Harmonising Chinese and Australian Approaches to Learning in the Workplace

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Abstract

Work experience for university students in China is not new. Chinese approaches differ in key aspects from contemporary approaches in Australia. The Australian approaches focus on guided, structured learning in the workplace and on developing the non-technical as well as the technical skills that workplaces require. Though valued by employers for their transferability, these non-technical skills are often undervalued by students in China and Australia.

This paper reviews initial findings from discussions with employers in China and identifies points of receptiveness in Chinese enterprises to the development of authentic, practical, learning in the workplace experiences. Chinese managers reported that non-technical skills were important attributes for new graduate employees, though such skills are not explicitly taught in the Chinese university curriculum.

Keywords: China, Learning in the Workplace and Community, Work Integrated Learning, Cooperative Education, Internships, Business education

Introduction

Learning in the Workplace and its various alternative names, Work Integrated Learning, Work Based Learning, Cooperative Education, have become increasingly important initiatives for many Australian universities. They are being presented to potential students as a point of differentiation between courses and between universities. More interesting, however, is the reason for the existence for such programs and what they imply about the relationship between universities, employers and government. The first section of this paper will present points of view from the United Kingdom, USA and Australia, which indicate that similar trends exist in these three countries. The literature on this topic is less extensive in China. This paper aims to add to the developing literature in China and present evidence from Chinese enterprises supporting various learning in the workplace and community activities. The paper will also show that Chinese university programs have in the past differed in focus and emphasis to those of the UK, USA and Australia but are now moving towards developing broader social and generic workplace skills, more and more through experiential learning. The objectives of the Chinese curricula are essentially similar to those of the UK, USA and Australia, albeit with a uniquely Chinese character. This paper also aims to provide a stimulus and basis for further research in China.

The current study was a result of an initiative funded by Victoria University (VU), Melbourne, and was one outcome from ongoing discussions between VU and partner universities in China. At these partner universities, an agreed percentage of the VU curriculum is taught by Melbourne-based academics, who visit China periodically, and the majority of the curriculum is taught by the Chinese university academic staff. This allows for some collegial curriculum discussions and an emerging appreciation of Chinese issues and social trends, though never enough (Victoria University (VU), 2005). This VU funded study allowed for a more sophisticated and structured approach to developing a shared appreciation of both VU curriculum objectives and the needs of local employers and graduates.

As part of an overarching change program, Making VU (2008b), Learning in the Workplace and Community (LiWC) has become a high priority initiative at Victoria University in Melbourne. The initiative has become fundamental to curriculum development and is reinforced by VU policy which states 'LiWC will enable the University to become a leading 'engaged university', through strategic linkages with the professions, industry and the communities it serves as well as through engaged teaching and learning practices' (Victoria University, 2008a). For VU, the definition for LiWC is

> *an umbrella term that encompasses the many models and integrated approaches to teaching, learning and assessment that involve learning in and through the workplace and community. These LiWC models and approaches may include but are not limited to, projects in a workplace, practical, co-operative and clinical placements, fieldwork, simulated learning environments, apprenticeships, traineeships or internships and enterprise initiatives* (VU 2008a).

Australia

In Australia there have been numerous reports addressing graduate skills and the connection between university qualifications s and workplace employability requirements. The *Employability skills for the future* report (Department of Education Science and Training, 2002) identified employability skills and personal attributes that were applicable regardless of employee position/role, industry sector and enterprise size. It noted that the difference between businesses lay in the order in which they prioritised such skills and attributes. This gave slightly more specific data than concerns about graduates' general lack of workplace

skills (A C Nielsen, 2000); (Australian Chamber of Commerce and Industry (ACCI) & Business Council of Australia (BCA), 2002); (Precision Consultancy, 2007) but suggests no significant change since the AC Nielson (2000) survey into employer satisfaction with graduate skills identified three perceived generic skill deficiencies: oral business communications; creativity and flair; and problem solving.

<<Insert Table "Skill" here>>

From the focus on employability skills came the focus on the skills of university graduates. All universities in Australia now have defined Graduate Attributes or Graduate Capabilities. Graduate Capabilities are not simply technical skills. They are the broad capabilities that enable graduates to be 'work, career and future ready' (Victoria University, 2008c). At VU these capabilities are said to be developed throughout a person's life and in various family, work, community and educational settings (VU 2008c). The current VU policy identifies what the VU graduate is able to do. These are

<<Insert table "Victoria University Graduate Capabilities" here>>

The VU approach states that both the LiWC policy and Graduate Capabilities policy must be interpreted and conceptualised as appropriate for each course, then explicitly integrated into learning objectives and assessment. Barrie (2006) argues that most Australian universities have difficulties agreeing internally on the conceptualising, making any attempts at fundamental integration very limited.

The positioning paper by Universities Australia (2008, p. 15) proposed a National Internship Scheme as a means of enhancing the skills and work readiness of Australian University graduates. Following this theme, feedback from key stakeholders showed support for a national scheme that refines employability skills through university programs and courses. Universities Australia argued that graduate employability issues should not be matters for university action alone and that there should be well developed industry partnerships. However, it is still desirable for universities to embed employability skills as part of the graduate skill set through curriculum design, course content and delivery.

United Kingdom

In the UK there are ongoing discussions in the literature that support the need for university and industry linkages as well as the need to embed non-technical, or 'soft-skills', into curricula. Yorke and Harvey (2005) state that recruitment documents are calling for graduates to exhibit more and more non-technical skills if they are going to be successful in the recruitment process. 'Having a degree is just the start … employers … seek a range of qualities …' (p. 41). Earlier, the Dearing Report identified that ' … there is growing interdependence between students, institutions, the economy, employers and the state …'; the report went on to argue that '… this bond needs to be more clearly recognised by each party …' (Dearing, 1997). Developing these themes, Stapleford and Leggott proposed 'to improve the development of skills within the degree by auditing and evaluating the current employability element, incorporating employability more coherently and comprehensively into the course curriculum and making all skills more explicit in the curriculum and course documentation' (2008, p. 8). For the same reasons, Jackson and Campbell (2008)have been exploring strategies to enhance the University of Surrey's commitment to experience-based learning in a range of innovative ways such as story telling and social networking.

The findings of Dearing's 1997 groundbreaking research linked employment skills with higher education outcomes (as shown in Table 1) which prioritises the skills needed in the future and Table 2 which prioritises the current skill deficiencies.

<<Insert "Table 1" here >>
<<Insert "Table 2" here >>

Work Skills in Britain 1986 – 2001 (Felstead, Gallie, & Green, 2002) compares the 1997 Skills Survey conducted by the National Centre for Social Research, on behalf of the Economic and Social Research Council, and the 2001 Skills Survey. This report provides comprehensive information that has allowed economic needs to be connected with education and training policy making. This connection has been achieved by examining the distribution of skills among employers, skill requirement changes that have occurred since 1986 and the value of different skills in the labour market. The terms used are Broad skills, Generic skills

and Particular skills (Felstead et al, 2002, p.9). Findings included: an increase in the importance of generic skill requirements of jobs; an increase in the average level of qualifications both to get and to do jobs; and a notable increase since 1986 in the number of jobs in which advanced technology was used (Felstead et al, 2002, pp 10-13).

A comprehensive study that compared UK graduates with Europe and Japan was reported on by Brennan and team in 2001. Questions covered the higher education experience, attitudes, values and competencies in relation to employment and other areas of life. The resulting report included the UK graduate profile, labour market activity, features of current work, current and envisaged skills and competencies.

Specifically the study asked graduates about the factors they perceived as important to their first employer.

> *For UK graduates, personality factors were easily the most important (81% rating them important or very important) followed by field of study (54%), recommendation/references (45%), main subject/field of specialisation (45%), work experience during study (41%), computer skills (40%) and exam results (39%). Compared with graduates from other European countries, recommendations and work experience appear to have been more important and field of study less important. However, there were large differences between individual countries on many of these factors* (Brennan, Johnston, Little, Shah, & Woodley, 2001, p. 16).

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Building on Harvey's earlier work (Harvey & Knight, 2003), Yorke and Harvey (2005, p.41) state 'employers are growing increasingly demanding in recruiting graduates. Advertisements, web sites, and recruitment literature are suggesting that graduates need to exhibit more and more attributes if they are going to be successful in the recruitment process. Having a degree is just the start, and employers nowadays seek a range of qualities and other achievements'. Furthermore, Yorke and Harvey note that in the UK not all graduate-level jobs require a first degree in a specific subject. Hence for some students, 'degree-level study is more important as a vehicle for developing higher-level intellectual attributes of analysis, critical thinking, synthesis, and problem solving than it is for development of subject-specific expertise' (2005 p. 43). Britain possibly leads in non discipline–specific recruitment (at least 50 percent of

graduate recruitment is not discipline-specific), but the trend is there in Scandinavia and the United States; the practice is unusual in other parts of the world, particularly India and countries in eastern Asia (Yorke & Harvey 2005).

In summary, the idea that certain identifiable generic skills have grown in importance in the workplace has resulted in ongoing attempts to improve the acquisition of specific generic skills in the education system (Leitch, 2006). As in Australia, a policy focus on 'key skills' ('communication skills', the 'application of number', 'information technology skills', 'problem-solving skills', 'working with others', and 'improving one's own learning and performance') has led to the explicit embedding of them in both the school and the British university curriculum.

USA

In the United States, research connecting curriculum and workplace has developed differently from the UK and Australia. Studies by Hafer & Hoth (1981) and Holland & Herron (1982) focused on job selection criteria. Both studies required managers and students to rank 26 job selection attributes and both found differences between the employer responses and the student responses.

Peppas, Peppas and Jin (1999) focussed on the situation where the interviewer and interviewee are from different cultures. To determine the existence of any cultural difference, Chinese and US individuals from public and private sectors were surveyed to determine the importance of 26 job selection attributes. Then Peppas & Yu (2005) built on the 1999 research and sampled Chinese university students on the importance of certain job candidate attributes. These were compared to the data they had from employers. The measurement instrument included a modified list of Hafer and Hoth's 26 attributes. Identifying the importance given to the 26 job selection attributes by Chinese university students and comparing their importance ratings to those of both Chinese and US employers, revealed some of the issues of matching Chinese applicant qualifications to job requirements.

Progressing beyond recent graduates, Rogers and Mentkowski (2004) looked at alumna performance in work, family and civic roles, 5 years after graduation. Rather than *skills* or

capabilities, they used *abilities*, defined as a multidimensional, complex combination of 'skills, motivations, self perceptions, attitudes, values, knowledge and behaviours' (p.348). The subjects were all female alumna from Alverno College which for 30 years has required graduates to show a prescribed level of disciplinary or professional effectiveness in 'communication, analysis, problem-solving, valuing in decision-making, social interaction, developing a global perspective, effective citizenship and aesthetic engagement' (p.355). The results, based on the Behavioural Event Interview, confirmed 'that a wide range of intellectual, pro-social, independent, and team-oriented abilities are related to effective alumna performance' (p.347). From a teaching perspective, lecturers felt that the curriculum had prepared alumna through 'the breadth of the framework used for constructing action, the flexible use of disciplinary knowledge, a skilled collaboration with others, and a mature capacity for self assessment of one's performance and abilities' (p.347), moreover 'nine of the 12 faculty members spontaneously and explicitly named one or more of the eight curriculum abilities' (p.362).

Some disciplines traditionally claimed that their desired graduate attributes were unique but there is growing recognition of evolving industries changing roles and responsibilities. Results from a survey requiring academics and engineering professionals to rate items according to their importance in the workplace showed that academic programs could do more to be responsive to an increasingly non-traditional sector (Eskandari et al., 2007). Other current research has revisited the role of social learning theory[1] in developing students' work-related attitudes, and recently, how internship and cooperative learning programs in higher education can be used more strategically by employers to identify and keep talent in a very competitive labour market (Gardner, 2008). His findings suggest that supervisor support and job satisfaction are connected and influence post-graduation job choices.

China

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[1] Bandura, A. (1977), *Social Learning Theory*, Prentice-Hall, Englewood Cliffs, NJ,

Systematic research connecting curriculum and workplace has developed more recently in China[2] and has initially focussed on graduate perceptions of employer requirements. Huang (2001) asked students about their immediate employment objectives and found a lack of realistic awareness about their skills, their potential, the market requirements, social experience and the competitive employment environment. About half of the students had little idea about how to find employment. Huang (2001) identified a number of psychological skills that could be developed in college students: self confidence to evaluate self and situation, meet challenges, participate in competition; emotional strength; and, the ability to know oneself and evaluate oneself objectively.

In a study addressing workforce planning and curriculum Feng (2002) suggested that university curriculum specialisations were not matching or developing according to market demand forecasting. Students who enrolled in popular specialisations were not receiving an education that was flexible enough to cater for altered market conditions. Overall there was a lack of forecasting of market requirements at both the skill level and the number of graduates. Workforce planning in China has traditionally been centralised and prescriptive however, economic development and the rapid growth of internationalised businesses in China have altered labour market practices. Employers are seeking graduates with more than just technical abilities and want recruits who have a broader set of workplace skills. For the majority of graduates from Chinese universities workforce planning and job allocation is no longer a centralised activity of government. Graduates can now apply for positions that they choose rather than accept positions chosen for them. Hence, the employment market has become more competitive and graduates need a competitive advantage in their job search. Even in the light of these rapidly changing business demands, the academic framework has seemingly not shifted focus from the purely technical aspects of post secondary education. The formal view of Chinese educational bureaucracy is that:

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[2] As "many teacher training programs still stay on the traditional stage which takes delivering lectures as the main method" (Yan, 2009, p. 115) it can be assumed that less vocational programs also do.

Article 16 (2) within the Higher Education Law of the People's Republic of China, adopted at the 4th Meeting of the Standing Committee of the 9th National People's Congress on August 29, 1998 and promulgated by Order No.7 of the President of the People's Republic of China on August 29, 1998, states

> *undergraduate education should enable students to systematically master the basic theory and basic knowledge necessary for the respective discipline and specialty, master the basic skills, techniques and related know-how necessary for the respective specialty and acquire initial capability for the practical work and research work of the respective specialty* (http://www.moe.edu.cn/english/laws_h.htm).

However, another emerging issue is that graduates are seen by employers to have degrees but no 'real talent'. Once employers started looking for knowledge *and* the ability to apply it, which was the new measure of talent, it was up to the graduates to make realistic goals, to determine the steps to become a 'gold collar' worker and to seize the opportunities to demonstrate their usefulness (Zhao, 2002, p. 5). These opportunities, besides requiring diligence and confidence, might involve problem solving and analytical skills.

Tang, Au, Ngo & Pun (2002) examined the impact of background characteristics and gender-role attitudes on Chinese perceptions of selection criteria in employment. They concluded that most important of all were psychological attributes then experience and skill factors; physical and demographic factors were least important. In other words, it was less culture and curriculum and more background characteristics and gender attitudes that determined who was needed and best for job.

The demands of Chinese employers are bringing pressure to bear on Chinese universities to not only comply with Order No.7 of the President of the People's Republic of China to 'acquire initial capability for the practical work' but to also come to terms with the employment environment facing graduates in the rapidly developing Chinese business sector[3]. The initial capability for the practical work acquired in lectures may need to be enhanced by practical experience, particulary if China wished to model "Western" business education (Willis, 2003). Guo and van der Heijden found that business graduates in China would be

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[3] Affected by internal 'opening up' factors plus external factors such as entry into World Trade Organistion in 2001.

more employable if there was closer collaboration between the stakeholders (2008) but also pointed out labour market policy restraints. Some business academics in Chinese universities have questioned the willingness or readiness of employers to collaborate in the gaining of practical experience by undergraduates.

The current study sought to discover how prepared Chinese business managers are to engage with various models of Learning in Workplace and Community and what their expectation is of the role of the university in that relationship. The study also sought to determine how the various models of LiWC developed as part of Victoria University's Commitment 2 (VU 2008b) could be operationalised.

Method

Eight semi-structured interviews were conducted in November 2008 with senior staff members of organisations around the city of Shenyang in Liaoning focussing on senior Human Resource Managers. The interview questions were developed following a review of the relevant literature, a review of the pertinent aspects of the VU LiWC policy and discussion with expert LiWC practitioners at VU and Liaoning University.

The organisations were chosen based on their proximity to Liaoning University in Shenyang, their perceived significance as potential hosts for LiWC activities with Liaoning University and their willingness to participate. The interviews took place in the offices of the respective businesses. Each interview took 45 minutes to an hour. Interviews were conducted in English but when preferred by the interviewee, in Mandarin. Interviews were recorded. The semi-structured interview indicative questions were:

1. Are you familiar with student internship programs in your organisation or in other organisations that you know of?
2. If your organisation were able to provide student internship opportunities what general qualities would you look for in a student?
3. Would you consider that there are any areas/activities of your organisation which are more suitable for student interns than other areas/activities?
4. Would you expect student interns to have specific business skills?
5. How long should an internship be? A year? Six months? Three months? Long university vacation (summer break)?

6. If your organisation were able to provide student internship opportunities what would you expect the role of students' university to be while the students were in your organisation?
7. Does your organisation accept request from students to access your organisation for assignment and project work?
8. Are you aware of students requesting such assignment or project access recently?
9. Have you considered inviting students from a local university to work on a specific project or problem within your organisation?
10. What kind of projects or problem would you expect students to be able to work on in your organisation?

Findings

Human Resource Managers from a range of industries were interviewed including:

agribusiness (large Privately owned enterprise), heavy manufacturing (Joint venture

organisation), aviation (large State owned enterprise), government (State owned enterprise)

and commercial (small Privately owned enterprises and State owned enterprises) services.

Key themes that emerged from a thematic analysis:

- Larger organisations differed from smaller ones with regard to their preparedness to accept "internship-style" student placements. *(A1: 'we have had many interns and postgraduate students working with us' compared with C1: 'we would like to (have interns/coop students) but it's not easy as we are only a small branch office" and "students working on projects would be possible')*
- Smaller organisations reported a lack of human resources available to supervise students, either as "interns/coop students" or to provide adequate supervision for projects or assignments. However, these organisations indicated that they would benefit from being able to have projects undertaken for them by students. *(C1: 'students working on projects would possibly be good for us, but we don't have the people to supervise them')*
- Larger organisations already have some kind of student intern program. *(A1:'We have many students come to us from all over China and also some from foreign countries' and B1: 'We recruit graduates every year and many have worked with us on projects while they were students')*
- Larger organisations welcomed the idea of students making a reasonable level of contact for assignment purposes. *(D2: 'it would be inconvenient for us if students contacted individuals, we would like to help but only if we can have a person in the university who contacts us' and for B1: 'our work is very sensitive and we would have to accept only formal requests made through a member of the university').*
- Larger organisations were positively disposed to having student undertake assignment projects that involved accessing the organisation and its staff. *(D2: 'there are many opportunities for students to learn about [our industry] and to help them in their studies' and A1: 'we have not had any business students come to us before, but we would welcome a discussion with the university about how that could be done')*
- Larger organisations were positively disposed to having student work collaboratively with staff on workplace projects. *(D1: 'there are many projects that we would like to undertake but we do not have the staff with time to do them, some of these projects would be good for students to do' and A1: 'I would like to have students working on*

projects with staff members, it would be a chance for my staff to grow as teachers and mentors')

Discussion

This exploratory research found that LiWC opportunities and practices already exist in Chinese and Chinese joint venture organisations but are not always clearly or explicitly linked to university programs or courses. Staff in joint venture organisations in China have the corporate experience of student internship and student access for research into their organisations in the home countries of the foreign joint venture partners. Similarly, some privately-owned and state-owned Chinese businesses have long standing internship programs in specific technical areas.

The project sought to explore the level of acceptance of LiWC activities in a range of organisations and develop an understanding of how LiWC concepts may be best operationalised with Chinese partner universities. This goal was achieved.

The study found that many Chinese employers' expectations and demands of graduate capabilities are ahead of the Chinese government's policy development and implementation. Chinese universities are somewhat constrained in curriculum development by the pace of change in the development of government education policy. The Australian VU curriculum offers Chinese partner universities the opportunity to facilitate the development of non-technical employability skills without departing from Chinese government education policy. Education expert and expert on creativity in education, Professor Ken Robinson, speaking on Australian television recently, presented an alternative view to the 'job ready model' of curriculum development. Robinson (2009) argues that the focus on workplace skills is a 19th Century approach to education which is no longer relevant. The underpinning of the LiWC model is that students should be immersed in current workplace practices during their formal education years so that they will be prepared, 'job ready' for employment upon graduation. Robinson (2009) points to a potential flaw in this approach, 'Well I think this is the big irony … that a lot of these restrictions on education are being forced … by governments acting in what they believe to be the interests of the economy. [The question can be asked], "Well, why

are we doing this?" [And the answer is] "Well, because we have to be competitive.' Going further, Robinson (2009) asserts that

> *… if we know anything it's that the real driver of creativity and innovation is imagination and diversity, and those things are essential to competitiveness. …America is learning some hard lessons at the moment about the competition coming from the rest of the world, from Asia, from Europe. … Some of the world's biggest corporations have failed in the past few years, and many more will go and some will emerge. A lot of our kids will be working in companies that haven't been invented yet in industries we haven't thought of. So, innovation isn't some soft-edged liberal idea, it's an essential economic imperative.*

Dewey (1966) argued that functionalist approaches to education in general and tertiary education in particular may have unexpected negative consequences for universities and society; Kempner and Taylor (1998) argue that functional, reproductive education limits opportunities for self-empowerment. An emphasis on employability outcomes will inevitably lead to a disproportionate promotion and funding of obviously vocationally and professionally oriented qualifications above other, less obviously oriented, qualifications. Similarly, such an emphasis by universities in promoting narrowly vocational or professional courses will distort demand from school leavers in favour of courses promoted as having clear vocational destinations (Moodie, 2009). It is also argued that the capacity of the nation to compete on the basis of innovation and creativity will be diminished if universities produce graduates with 'vocational training' and limited experience of creativity and innovation in their education; Bergstrom & Soares (2006) call this the 'innovation gap'. Kleiman (2008) suggests that creativity while desired can be too much of an intangible notion for current curriculum and assessment frameworks. China is currently at the crossroads of development where it could leap-frog the educational policies of the European, US and Australian systems and engage directly with the development of education policy better fitted to the needs of a 21st Century economy.

Conclusion

This paper has presented findings from discussions with employers in China and identifies that Chinese enterprises are open to the development of non-technical skills in the Chinese university curriculum. This is consistent with the literature from Australia, the UK and USA

which points to a view that the academic skills associated with a particular discipline are necessary but not sufficient to meet the selection criteria of contemporary employers. In response to the findings in the literature, and government education policy changes, universities in these countries are redesigning curricula to embed a range of 'generic' or 'soft' skills. This same process has not hitherto been systematically applied in China.

Reports in the literature of Chinese employer selection criteria and reviews of Chinese education policy point to a gap between the expectations of employers and curriculum design. There is also a reluctance on the part of some Chinese academics to accept that Chinese employers would willingly collaborate with universities in facilitating the development of 'generic' or 'soft' skills through student internships or workplace projects. This paper points to not only a willingness on the part of the Chinese organisations interviewed to engage with universities with this process, but also that some are already recruiting interns and opening their organisations to students for assignment projects and research. The current study sought to discover how prepared Chinese business managers are to engage with Learning in Workplace and Community (LiWC) and what their expectation is of the role of the university in that relationship. The study has demonstrated that, although moderated by the size of the organisation, Chinese business managers are prepared to actively engage with LiWC and to work closely with universities.

However, the current Chinese education policy is a significant impediment to any major changes to Chinese degree curricula in the near term.   It is by filling this gap between government policy and industry expectations that Australian university programs can provide an advantage to our Chinese partner universities. The findings of this study also points to the need to test these conclusions by conducting further research with a larger sample size.

TABLES

Victoria University Graduate Capabilities (VU 2008a)	
1.	Problem solve in a range of settings
2.	Locate, critically evaluate, manage and use written, numerical and electronic information
3.	Communicate in a variety of contexts and modes
4.	Work both autonomously and collaboratively
5.	Work in an environmentally, socially and culturally responsible manner
6.	Manage learning and career development opportunities

Skill
Communication … that contributes to productive and harmonious relations across employees and customers
Teamwork … that contributes to productive working relationships and outcomes
Problem solving … that contributes to productive outcomes
Planning and organising … that contributes to long and short term strategic planning
Technology … that contributes to effective execution of tasks
Life-long learning … that contributes to ongoing improvement and expansion in employee and company operations and outcomes
Initiative and enterprise … that contribute to innovative outcomes
Self-management …that contributes to employee satisfaction and growth

Table 1 – *The Skills needed by employers from higher education over the next 10 -20 years. Ranked by the percentage of employees stating a need.*		
Rank	**Skills/attributes**	**Employers % N = 119**
1	Business management skills	34%
2	Named specialist skills other than business management	29%
3	Information technology	27%
4	Cognitive skills	22%
5	Learning to learn	21%
6	Communication skills	21%
7	Interpersonal skills	19%
8	Unspecified higher level skills	17%
9	Flexibility	17%
10	Personal skills/attributes	13%
11	Practical/vocational skills/qualifications	11%
12	Foreign language	10%
13	Unspecified 'key' or 'core' skills	6%
14	Numerical skills	5%
Not Ranked	Other	35%

Table 2 – *Deficiencies in skills and attributes of employees with higher education qualifications. Ranked by the percentage of employers who cited them*		
Rank	**Skills/attributes deficiency**	**Employers % N = 119**
1	Communication skills	25%
2	Interpersonal skills	13%
3	Business skills/management	11%
4	Practical/vocational	10%
5	Cognitive skills	8%
6	Numerical skills	7%
7	Personal Skills	7%
8	Named specialist skills	6%
9	Information technology	3%
10	Unspecified 'key' or 'core' skills	2%
11	Learning to learn	2%
12	Modern language skills	2%
13	Unspecified 'higher level' skills	1%
14	Flexibility	1%
Not Ranked	Other skills/attributes	13%

Table 3: *'Top 10' competencies possessed at the time of graduation (as perceived by the graduates)* (Brennan et al 2001, p.21)		
UK	Europe	Japan
1 Learning abilities 2 Working independently 3 Written communication skills 4 Working in a team 5 Working under pressure 6 Accuracy, attention to detail 7 Power of concentration 8 Oral communication skills 9 Problem-solving ability 10/11/12 Initiative; Adaptability; Tolerance	1 Learning abilities 2 Power of concentration 3 Working independently 4 Written communication skills 5 Loyalty, integrity 6 Field-specific theoretical knowledge 7 Getting personally involved 8 Critical thinking 9 Adaptability 10 Tolerance	1 Loyalty, integrity 2 Power of concentration 3 Adaptability 4 Getting personally involved 5 Learning abilities 6 Field-specific theoretical knowledge 7 Fitness for work 8 Initiative 9 Tolerance 10 Working in a team

Table 4: *'Top 10' competencies required in current employment (as perceived by the graduates) p.23*		
UK	Europe	Japan
1 Working under pressure 2 Oral communication skills 3 Accuracy, attention to detail 4 Working in a team 5 Time management 6 Adaptability 7 Initiative 8 Working independently 9 Taking responsibility and decisions 10 Planning, co-ordinating and organising	1/2 Problem solving ability; Working independently 3 Oral communication skills 4 Working under pressure 5 Taking responsibility and decisions 6 Working in a team 7 Assertiveness, decisiveness and persistence 8/9/10 Adaptability; Initiative; Accuracy, attention to detail	1 Problem solving ability 2 Fitness for work 3/4/5 Oral communication skills; Accuracy, attention to detail; Adaptability 6/7 Working in a team; Working under pressure 8/9 Power of concentration; Time management 10 Initiative

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