

Generic Competency Frameworks: A Brief Historical Overview

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Significant efforts have now been made to identify the generic competencies required to succeed across different workplace contexts. The aims of this paper were to: (i) outline factors that contributed to the increased demand for generic competencies seen over the last three decades; and (ii) review the early generic competency frameworks developed in Australia, New Zealand, the US, Canada, the UK, and other European countries. It is concluded that whilst there were significant areas of commonality amongst the frameworks, regional differences were also apparent. The paper provides a historical context for more recent research into the generic competencies that should be emphasized within tertiary-level education and training curricula.

Introduction

The past three decades have witnessed dramatic changes in the types of skills that employees require to succeed in the workplace. New technologies have provided individuals with the means to access and distribute specialised information quickly and easily, reducing demand for skills associated with the storage and retrieval of detailed technical information (e.g., memorisation and classification for archival purposes). In contrast, the ability to source, process, manage, communicate and apply knowledge across diverse contexts has come to be seen as critical for workplace success. Employers who operate in global labour markets now seek employees who possess not only high-level technical or ‘job-specific’ competencies, but also, high levels of what are known as ‘generic competencies’.

As noted by Male (2010), the term *generic competencies* has created considerable confusion in the research literature. In

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general, however, the term is used to refer to competencies that can be applied across different job and life contexts (e.g., NCVER, 2003). For example, most employees are now expected to exhibit a ‘global mindset’, which includes the ability to look at the broader context, be flexible and undertake a variety of different tasks (Kerka, 1993). These competencies are not specific to any given job or work role – they are generic in that they are critical to success across different types of jobs. Other frequently cited examples of generic competencies include skills such as communication, problem-solving and conflict resolution.

The overarching goal of this paper was to provide a brief overview of early efforts to identify the generic competencies required of workers in global labour markets. The paper thus provides a historical backdrop for the more recent work reported by others in this issue. As much of the initial work on generic competencies emanated from the Vocational Education and Training (VET) sectors of Western countries, the review necessarily focuses on frameworks relevant to these sectors. In general, however, the competencies identified in early VET frameworks have been incorporated directly into those developed within other education levels (e.g., in the university sector). The specific aims of the paper were to: (i) outline factors that contributed to the increased demand for generic competencies seen over the last three decades; and (ii) review the early generic competency frameworks developed in Australia, New Zealand, the US, Canada, the UK, and other European countries.

Increased Demands for Generic Workplace Competencies: Contributing Factors

Rapid transformations of the world economy over the last three decades have precipitated profound changes to labour markets across the globe. The term *globalisation* has been used to refer to the increased mobility of goods, services, labour, technology and capital seen during this period (Government of Canada, 2002). Prior to the mid 1980s, politicians, policy-makers and business analysts focused primarily on their respective national economies. For many countries (particularly Australia), this meant a strong emphasis on centralised agriculture and manufacturing industries.

The education and training sectors of these countries, by implication, typically focused on developing labour forces that could perform specific duties within well-defined occupations.

Globalisation brought a shift away from agriculture/manufacturing toward global white-collar service industries. Employees have since become part of a knowledge-based global labour market, interacting and competing routinely with other employees from around the world. By 2001, approximately 56% (4.9 million) of the Australian workforce was employed in global labour markets (Maglen, 2001). Wills (1993) highlighted four global trends in production which, for many developed countries, contributed to the demise of the ‘assembly lines’ of yesteryear. These were: (i) enhanced flexibility to accommodate both customised products and rapid, continuous changes in product development; (ii) increased use of new technologies; (iii) higher levels of commitment to customer satisfaction; and (iv) expansions of capital to labour ratios. In short, the characteristics of the ‘new economy’ have previously been characterised as conforming to the ‘four Fs’: focused, fast, flexible and friendly.

Globalisation also necessarily increased levels of demand for workers able to keep pace with the rapid changes that the new economy brought. Employers operating in global labour markets now sought workers who had *broadband skills*, or, using the terminology of this paper, *generic competencies*. In the literature, these are alternatively labelled *core skills*, *employability skills*, *life skills*, *soft skills*, *transferable skills*, *workplace competencies* and *key competencies*. Despite differences in the labels assigned to these competencies, these generally refer to skills and attributes that are useful across different job and life contexts. For the sake of clarity, the term *generic competencies* is used throughout the remainder of this paper.

Owing to shifts in the workplace demands of the new economy, employees with excellent generic competencies quickly found themselves in higher demand than those with advanced, yet subject-specific, technical skills. This trend was highlighted in a study by Richens and McClain (2000), in which 400 Australian employers from a variety of industries indicated the skills they

considered most important for workplace success. Results showed that employers favoured workers with generic competencies such as sound interpersonal awareness over those with strong technical competence. Owen, Shelton, Stevens, Nelson-Christinedaughter and Heineman (2000) reported similarly that ‘soft skills’ such as communication and interpersonal style were amongst the most important competencies sought by workplace employers.

Given that employers in today’s economy tend to favour individuals with good generic competencies, nations that focus on developing such competencies place their citizens at a distinct advantage. From an economic perspective, generic competencies increase the competitiveness, efficiency and productivity of the labour market (Rychen & Salganik, 2000). This view was echoed more recently in a report published by the *World Economic Forum* in 2008, which stressed in its conclusions that countries should aim through their education systems to produce workers who are able quickly to adapt to changes in global markets.

Early Generic Competency Frameworks: A Selective Review

In response to the trends described above, the late 1980s and 1990s saw countries across the world place the identification of generic workplace competencies on their national agenda (Han & Chapman, in preparation). In the United States (US), for example, a report prepared by the Secretary’s Commission on Achieving Necessary Skills (SCANS) in 1990 outlined the skills needed by American workers to be successful in a global market (Office of Policy and Research, OPR, 2000). In Australia, the 1992 Mayer Committee report provided a set of competencies considered essential in preparing young people for employment. In 1994, Canada then initiated its Essential Skills Research Project (ESRP) to establish a framework for identifying the skills that employees needed for work, learning and living.

Frameworks from Australia

Research on generic competencies in Australia began in earnest during the mid 1980s, particularly with the work of the Karmel

Committee in 1985. In its report on how the education system could help to ensure the international competitiveness of the Australian labour market, the Committee recommended that education should prepare students both for higher learning and for employment through the teaching of 'common skills'. These included managing information, working in teams and communicating effectively. A later report on the Australian VET sector from the Australian Education Council Review Committee (Finn, 1991) corroborated these views, recommending that VET should aim to produce competitive and flexible employees by focusing more on generic competencies than on subject-specific technical skills (NCVER, 2003).

Based on the recommendations of the Finn (1991) report, the Mayer Committee (Australian Education Council - Mayer Committee, 1992), in consultation with representatives from industry and the education sector, then developed a set of seven competencies deemed essential for preparing entry-level employees for the workforce. Labelled the *Mayer key competencies*, this set included:

1. Collecting, analysing, and organising information;
2. Communicating ideas and information;
3. Planning and organising activities;
4. Working with others and in a team;
5. Using mathematical ideas and techniques;
6. Problem-solving; and
7. Using technology.

In the late 1990s, various industry groups began conducting their own research into the skills required for workplace success. In one such project, Crowley, Garrick and Hager (2000) examined the role of generic competencies in the building and construction industry. Interviews were conducted with a diverse cross-section of employees from various building sites across New South Wales, and employees asked to describe their day-to-day duties. Panel sessions were also conducted with key industry stakeholders. Results indicated that competencies such as communicating ideas; teamwork; language and literacy; planning;

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and collecting and synthesizing information were essential for employees in this industry (Crowley, Garrick & Hager, 2000).

At around the same time, the Australian Industry Group (see Allen Consulting Group, 2006) commissioned a study on generic competencies based on 350 companies from a diverse range of industries, including manufacturing, information technology (IT) and construction. Interviews conducted with representatives from each company indicated that, to remain competitive in the current marketplace, businesses required employees with basic skills (i.e., literacy and numeracy); interpersonal skills (i.e., communication and teamwork); and positive personal attributes and values (i.e., responsibility and a capacity to learn).

Two further studies were conducted by the National Centre for Vocational Education Research (NCVER). In the first, Dawe (2002) examined approaches for incorporating generic competencies into VET packages. Interviews were conducted with stakeholders from ten industry sectors, including administration; entertainment; agriculture; hospitality; the Australian Red Cross Blood Service; IT; construction; engineering; community services; and retail. Results indicated that three competencies were deemed essential across all industry sectors: (i) communication; (ii) teamwork; and (iii) knowledge of health, safety and security procedures. The majority also viewed customer service, grooming, work ethic and professional behaviour as vitally important.

In the second study conducted by the NCVER, Clayton, Blom, Meyers and Bateman (2003) conducted interviews with staff from six Australian training organisations (Centrelink; the Spencer Institute of TAFE; the University of Melbourne's Burnley College; Campaspe College of Adult Education; and two Senior Secondary Colleges from the Australian Capital Territory). Results indicated that whilst the Mayer key competencies were incorporated into each organisation's training package, a number of additional skills were deemed essential for workplace success, including personal values and attributes, and the acceptance of diversity in the workplace (i.e., cultural understanding).

More recently, the Australian Chamber of Commerce and Industry and the Business Council of Australia (ACCI/BCA) (2002) undertook a comprehensive study to identify the skills required by employees in the changing economy. The group not only reviewed relevant literature from Australia and overseas, but also conducted interviews and a validation study with individuals from a variety of industries. The competency framework proposed by the ACCI/BSC went beyond the scope of the Mayer key competencies by incorporating both generic ‘employability’ skills and personal attributes. According to the ACCI/BCA (p.3), employability skills are “...skills required not only to gain employment, but also to progress within an enterprise so as to achieve one’s potential and contribute successfully to enterprise strategic directions”. The eight employability skills in the ACCI/BCA framework were:

1. Effective communication;
2. Teamwork skills;
3. Problem-solving;
4. Planning and organising;
5. Self-management;
6. Learning skills;
7. Initiative and enterprise, and
8. Technology skills.

The framework included a number of personal attributes deemed essential for workplace success including loyalty, commitment, reliability, adaptability, positive self-esteem and honesty. A number of industries have since adopted the ACCI/BCA framework to guide their VET programs (NCVER, 2003).

Frameworks from New Zealand

In New Zealand, work on defining generic competencies began with the Review of the Core Curriculum for Schools in 1984. Further work was then done and published in government reports, including the *Curriculum Review* report, published in 1985-87, the *Learning and Achieving* report, published in 1986; and the Department of Education’s draft *National Curriculum* statement, published in 1988 (see Ministry of Education, 1993). The main focus of these reports was to provide guidelines for developing a curriculum that enabled learners to develop both basic skills and

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attributes that would help them relate well to others and function effectively in the community (Kelly, 2001).

The Education Amendment Act was then passed in 1990, and in 1993, the New Zealand Curriculum Framework (NZCF) appeared. This framework was developed from recommendations proposed in the 1990 *Tomorrow Standards* and *Tomorrow's Skills* reports. The NZCF provided an overall framework for the New Zealand curriculum and defined eight sets of 'essential skills' deemed necessary to allow students to reach their full potential in society. These were (Kelly, 2001):

1. Communication;
2. Numeracy;
3. Information management;
4. Problem-solving;
5. Self-management and competitiveness;
6. Social and co-operative skills;
7. Physical skills; and
8. Work and study skills.

Between 2000-2002, the New Zealand Ministry of Education (MOE) then engaged in a 'curriculum stocktake', to review the curriculum reforms that had taken place in the early 1990s, and determine the extent to which the 'essential skills' had been promoted and assessed in the education sector. In response to the recommendations of this report, it was decided that the NZCF required modification to reflect adequately the unique culture of the New Zealand people. The Curriculum/Marautanga Project was then initiated in 2003 to refocus and reframe the national curriculum, and to provide teachers with the flexibility required to foster students' development of the essential skills outlined.

To achieve the objectives of the Curriculum/Marautanga project, a number of key stakeholders (i.e., lecturers, principals, teachers, students) were invited to participate in discussion seminars to identify the skills needed for successful school to work transitions. At the same time, the MOE commissioned the construction of a position paper (Brewerton, 2004) which summarised suitable conceptual frameworks for identifying the generic competencies

needed by workers across different fields. The OECD's DeSeCo competency framework was subsequently adapted and extended to the New Zealand context (Rutherford, 2005).

In March 2005, a draft version of the key competency framework was distributed to educators from the public school sector to obtain feedback on the suitability of the proposed framework for practice. The resulting framework was divided into five groups of generic competencies:

1. Thinking (e.g., thinking critically and being creative);
2. Making meaning (e.g., interpreting and exploring);
3. Participating and contributing (e.g., adopting a holistic point of view);
4. Self-management (e.g., planning and goal setting); and
5. Relating to others (e.g., leading and negotiating).

Surveys conducted at the same time by the New Zealand Employment Service (see Kelly, 2001) showed that over 80% of the competencies deemed by business representatives to be essential for entry-level employees were interpersonal in nature. Technical skills were viewed as less important in these surveys, which indicated that, from an industry perspective, the key competencies required of entry-level applicants were:

1. Communication (e.g., writing, reading and speaking);
2. Cooperation (e.g., teamwork and relating to others);
3. Computer literacy (e.g., accessing electronic information);
4. Creativity (e.g., thinking laterally); and
5. Critical thinking (e.g., evaluating and synthesising).

Frameworks from the United Kingdom

By the late 1970s, education and training programs in the United Kingdom (UK) had been criticised for failing to provide school leavers with the skills they needed to become successful in the workforce. Youth unemployment rates were high, and industry representatives complained that entry-level employees were frequently not 'work ready'. It was during this period that the need to identify and develop a set of generic workplace competencies first became apparent (Hodgson & Spours, 2002). The general

consensus amongst policy makers and educators in the UK was that, given changes to the global economy, the promotion of generic competencies in young people would ultimately produce a nation of highly skilled workers (Turner, 2001).

Although there was general agreement that the promotion of generic competencies in the UK was of vital importance, deciding exactly which competencies should be included in a national framework, and agreeing upon how these skills should be developed and accredited, proved more difficult (Hodgson & Spours, 2002). During the 1980s, a series of government initiatives (e.g., the *Enterprise in Higher Education* scheme) was launched to improve the entrepreneurial skills of school leavers. Rather than constructing a tangible list of skills needed by young people to enable them to be successful in the workplace, these programs sought to team school leavers with industry partners so they could develop their cognitive and inter/intra-personal abilities in a real-world context (Turner, 2001).

By the 1990s, it was becoming increasingly clear that to develop effective VET programs, schools and colleges in the UK needed a national competency framework clearly outlining the skills required by young people to perform well in the workplace. Numerous studies were conducted to address this need. Results from these studies were summarised in a number of key publications, including the *Partnerships with People* report published in 1997; the *Towards Employability* report published in 1998; the 1998 *In Search of Employability* report; and the *Attributes of Youth* report which appeared in 1998 (Turner, 2001).

It was, however, Dearing's *Review of Qualifications for 16-19 Year Olds* (see NCIHE, 1997) that had the greatest impact on Government policy, facilitating the *Curriculum 2000* reforms and resulting in the construction of a 'Key Skills National Qualification' in September 2000. Similar to the competency frameworks developed in Australia and New Zealand, the Key Skills National Qualification paid close attention to competencies that were relevant across different contexts (i.e., skills that have an impact on an individual's learning, career and personal life).

The British model comprised three basic competencies: numeracy, IT, and communication. Each was defined at five levels, ranging from: *Level 1 – foundation* to *Level 5 - professional/managerial* (NCVER, 2003). In addition to the three basic skills, three ‘wider key skills’ were promoted by the British Government as important to ensure that individuals remained employable throughout their lives. Whilst not formally part of the Key Skills National Qualification, these wider key skills included teamwork, a commitment to life-long learning, and problem-solving skills (Turner, 2001).

More recently, the Department of Trade and Industry (DTI) commissioned the Centre for Education and Industry (CEI) (located at Warwick University), to conduct an independent study investigating the skills needed by entry-level employees to create a ‘nation of entrepreneurial workers’. The competency framework proposed by the CEI was less pragmatic than that of the Key Skills Qualification, in that it places a greater emphasis on inter- and intra-personal skills (e.g., self-confidence, versatility, commitment and resourcefulness), rather than focusing on cognitive abilities (Turner, 2001).

Notably, the Scottish Qualifications Authority (SQA) developed its own set of generic competencies during this time, independent of the work conducted in England and Wales. Referred to these as ‘core skills’, the Scottish framework encompassed abilities believed to allow Scottish citizens to succeed in life as a whole, and more specifically, in employment. Whilst there are many similarities between the SQA core skills and the British Key Skills/Wider Key Skills frameworks, the SQA framework focused on only five essential skills (Welsh & Canning, 2003):

1. Communication;
2. Problem-solving;
3. Personal skills;
4. Numeracy; and
5. Information technology.

Frameworks from Other European Countries

After the Second World War, European countries became increasingly conscious of the types of skills and knowledge required by their citizens to ensure economic growth and prosperity. Advances in science and technology, together with a push for more internationally competitive markets, required school leavers and those returning to employment after several years to possess a set of generic competencies to ensure their value in the global economy. Little was known about European nations' work in this area until the late 1990s, owing to the vastness and diverse nature of the region (Gibbons-Wood & Lange, 2000).

In 2001, however, the European Commission appointed a working group of national experts to provide information about each nation's definition of generic competencies (termed *key competencies* in this work) in education. The Eurydice European Unit accordingly constructed and distributed a questionnaire to all European national units including those in Austria, Belgium (French, German and Flemish communities), Denmark, France, Finland, Germany, Greece, Italy, Luxembourg, the Netherlands, Northern Ireland, Portugal, Spain, Sweden, Northern Ireland and the UK. The focus of the survey was on identifying the skills and knowledge required by school leavers to ensure their success in life as a whole, not just in the working arena.

Results of the European Commission study showed that all nations supported the development of competencies for school leavers, with nations falling into one of three groups (Eurydice, 2002):

- *Group 1* – Explicit reference to the development of generic (key) competencies in the general curriculum was made. In this group were the Belgium-French community, Portugal, and the UK (excluding Ireland).
- *Group 2* – Explicit reference to the development of *general* competencies, rather than generic or key competencies, was made. Included in this group were Austria, the Belgium-German community, the Belgium-Flemish community, Finland, France, Germany, Greece, Ireland and Northern Ireland.

- *Group 3* – Implicit reference to the development of a set of skills was made, without specific use of the term ‘competence’. Eurydice (p. 29) stated that “the fact that some countries do not employ this term ... must not be taken to mean that their education systems are not concerned with such competencies. Several countries in which the term ‘key competence’ is not part of educational terminology have nevertheless identified a select list of competencies whose development is considered of paramount importance”. Countries in the latter group included Denmark, Italy, Spain and Sweden.

In the European Commission study, the number of competencies identified varied across nations, and the UK (excluding Ireland) was the only respondent to have incorporated generic competencies as separate from subject-specific competencies in the curriculum. Importantly, however, all European countries, whether implicitly or explicitly, had similar subject-specific units, encouraged critical and creative thinking, and promoted working in teams. Amongst countries that identified a set of generic or key competencies, communication, working with others and problem-solving were common to all (Eurydice, 2002).

At around the same time, the European Council met in Lisbon in 2000 to discuss ways in which the European economy could become the most knowledge-based and competitive in the world. A working group was then established to identify the competencies that would allow Europe, as whole, to achieve this goal. The working group identified eight generic competencies essential to enhance the competitive status of Europe’s economy:

1. Communication in the mother tongue;
2. Communication in foreign languages;
3. Numeracy and competencies in mathematics, science and technology;
4. Information and communications technology (ICT);
5. Learning to learn;
6. Interpersonal and civic competencies;
7. Entrepreneurship; and
8. General cultural/cultural awareness.

Frameworks from the United States

In the late 1980s, several United States (US) based groups conducted research into the work-related skills of graduates entering the workforce. For example, the American Society for Training and Development (ASTD) conducted a national study that identified six ‘employability’ skills deemed essential for graduate success within the workplace (Overtoom, 2000):

1. Basic competency skills (e.g., writing and arithmetic);
2. Communication skills (e.g., speaking and presenting);
3. Adaptability skills (e.g., problem-solving);
4. Development skills (e.g., setting goals);
5. Group skills (e.g., resolving conflicts); and
6. Influencing skills (i.e., leading teams).

Further funding provided by the US Department of Labour was then used to build upon the ASTD’s seminal work. The Secretary’s Commission on Achieving Necessary Skills (SCANS) was established in 1990 with the goals of identifying the generic competencies that all individuals need to succeed in the workforce, and determine the extent to which school leavers were equipped with these skills. The commission comprised representatives from education, labour, business and the state government, who were given the task of defining a set of generic competencies that constitute ‘work-readiness’ in the new economy (Richens, 1999).

The work of SCANS was completed in 1992 with the development of the ‘SCANS skills’, a list of competencies defined as essential to create a highly competitive workforce. The SCANS skills include three foundation skills necessary for effective work:

1. Basic skills (e.g., reading and writing);
2. Thinking skills (e.g., decision making, problem-solving and reasoning); and
3. Personal qualities (e.g., responsibility, self-management and integrity/honesty).

Five competencies were also identified that ‘high-performance’ employees required for work (Packer & Brainard, 2003):

1. Interpersonal (e.g., leading and negotiating);
2. Systems (e.g., identifying trends and improving designs);
3. Planning/managing resources (e.g., using materials efficiently and distributing work effectively);
4. Information (e.g., using computers); and
5. Technology (e.g., applying technology and solving technological problems).

The SCANS skills quickly became the most widely utilised competency framework in the US, having a significant impact both on industry and on work-readiness training programs such as the School-to-Work Opportunities Act designed to facilitate smooth school-to-work transitions (Gbomita, 1997). The significance of the SCANS framework was underscored in 1998, when the School-to-Careers Professional Development Centre (STCPDC) in Las Vegas administered a questionnaire to a random sample of businesses in the Nevada area. The goal of this survey was to assess the validity of SCANS skills in relation to individuals entering the workforce. The researchers received over 400 responses, with 75% of businesses indicating that they considered the SCANS list to be adequate in defining the skills required of entry-level employees. Interestingly, resource and interpersonal competencies were identified as the skills most needed by workers (Richens, 1999).

Further efforts were then made to extend the SCANS framework in light of continuing technological and economic changes. For example, in the mid 1990s, the ACT received funding from both the US Department of Labor and the US Department of Education to establish a list of cross-occupational/key competencies needed by all employees. Behaviour statements, generalised across work contexts, were generated from a database containing occupational information, as well as from the SCANS competency framework. The statements were compiled into a comprehensive survey and distributed to 12,000 workforce members, drawn from over 160 occupations and 6,000 organisations across the US. Participants were asked to state how often they engaged in the behaviours identified in the statements, and to rate how important they were to their jobs. Results indicated that listening to the concerns of clients/customers was deemed to be highly important (82%), as

were the ability to manage information, manage oneself, provide people with information, and determine work priorities.

Frameworks from Canada

The need for generic competencies in the workplace was first recognised in Canada in the early 1970s (the Canadian Vocational Association, 1974). The need to identify a formal, agreed set of generic competencies deemed necessary for workplace success became apparent, however, only in the late 1980s and early 1990s. At this time, The Conference Board of Canada's Corporate Council, a government organisation that links education and employment, conducted a project to identify and communicate the skills that make an 'ideal' job applicant. The first stage of the project involved conducting an extensive review of the literature exploring employer expectations and skill requirements. From this work, a draft set of skills identified as essential for employability was constructed (McLaughlin, 1992). The second stage of the project sought to validate the draft framework by asking business executives, educators, community groups and government representatives to review the document and provide comment.

The resulting report (see McLaughlin, 1992) indicated that employers seek applicants who value the concept of life-long learning, can communicate well, are able to think clearly and critically, can use technology, possess a positive self-image, are able to manage themselves, and are adaptable and creative. To reflect the skills, attitudes and behaviours sought by recruiters, an Employability Skills Profile (ESP) was then developed. The ESP was divided into three categories that were considered to be of equal importance (Conference Board of Canada, 2000):

1. Academic skills (e.g., communication, thinking skills, commitment to life-long learning);
2. Personal management skills (e.g., positive attitude, responsibility, adaptability); and
3. Teamwork skills (e.g., ability to work with others).

The ESP was later updated via the Employability Skills 2000+ Scheme (Conference Board of Canada, 2000). The revised profile

included additional skills to reflect changing demands of the global economy, which were:

1. Fundamental skills (e.g., communicating, problem-solving and managing information);
2. Personal management skills (e.g., being adaptable, engaging in lifelong learning);
3. Teamwork skills (e.g., working well with others, participating actively in projects and tasks); and
4. An orientation toward specific values and attitudes (e.g., demonstrating integrity and responsibility).

Summary and Conclusions

Significant efforts have now been made to establish profiles of generic competencies that are important across different work contexts. Table 1 shows 58 competencies, grouped into six clusters, which appeared in the frameworks reviewed in this paper.

Table 1. Competencies across frameworks reviewed

Cluster	Specific Competency/Attributes	Freq.
Basic Skills	1. Literacy ^a	30
	2. Numeracy	30
	3. Use of Technology	27
	4. Administration	4
Conceptual Skills	5. Reasoning	15
	6. Planning	19
	7. Being Creative	18
	8. Decision-Making	6
	9. Problem-Solving	30
	10. Adaptability	14
	11. Information/Resource Management	22
	12. Pursuit of Lifelong Learning ^b	24
	13. Adopting a Holistic Approach ^c	2
	14. Memorising	1
	15. Ensuring Accuracy	1

Notes: ^aIncludes reading, writing, speaking, listening; ^bAlternatively labeled *Ability to Learn*; ^cAlternatively labeled *Ability to see the Larger Picture*

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Table 1 (Cond). Competencies across frameworks reviewed

Cluster	Specific Competency/Attributes	Freq.
Personal skills	16. Self-Confidence	15
	17. Self-Management	23
	18. Self-Awareness	3
	19. Values/Ethics	12
	20. Professionalism ^e	7
	21. Humour	2
	22. Responsibility/Reliability	10
	23. Motivation	6
	24. Initiative	9
	25. Ability to Work Independently	2
	26. Ability to Manage Stress	7
	27. Promoting Skills	1
	28. Curiosity	1
	29. Practicality	2
	30. Judgment	3
	31. Discernment	1
	32. Cooperative Attitude	7
	33. Commitment	3
	34. Efficiency	1
	35. Achievement Orientation	3
	36. Ambition	2
	37. Enthusiasm	1
38. Maturity	1	
39. Integrity	7	
40. Persuasiveness	1	
41. Balanced Attitude to Work and Home	1	
42. Work Ethic	5	

Notes: ^eIncludes Personal Hygiene/Presentation.

Table 1 (Cond). Competencies across frameworks reviewed

Cluster	Specific Competency/Attributes	Freq.
People skills	43. Communication	29
	44. Interpersonal	25
	45. Teamwork	29
	46. Customer Focus	19
	47. Leadership	10
	48. Assertiveness	2
	49. Negotiation/Conflict Resolution	11
	50. Understanding of Work Culture ^d	17
	51. Communicating in Mother Tongue	1
	52. Training	1
Business Skills	53. Financial Planning	2
	54. Merchandising	1
	55. Enterprise	9
Other	56. Understanding Health and Safety	2
	57. Motor Skills	3
	58. Freedom from Substance Abuse	3

Notes: ^dIncludes *Acceptance of Diversity*.

Whilst Table 1 is based only the selected list of frameworks reviewed here, and thus cannot be considered fully comprehensive, it does provide a sound indication of the relative frequency with which different types of competencies appeared in a large number of the frameworks that appeared at that time.

From Table 1, basic competencies such as literacy, numeracy and the use of technology frequently appeared as competencies necessary for workplace success and life in general. This is consistent with an earlier statement from the European Commission (2001, cited in Eurydice, 2002, p.14), who argued that “ensuring that all citizens achieve an operational level of literacy and numeracy is an essential precondition to quality learning. These are the key to all subsequent learning capabilities...”. Several people-related skills were also consistently deemed important, including communication, the ability to work as part of a team, strong interpersonal skills, an understanding of the work environment, negotiation/conflict

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resolution skills, leadership, and the belief that the customer is the first priority. Personal competencies that appeared commonly included skills such as self-management (e.g., the ability to prioritise and meet deadlines) and attributes such as having high levels of self-confidence and a personal commitment to values and ethical principles.

Despite these commonalities, it is apparent from the above review that no single definitive set of generic competencies was derived at that time, nor was an international consensus reached as to the skills that were essential for producing successful and adaptive employees. The UK's frameworks were generally pragmatic, focusing on a traditional set of competencies that were broadly similar. Countries such as the US, however, developed a more flexible and holistic set of competencies, taking into account personal characteristics as well as basic workplace skills. As noted by Kearns (2001), the focus of the US framework was more consistent with changes to the global economy at that time (e.g., shifts toward having employees work across a variety of contexts) than those adopted in the UK.

Subsequent work within the area has progressed considerably our understanding of the types of competencies that are required of university-level graduates. This work has included the Competencies of Engineering Graduates (CEG) project conducted by Male, Bush and Chapman (Male, 2010) and the work done by Jackson and Chapman (Jackson and Hancock, 2010) on defining and assessing the generic competencies of graduates in business degree programs. Various problems have also been highlighted, however, in this subsequent work. Issues with the notion of competencies-based education are highlighted in a paper by O'Donoghue and Chapman (2010), whilst those related to the assessment of generic competencies are summarised by Chapman and O'Neill (2010). The latter papers indicate that, whilst important progress has been made toward developing consistent generic competency frameworks, further work is needed to clarify both how the competencies listed in these frameworks should be defined and assessed, and how this information can enhance outcomes from the higher education sector.

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