The ministry issues the certificate.	CAAT	PCC	CAAT	PCC/CAAT	PCC/CAAT	Ontario public university/consent holder pursuant to *Post-secondary Education Choice and Excellence Act, 2000*			
Qualification Awarded	PCC: TBD	PCC: TBD CAAT: Certificate	Ontario Certificate of Apprenticeship	Ontario Certificate of Qualification	CAAT: Ontario College Certificate	PCC: TBD	CAAT: Ontario College Diploma	PCC: TBD CAAT: Ontario College Advanced Diploma	PCC: TBD CAAT: Ontario College Graduate Certificate	Baccalaureate/Bachelor's Degree	Baccalaureate/Bachelor's Degree: Honours	Masters Degree	Doctoral Degree

ONTARIO QUALIFICATIONS FRAMEWORK

B. QUALIFICATION STANDARDS

This table outlines the generic competencies that the holder of each qualification is expected to be able to demonstrate, with a focus on knowledge and skills transferable to the workplace or useful for further study. The descriptors in the first column indicate the different categories of competencies, which vary in nature and degree depending on the qualification. The capacity to work creatively and autonomously is required at all levels but in contexts that range from fixed routines to those characterized by ambiguity and uncertainty.

Descriptor	1 Certificate I	2 Certificate II	Certificate of 3 Apprenticeship	Certificate of 4 Qualification	5 Certificate III	6 Diploma I	7 Diploma II	8 Advanced Diploma	9 Post-Diploma Certificate	10 Baccalaureate/Bachelor's Degree	11 Baccalaureate/Bachelor's Degree: Honours	12 Masters Degree	13 Doctoral Degree
Depth and Breadth of Knowledge	The basic skill and knowledge requirements for entry-level employment in positions with clearly defined requirements.	The basic skill and knowledge requirements for entry-level employment in positions with a limited range of activities within a prescribed range of functions.	The skill and knowledge requirements for successful performance in a trade or occupation as defined in provincial training standards.	The skill and knowledge requirements for successful performance in a trade or occupation as defined in provincial or national training/occupational standards.	a) The basic skill and knowledge requirements for entry-level employment in positions with limited range of activities within a prescribed range of functions; b) Some breadth beyond the vocational field within the themes of: arts in society; civic life; social and cultural understanding; personal understanding; and science and technology.	The skill and knowledge requirements for successful performance in a complex occupational setting.	a) The skill and knowledge requirements for successful performance in a complex occupational setting; b) At least some breadth beyond the vocational field, with exposure to at least one discipline outside the main field of study within the themes of: arts in society; civic life; social and cultural under-standing; personal understanding; and science and technology, to increase awareness of the society and culture in which they live and work.	a) The skill and knowledge requirements for successful performance of a specialized range of activities, most of which would be complex or non-routine in an occupational setting; b) At least some breadth beyond the vocational field, with exposure to at least one discipline outside the main field of study within the themes of: arts in society; civic life; social and cultural understanding; personal understanding; and science and technology, to increase awareness of the society and culture in which they live and work.	a) Specialized knowledge in a specific field; b) A level of knowledge and skill that enhances one's ability to perform a more specialized range of complex and non-routine activities within the field; c) Locally determined exposure to disciplines outside the main field of study.	a) A general knowledge and understanding of many key concepts, methodologies, theoretical approaches and assumptions in a discipline; b) A broad understanding of some of the major fields in a discipline, including, where appropriate, from an interdisciplinary perspective, and how the fields may intersect with fields in related disciplines; c) An ability to gather, review, evaluate and interpret information relevant to one or more of the major fields in a discipline; d) Some detailed knowledge in an area of the discipline; e) Critical thinking and analytical skills inside and outside the discipline; f) The ability to apply learning from one or more areas.	a) A developed knowledge and critical understanding of the key concepts, methodologies, current advances, theoretical approaches and assumptions in a discipline overall, as well as in a specialized area of a discipline; b) A developed understanding of many of the major fields in a discipline, including, where appropriate, from an interdisciplinary perspective, and how the fields may intersect with fields in related disciplines; c) A developed ability to: i. gather, review, evaluate and interpret information; ii. compare the merits of alternate hypotheses or creative options, relevant to one or more of the major fields in a discipline; d) A developed, detailed knowledge of and experience in research in an area of the discipline; e) Developed critical thinking and analytical skills inside and outside the discipline; f) The ability to apply learning from one or more areas outside the discipline.	A systematic understanding of knowledge, including, where appropriate, relevant knowledge outside the field and/or discipline, and a critical awareness of current problems and/or new insights, much of which is at, or informed by, the forefront of their academic discipline, field of study or area of professional practice.	A thorough understanding of a substantial body of knowledge that is at the forefront of their academic discipline or area of professional practice, including, where appropriate, relevant knowledge outside the field and/or discipline.
Conceptual & Methodological Awareness/ Research and Scholarship	A prescribed range of functions involving known routines and procedures.	a) A prescribed range of functions involving known routines and procedures; b) Understanding and application of mathematical concepts and reasoning, analyzing and using numerical data, and conceptualizing; c) Application of a variety of thinking skills and a systematic approach to anticipate and solve problems; d) Ability to analyze, evaluate, and apply relevant information from a variety of sources.	a) Performance of defined competencies with associated knowledge is usually within a range of broader related activities involving known routines, methods and procedures, and analyzing and evaluating situations to determine a course of action; b) Knowledge of the main methods of enquiry in their field that enable the individual to: i. Evaluate the appropriateness of different approaches and techniques to solving problems using known routines, methods and procedures of the trade or occupation; ii. Solve practice-related problems using ideas and techniques common to the trade or occupation; iii. Conceptualize and implement innovative approaches to situations; iv. Select, adapt and transfer skills and knowledge to varying occupational settings.		a) A prescribed range of functions involving known routines and procedures; b) Understanding and application of mathematical concepts and reasoning; analyzing and using numerical data; and conceptualizing; c) Application of a variety of thinking skills and a systematic approach to anticipate and solve problems; d) Ability to analyze, evaluate and apply relevant information from a variety of sources.	a) A range of skills, with associated knowledge, showing substantial depth in some areas where judgment is required in the planning and selection of appropriate equipment, services, or techniques for self and others; b) Understanding and application of mathematical concepts and reasoning; analyzing and using numerical data; and conceptualizing; c) Application of a variety of thinking skills and a systematic approach to anticipate and solve problems; d) Ability to analyze, evaluate and apply relevant information from a variety of sources.		a) A significant range of skills associated with fundamental principles and complex techniques across a wide and often unpredictable variety of contexts in relation to either varied or highly specific functions; b) Understanding and application of mathematical concepts and reasoning; analyzing and using numerical data; and conceptualizing; c) Application of a variety of thinking skills and a systematic approach to anticipate and solve problems; d) Ability to analyze, evaluate and apply relevant information from a variety of sources.	A prescribed range of skilled operations that includes the requirement to evaluate and analyze current practices, develop new criteria, and may include the provision of some leadership and guidance to others in the application and planning of skills.	An understanding of methods of enquiry or creative activity, or both, in their primary area of study that enables the student to: a) Evaluate the appropriateness of different approaches to solving problems using well established ideas and techniques; b) Devise and sustain arguments or solve problems using these methods.	An understanding of methods of enquiry or creative activity, or both, in their primary area of study that enables the student to: a) Evaluate the appropriateness of different approaches to solving problems using well established ideas and techniques; b) Devise and sustain arguments or solve problems using these methods; c) Describe and comment upon particular aspects of current research or equivalent advanced scholarship.	a) A conceptual understanding and methodological competence that: i. Enables a working comprehension of how established techniques of research and inquiry are used to create and interpret knowledge in the discipline; ii. Enables a critical evaluation of current research and advanced research and scholarship in the discipline or area of professional competence; iii. Enables a treatment of complex issues and judgements based on established principles and techniques; b) On the basis of that competence, has shown at least one of the following: i. The development and	a) The ability to conceptualize, design and implement research for the generation of new knowledge, applications or understanding at the forefront of the discipline, and to adjust the research design or methodology in the light of unforeseen problems; b) The ability to make informed judgements on complex issues in specialist fields, sometimes requiring new methods; c) The ability to produce original research or other advanced scholarship of a quality to satisfy peer review and to merit publication.

ipior	1 Certificate I	2 Certificate II	Certificate of 3 Apprenticeship	Certificate of 4 Qualification	5 Certificate III	6 Diploma I	7 Diploma II	8 Advanced Diploma	9 Post-Diploma Certificate	10 Baccalaureate/Bachelor's Degree	11 Baccalaureate/Bachelor's Degree Honours	12 Masters Degree	13 Doctoral Degree
ess a kledge	An understanding of the limits of their own knowledge and skill level and an appreciation of the methods and techniques that they are not qualified to employ.	others as part of a group or team; c) Undertake further training and develop new skills within a structured and managed environment.			c) Undertake further training and develop new skills within a structured and managed environment					social responsibility.	disciplines and to select an appropriate program of further study; c) Behavior consistent with academic integrity and social responsibility.	procedures for responsible conduct of research; d) The ability to appreciate the broader implications of applying knowledge to particular contexts.	responsible conduct of research; d) The ability to appreciate the broader implications of applying knowledge to particular contexts.
										An understanding of the limits to their own knowledge and skill, and how this might influence analysis and interpretations.	An understanding of the limits to their own knowledge and skill, and how this might influence analysis and interpretations.	Cognizance of the complexity of knowledge and of the potential contested nature of other interpretations, methods and disciplines.	An appreciation of the limitations of one's own work and discipline, of the contested nature of knowledge, and of the potential contributions of other interpretations, methods, and disciplines.

Ministry of Training, Colleges and Universities, 2009a)

Appendix E – Dublin Descriptors

Cycle	Knowledge and understanding
1 (Bachelor's)	[Is] supported by advanced text books [with] some aspects informed by knowledge at the forefront of their field of study.
2 (Master's)	provides a basis or opportunity for originality in developing or applying ideas often in a research* context.
3 (Doctorate)	[includes] a systematic understanding of their field of study and mastery of the methods of research* associated with that field.

	Applying knowledge and understanding
1 (Bachelor's)	[through] devising and sustaining arguments
2 (Master's)	[through] problem solving abilities [applied] in new or unfamiliar environments within broader (or multidisciplinary) contexts.
3 (Doctorate)	[is demonstrated by the] ability to conceive, design, implement and adapt a substantial process of research* with scholarly integrity. [is in the context of] a contribution that extends the frontier of knowledge by developing a substantial body of work some of which merits national or international refereed publication ..

	Making judgments
1 (Bachelor's)	[involves] gathering and interpreting relevant data.
2 (Master's)	[demonstrates] the ability to integrate knowledge and handle complexity, and formulate judgements with incomplete data.
3 (Doctorate)	[requires being] capable of critical analysis, evaluation and synthesis of new and complex ideas.

	Communication
1 (Bachelor's)	[of] information, ideas, problems and solutions.
2 (Master's)	[of] their conclusions and the underpinning knowledge and rationale (restricted scope) to specialist and non-specialist audiences (monologue).
3 (Doctorate)	with their peers, the larger scholarly community and with society in general (dialogue) about their areas of expertise (broad scope).

	Learning skills.
1 (Bachelor's)	have developed those skills needed to study further with a high level of autonomy.
2 (Master's)	study in a manner that may be largely self-directed or autonomous.
3 (Doctorate)	expected to be able to promote, within academic and professional contexts, technological, social or cultural advancement.

(European Union 2004, Joint Quality Initiative)

Appendix F – Bologna Diploma Supplement

Diploma Supplement

This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of the supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (diplomas, degrees, certificates etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.

1 INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1.1 Family name(s)

SPARK

1.2 Given name(s)

ISABRIGHT

1.3 Date of birth (day/month/year)

02 August 1984

1.4 Student identification number or code

X696969

2 INFORMATION IDENTIFYING THE QUALIFICATION

2.1 Name of qualification and (if applicable) title conferred

Bachelor of Science

2.2 Main field(s) of study for the qualification

International Business Management (North America)

2.3 Name and status of awarding institution

University of Wales

2.4 Name and status of awarding institution (if different from 2.3) administering studies

University of Wales Swansea

2.5 Language(s) of instruction/examination

English

3 INFORMATION ON THE LEVEL OF THE QUALIFICATION

3.1 Level of qualification

Bachelors Degree (1st Cycle Degree)

3.2 Official length of programme

4 years

3.3 Access requirements

Entry requirements are typically expressed in terms of the UCAS Tariff with the normal requirement between 240-300 points overall which might include the requirement of specific subject for specific schemes. A pass in one of a range of other qualification including Access courses and diplomas, BTEC qualifications, European Baccalaureate, International Baccalaureate would also be accepted.

4 INFORMATION ON THE CONTENTS AND RESULTS GAINED

4.1 Mode of study

Full time

4.2 Programme requirements

In order to satisfy the requirements of the programme, students must demonstrate that they have met the learning outcomes as outlined below.

4.2.1 Knowledge and understanding

a. Management and organisations and decision making therein.
b. Business finance and accounting procedures.
c. The human resource element and how people in industry and business are managed.
d. Business law
e. Marketing principles and management.
f. Quantitative and statistical procedures appropriate for business students.
g. Economics of the business environment.
h. Information technology and information systems in modern business.

4.2.2 Intellectual (thinking skills)

a. Think critically and logically about a wide range of subject material and be able to appreciate the inter-relatedness of the different specialisms within Business/Management.
b. Organise and present arguments/comparisons/justifications in a concise and coherent manner.
c. Formulate quantitative models for business scenarios and use mathematical and statistical skills to aid an understanding of the implications of the models for business practices.
d. Use their knowledge and understanding to assimilate and appreciate a posed problem and move to a considered solution.

4.2.3 Practical Skills (Subject-Specific)

a. Be competent in IT skills involving word and data-processing, the production of reports, presentation of quantitative charts and tables.
b. Be experienced in the use of the WEB and other search-based information retrieval systems for both primary and secondary research.
c. Be able to manage their time and their working environment in a manner to help plan ahead and meet deadlines.

4.2.4 Key skills

a. The production of a CV.
b. How to work effectively in a small group.

c. Produce a coherent written report and be confident in presenting the main content of the report orally.

4.3 Programme details and the individual grades/marks/credits obtained.

The University issues an official transcript to each student on graduation. The transcript which presents the full details of the study is given below.

HESA ID 0000022212511
Date of commencement of studies : 22 September 2003

Enrolled 2003/2004 - BSc, Business Studies with a year abroad Level 1 undergraduate

Location of Study : Singleton Campus

Level	Module	Title	Result	%	Credits Awarded	ECTS Credits
1	EBC110	Business Models and Computing Methods	62	P	10	5
1	EBC121	Computing for Business and Management (Visual Basics for Applications)	62	P	10	5
1	EBH121	Employee Relations	65	P	10	5
1	EBF111	Introductory Finance and Accounting	50	P	10	5
1	EBQ131	Business Mathematics	66	P	20	10
1	EBS121	Statistics for Business Studies	51	P	10	5
1	EC-103	Principles of Economics B	58	P	20	10
1	EBR121	Operations Management	76	P	10	5
1	EBM111	Marketing Principles	56	P	10	5
1	EBL111	Introduction to Law	62	P	10	5
		Total Credits Awarded :			**120**	**60**

Completed Level

Enrolled 2004/2005 - BSc, American Business Studies Level 2 undergraduate

Location of Study : Singleton Campus

Level	Module	Title	Result	%	Credits Awarded	ECTS Credits
2	EBC222	Data Mining and Knowledge Discovery	84	P	10	5
2	EBH213	Principles of Organisational Behaviour	64	P	10	5
2	EBL221	Business Law II	70	P	10	5
2	EBQ211	Maths for Business Studies II	89	P	10	5
2	EBR213	Production and Inventory Control	79	P	10	5
2	EBS221	Applied Statistics for Business	81	P	10	5
2	EC-245	Industrial Economics	71	P	10	5
2	EBR223	Decision Making in Business	83	P	10	5
2	EBR211	Resource Planning and Allocation	68	P	10	5
2	EBM221	Marketing Management	82	P	10	5
2	EBL212	Business Law I	62	P	10	5
2	EBC231	Management Models and Methods	84	P	10	5
		Total Credits Awarded :			**120**	**60**

Completed Level

Enrolled 2005/2006 - BSc, American Business Studies Intercalary/Sandwich year undergraduate

Location of Study : Distance learning whether abroad or in industry

Level	Module	Title	Result	%	Credits Awarded	ECTS Credits
S	EB-R01	Study Abroad (EBMS)	64	P	120	60
		Total Credits Awarded :			**120**	**60**

Continue to next academic year

Enrolled 2006/2007 - BSc, International Business Management (North America) Level 3 undergraduate

Location of Study : Singleton Campus

Level	Module	Title	Result	%	Credits Awarded	ECTS Credits
3	EBC315	E-Commerce	81	P	10	5
3	EBF301	taxation	93	P	10	5
3	EBF331	Financial Services	74	P	20	10
3	EBH322	Organisational Behaviour 2	70	P	10	5
3	EBM328	Global Strategic Marketing	85	P	10	5
3	EBR316	Strategic Analysis	75	P	10	5
3	EBR32D	Tactical Decision Tools	95	P	10	5
3	EBR330	International Business Management	80	P	20	10
3	EBR337	Project Management	79	P	20	10
		Total Credits Awarded :			**120**	**60**

Completed Course

Result Legend: P = Pass, CF=Condoned Fail, TF=Tolerated Fail, F=Fail, CP=Compensatory Pass, UP=Unfair Practice, NE=Not Entered. Level "E" not subject to Result Marking

Degree, etc. gained and date of Award

Qualified for : BSc in International Business Management (North America) (First Class Honours), 27 June 2007

Admitted to the degree on : 17 July 2007

4.4 Grading scheme and, if available, grade distribution guidance

First Class Honours	70-100%
Second Class Honours, First Division	60-69.99%
Second Class Honours, Second Division	50-59.99%
Third Class Honours	40-49.99%
Pass Degree	35-39.99%
Fail	0-34.99%

The class of Honours degree is normally determined using marks from modules attracting 240 credits (120 ECTS credits) which would have been pursued during Levels 2 and 3 (i.e. for full-time candidates Year 2 and the Final Year).
Marks of modules pursued during Level 2 (i.e. for full time candidates, the second year) would be given a weighting of 1.
Marks of modules pursued during Level 3 (i.e. for full time candidates the Final Year of study) would be given a weighting of 2.
Marks attained during the year abroad/ in industry may be used as a ratchet on the overall average of Level 2 modules. The proportion would be .25 for Level S and .75 for Level 2, provided that the overall average mark of Level S was greater than the overall average mark for Level 2.
(Level S is the Intercalary Year spent abroad or on an industrial placement typically after the successful completion of Level 2.)
The overall average mark is arrived at by means of a formula and supplementary rules printed annually in the Academic Handbook.

4.5 Overall classification of the qualification

First Class Honours

5 INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1 Access to further study

Access to postgraduate study (2nd Cycle Degree), normally with second class honours or above.

5.2 Professional status

Not applicable

6 ADDITIONAL INFORMATION

6.1 Additional information

The University of Wales Swansea was established in 1920. It offers a full range of degrees, including those at Bachelors level (First Cycle), Taught Master's (Second Cycle), and Research degrees, leading to Master and Doctor awards. It is a member of the national University of Wales, which itself was established in 1893.

Swansea has more than 12 000 full and part-time students, of whom approximately 1200 are Research students. It offers a broad range of subjects, including Medicine and Health Science, Law, Engineering, key Science disciplines, Business and Economics, Media and Communications Studies, Psychology, Humanities, Modern Languages, etc.

At the Research degree level, each department offers Doctorate degrees and students are supervised by staff who are leading researchers in their disciplines. Over 90% of the academic staff are active in research, with some departments at the University being given the highest grading for research excellence through the national Research Assessment Exercise.

Swansea has developed strong links with other Euorpean universities and is a member of the European Universities Association.

6.2 Further information sources

University of Wales Swansea Academic Handbook for Undergraduate Students/ University of Wales Swansea Academic Handbook for Taught Masters Level Schemes (from the appropriate year of study); University of Wales Swansea Undergraduate Prospectus, University of Wales Swansea Postgraduate Prospectus; University of Wales Swansea website: www.swan.ac.uk

7 CERTIFICATION OF THE SUPPLEMENT

7.1 Date

19 September 2007

7.2 Signature

H.D.L. Morris

7.3 Capacity

Academic Registrar

7.4 Official stamp or seal

8 INFORMATION ON THE NATIONAL HIGHER EDUCATION SYSTEM

Please note: During the implementation period of the framework for Higher Education Qualifications (FHEQ), the levels used at University of Wales Swansea, which appear in Section 4.3 of this document, do not correspond with those described in the attached addendum, which provides information on the Higher Education System in England, Wales and Northern Ireland. As clarification, the levels are as follows, with Swansea's levels appearing first and with the corresponding FHEQ levels appearing in brackets: Level 1 (4); Level 2 (5); Level 3 (6); Level M (7)

(Europass, 2009b)

Appendix G – Europass Certificate Supplement

CERTIFICATE SUPPLEMENT *

1. TITLE OF THE CERTIFICATE (EN)
Advanced Certificate Craft - Electrical

2. TRANSLATED TITLE OF THE CERTIFICATE (EN)
Advanced Certificate Craft - Electrical This translation has no legal status.

3. PROFILE OF SKILLS AND COMPETENCES

To be awarded this certificate the holder will have demonstrated formally through a process of assessment, administered both on and off the job, an ability to:

- Comply with national building regulations, national electrical installation rules and with national legislation related to occupational health, safety and the environment.
- Interpret electrical equipment manufacturers' specifications and drawings to determine correct installation, maintenance, test and repair procedures
- Interpret project plans, specifications and drawings to determine the location, types and quantities of materials required to install electrical wiring systems, equipment, controls and protective devices
- Plan the sequence of operations, select and use materials, hand and power tools and work techniques that are appropriate to a range of electrical installation and maintenance projects
- Use test instruments to locate malfunctions in electrical and electromechanical systems and equipment.
- Work alone or as part of a team to ensure that project deadlines are met

4. RANGE OF OCCUPATIONS ACCESSIBLE TO THE HOLDER OF THE CERTIFICATE

- Electrician

* **Explanatory note:** *This document is designed to provide additional information about the specified certificate and does not have any legal status in itself. The format of the description is based on the following texts: Council Resolution 93/C 49/01 of 3 December 1992 on the transparency of qualifications, Council Resolution 96/C 224/04 of 15 July 1996 on the transparency of vocational training certificates, and Recommendation 2001/613/EC of the European Parliament and of the Council of 10 July 2001 on mobility within the Community for students, persons undergoing training, volunteers, teachers and trainers. More information on transparency is available at:* www.cedefop.eu.int/transparency

5. OFFICIAL BASIS OF THE CERTIFICATE	
Name and status of the body awarding the certificate **Further Education and Training Awards Council** (FETAC) FETAC is **the single statutory national awarding body** for further education and training in Ireland.	**Name and status of the national/regional authority providing accreditation/recognition of the certificate** **Further Education and Training Awards Council** East Point Plaza, East Point Business Park, Dublin 3, Ireland T: +353-1-8659500 F: +353-1-8650067 Web: http://www.fetac.ie/ Email: information@fetac.ie
Level of the certificate (national or international) This Certificate is a Major award at **Level 6** in the Irish National Framework of Qualifications	**Grading scale / Pass requirements** A **Pass Grade** is awarded if all the skill and knowledge assessments were passed. A **Merit Grade** is awarded if the pass standard is exceeded. A minimum score of 70% is required to pass knowledge assessments All essential criteria must be demonstrated to pass skills assessments.
Access to next level of education/training This Certificate may provide access and transfer to other awards at Level 6 in the Irish National Framework of Qualifications and or progression to awards at a higher framework level.	**International agreements** The Irish and United Kingdom awarding and qualifications authorities have concluded an exercise to enable broad comparisons to be drawn between qualifications and their levels in Ireland, Scotland, England, Wales and Northern Ireland
Legal basis Qualifications (Education & Training) Act 1999; Industrial Training Act 1967; Apprenticeship Act 1959	

6. OFFICIALLY RECOGNISED WAYS OF ACQUIRING THE CERTIFICATE
Statutory Apprenticeship System and the Advanced Certificate
The Statutory Apprenticeship System is the recognised means by which people are trained to become proficient in over twenty designated craft occupations in Ireland. Apprenticeship training is organised and controlled by FAS (the National Training and Employment Authority) in co-operation with the Department of Education and Science. Apprenticeship training is based on pre-defined standards developed jointly by education and training providers and industry partners. Training generally lasts for **4 years**, and is structured in seven alternating phases. Four of these training phases are delivered on-the-job by employers and three are delivered off-the-job by State funded training centres or colleges. Successful completion of each phase is mandatory and is measured through formal assessments of skill and knowledge. It is the accumulation of the results of these assessments that lead to the award of the Advanced Craft Certificate.
Entry requirements
Those entering into apprenticeship training must be at least 16 years of age and have passed the Junior Certificate examination administered by the State Examinations Commission or a comparable examination (National Framework of Qualifications Level 3).
Additional information
More detailed information about Europass, FETAC, and the National Framework of Qualifications is set out on the following pages.

EUROPASS

Background to Europass
Europass was established in 2004 by a Decision of the European Parliament and the Council on a single transparency framework for qualifications and competences. Europass aims to facilitate the mobility of European learners and workers by making their skills and qualifications more easily understood.

Europass consists of a portfolio of five standardised documents, these are.

- Europass Curriculum Vitae
- Europass Language Passport
- Europass Mobility
- Europass Diploma Supplement
- Europass Certificate Supplement

Each of the documents has been designed in such a way as to help people chronicle their skills and competences in a coherent manner, whether they are planning to enroll in a programme of education and training, looking for a job, or getting experience abroad.

What is the Europass Certificate Supplement?
The document that you are currently reading is a Europass Certificate Supplement. It is issued to people who hold a vocational education and training award certificate by the body that issued the certificate.

The Europass Certificate Supplement aims to make the award certificate more easily understood, especially by employers and learning institutions by providing information that is additional to that provided on their award certificate. In the main, this information relates to -

- the awarding status of the body that issued the award
- the skills and competences acquired by ALL holders of the award
- the level of the award in the national awarding system
- the typical entry requirements to programmes that lead to the award
- the typical employment or learning opportunities that are accessible to holders of the award

Who will benefit from the information provided in the Europass Certificate Supplement?
The information provided in the Europass Certificate Supplement will benefit award holders, employers, education and training providers and guidance councillors:

- award holders will be able to communicate their qualifications and competences in an effective way
- employers will find the qualifications and competences of job-seekers easier to understand
- education and training providers and guidance councilors will find it easier to provide accurate advice to award holders regarding suitable learning opportunities

The Further Education and Training Awards Council

Background to FETAC
FETAC is the single statutory national awarding body for the further education and training sector in Ireland. It was established by the Qualifications (Education and Training) Act 1999 and is funded by the National Qualifications Authority of Ireland (NQAI) through the Department of Education and Science.

FETAC Standards and Quality Assurance
FETAC has specific responsibility for setting standards and making awards at Levels 1 to 6 of the National Framework of Qualifications (NFQ). These awards provide access to employment and to further and higher education and training opportunities in Ireland.

FETAC develops national standards of skill, knowledge and competence for its awards in consultation with its industry, education and training partners. It then quality assures the education and training providers that offer its awards.

Providers must satisfy FETAC that they have the necessary personnel and facilities to develop and deliver efficient and effective programmes to learners.

Learners must demonstrate through a process of assessment that they have acquired pre-defined national standards of skill, knowledge and competence that underpin FETAC awards.

All providers are quality assured by FETAC.
In the main, programmes that lead to FETAC awards are offered by State funded education and training providers. Private providers and companies that offer work based training also provide programmes.

What awards does FETAC offer?
FETAC sets standards and issues awards at NQF Levels 1 to 6 in the following fields of learning

- Business & Administration
- Agriculture, Science & Computing
- Construction/Built Environment
- Engineering & Manufacturing
- Education, Health & Welfare
- Tourism, Hospitality & Sports
- Services
- Core Skills, Languages & General Studies
- Arts, Crafts & Media

How does FETAC contribute to EUROPASS?
FETAC contributes to Europass by issuing Certificate Supplements for its awards.
Award holders, employers, education and training providers and guidance councillors can use this information to clarify the standards that underpin FETAC awards.

The National Framework of Qualifications

Background to the National Framework of Qualifications
The Qualifications (Education and Training) Act 1999, proposed the development of a National Framework of Qualifications, based on standards of knowledge, skill and competence, i.e., what a person knows, can do and understands at a given level.

The Act focused on issues such as the establishment of consistent standards in education and training, the promotion of quality, increasing access, transfer and progression opportunities and being able to recognise and compare qualifications gained both in Ireland and abroad.

The National Framework of Qualifications (NFQ) was developed by the National Qualifications Authority of Ireland (NQAI) and was launched in 2003. NQAI is an agency of the Department of Education and Science and the Department of Enterprise, Trade and Employment.

NQAI is responsible for maintaining the NFQ and for promoting and facilitating greater access to education and training and progression through the NFQ.

Structure of the National Framework of Qualifications
The 'fan diagram' below illustrates the 10 levels of the NQF. The Framework allows for recognition of all levels of learning, from the very initial stages to the most advanced, it is a framework for lifelong learning. Each level is based on nationally agreed standards of knowledge, skill and competence.

The diagram indicates the names of bodies whose awards are included in the NQF. These are the bodies that have a statutory remit to make awards in Ireland.

Also set out are the titles of the MAJOR awards that are included in the NFQ. Major awards recognise the acquisition of a significant volume of learning.

In addition to major awards, the NFQ also includes hundreds of other awards that recognise smaller volumes of learning. In general, these awards are components of or are otherwise related to major awards. They are excluded from the diagram to aid clarity.

How are NFQ awards developed and delivered?
To be included in the NFQ awards must be quality assured. This means that they must meet nationally agreed standards and are subject to internal and external quality reviews to ensure that they maintain those standards.

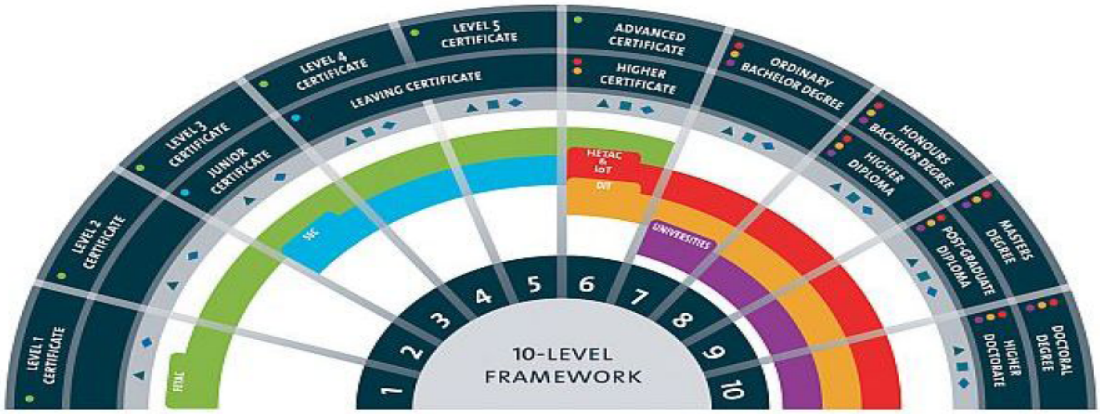
Awards are developed by the awarding bodies and are made available through programmes delivered by learning providers.

Awarding bodies set the standards for their awards, then validate and monitor the programmes developed and delivered by providers that lead to these awards.

Providers deliver programmes through Ireland's school, further education and training and higher education and training systems.

Benefits of the National Framework of Qualifications
The NFQ facilitates the understanding and recognition of Irish awards both nationally and internationally by

- allowing learners to compare and contrast awards and to plan their education and training and career progression.
- helping employers to recognise and understand the level and standard of Irish awards by acting as a tool for identifying 'appropriate fit' awards for specific roles
- providing a way of comparing Irish awards with awards gained in other national qualifications systems thus facilitating learner and worker mobility



KEY **FETAC** - Further Education and Training Awards Council **SEC** - State Examinations Commission **HETAC** - Higher Education and Training Awards Council, **IoT -Institutes of Technology** (make their own awards at specified levels under Delegated Authority from HETAC) **DIT** - Dublin Institute of Technology Universities

AWARDS IN THE FRAMEWORK **Major Awards** are the principal class of awards made at a level **Minor Awards** are for partial completion of the outcomes of a Major Award **Supplemental Awards** are for learning that is additional to a Major Award **Special Purpose Awards** are for relatively narrow or purpose-specific achievement

(Europass, 2009c)

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Higher Education
Quality Council
of Ontario
An agency of the Government of Ontario