



Disciplinary differences in the development of employability skills of recent university graduates in Manitoba: Some initial findings.

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Abstract

Despite recent concerns of employers about the lack of preparedness of recent graduates and entry-level workers, it is worth noting that university graduates from a variety of academic disciplines have reported a wide range of employability skills either developed from their program of studies or used in the workplace. In this study, twenty departments, schools, and faculties, selected from a single university in Manitoba were slotted into Biglan's classification system of hard, soft, pure, and applied fields. A total of 1057 university graduates took part in the study that investigates whether or not university students are sufficiently prepared for this new context.

General findings from this study revealed that there are variations in the perceptions of university graduates across Biglan categories on the development and use of employability skills. Specifically, university graduates of soft fields perceived greater development of writing and oral communication skills than graduates of hard fields. Meanwhile, graduates of applied fields perceived greater development of teamwork skills than graduates of pure fields. Developing a wide range of employability skills is useful from the perspectives of university graduates because it allows them to have a portable set of skills that can be taken to the workplace and from job-to-job. It is generally accepted that today's generation of graduates and workers will increasingly be required to develop, possess, and use a wide range of employability skills such as critical thinking, teamwork, and decision-making skills regardless of their field of employment.

Introduction

THE CHANGING NATURE of the labour market and economy over the past several years has had an impact on the role that post-secondary education and training systems play in the preparation of graduates for the contemporary workplace. Dynamic changes in the labour market over time have made it more difficult for institutions of higher education to develop general employability skills and prepare graduates for careers. This challenge is further exacerbated by the persistent need for individuals to update existing skills and obtain new skills and qualifications. With the future economy and labour market needs changing rapidly and becoming difficult to anticipate (Fisher, Rubenson & Schuetze, 1994), the need to upgrade skills and qualifications is mounting.

Taking a closer look at how employability skills (ES) are developed across academic disciplines is important for several reasons. University graduates do not always possess all of the various types of employability skills necessary for workplace success or desired by employers. When employability skills are taught formally, students may lack awareness about how to articulate the types of skills learned in the classroom. Ultimately, there exists a lack of common understanding or commitment amongst the various stakeholders - students, academics, employers, government, and the general public - regarding the employability skills issue (Conference Board, 1993, 2000). The purpose of this paper is to determine the differences in perceptions amongst university graduates across academic disciplines and programs with respect to the types of general employability skills they have developed at university or used in the workplace.

Biglan classification system of academic disciplines

ONE AREA OF research requiring greater attention and investigation is the development of general employability skills in different disciplines. Do different disciplines approach general skill development in different ways? How do graduates of the various disciplines perceive the need for and the development of employability skills?

Biglan's classification system for teaching and learning activities (1973a; 1973b) is a useful way to approach the categorization of programs. It is based on three criteria: (i) social connectedness with faculty members, (ii) commitment to teaching, research, and service and (iii) scholarly output. The three scales on which academic disciplines can differ are:

- Hard-Soft (based on the existence of a paradigm within the discipline)
- Pure-Applied (based on emphasis of application) - Life-Non Life (based on concern with life systems)

Most studies use the first two scales that are composed of four categories. They are: hard-pure, soft-pure, hard-applied, and soft-applied fields. A conceptual analysis of Biglan categories relating to teaching and learning activities can be captured in the below matrix developed by Neumann, Parry, & Becher in 2002:

Conceptual Analysis of Biglan Categories to Teaching and Learning Activities
(Neumann, Parry, & Becher, 2002)

	Curriculum / Content	Assessment	Cognitive Purpose
HARD-PURE Eg: Natural Sciences	<ul style="list-style-type: none"> - Linear and hierarchal - Concepts and principles are closely connected - Content typically fixed and cumulative - Quantitative - Teaching and learning activities are focused and instructive 	<ul style="list-style-type: none"> - Specific and focused exam questions - Objective tests relying on quantitative nature of knowledge 	<ul style="list-style-type: none"> - Logical reasoning - Testing of ideas in linear form of argumentation - Reliance on facts, principles, and concepts
SOFT-PURE Eg: Social Sciences and Humanities	<ul style="list-style-type: none"> - Non-linear, open and loose - Content is free-ranging - Qualitative - Teaching and learning activities are constructive and interpretative 	<ul style="list-style-type: none"> - Essay questions, short answer questions, and oral presentations - Ongoing assessment 	<ul style="list-style-type: none"> - Broad command of intellectual ideas - Emphasis on creativity in thinking and fluency of expression
HARD-APPLIED Eg: Engineering	<ul style="list-style-type: none"> - Concerned with the mastery of the physical environment - Focus is on products and techniques - Content is linear in sequence, based on factual understanding 	<ul style="list-style-type: none"> - Preference for exam questions, especially problem-solving 	<ul style="list-style-type: none"> - Problem-solving and practical skills - Emphasis on integration and application of existing knowledge
SOFT-APPLIED Eg: Nursing, Education	<ul style="list-style-type: none"> - Concerned with the enhancement of professional practice - Knowledge is accumulated in a re-iterative process 	<ul style="list-style-type: none"> - Essays, project-based assignments - Use of peer and self-assessment tasks 	<ul style="list-style-type: none"> - Emphasis on personal growth and intellectual breadth - Development of reflective practice and lifelong learning skills

	Teaching / Research / Service	Teaching Methods	Student Learning
HARD-PURE Eg: Natural Sciences	-Stronger commitment to research; less of a commitment to teaching -Greater collaboration with others on research -Teaching content is linear, straightforward, and uncontentious	- Large group lectures - Problem-based seminars	- Fact and data retention -Ability to solve logically structured problems -Strength in quantitative calculations
SOFT-PURE Eg: Social Sciences and Humanities	-Less commitment and research demands -Greater emphasis placed on teaching and scholarly knowledge -Less collaboration on research -Teaching preparation is time-consuming	- Face-to-face class meetings - Tutorial teaching -Controversial ideas are debated and examined	-Students think laterally rather than linearly -Ability to interpret and evaluate ideas -Originality of student opinions and expression
HARD-APPLIED Eg: Engineering	-Greater preference on research and consultation -Course planning is more important -Need to satisfy external accreditation bodies	-Simulations and case studies in relation to professional settings	- Facts and data retention - Competence in problem-solving -Greater emphasis on practical competencies -Ability to apply theoretical ideas to professional contexts
SOFT-APPLIED Eg: Nursing, Education	-Preference for teaching over research -Open to collaborative teaching	- Face-to-face meetings -Use of guest speakers and practitioners to enhance teaching process	- Competence in problem-solving - Abilities in oral and written expression -Appreciation for how actions shape events through fieldwork and case studies

Manitoba graduates follow-up service

THE INITIAL FINDINGS relating to the development and use of employability skills reported by university graduates is based on a recent survey completed by graduates of post-secondary education institutions in the province of Manitoba. The Manitoba Graduates Follow-Up Survey is a comprehensive telephone survey, conducted in 1999 by the Angus Reid Group (now Ipsos-Reid) in conjunction with the Council of Post-Secondary Education and all Manitoba publicly funded post-secondary institutions (Angus Reid, 1999). It consisted of 50 to 60 questions regarding graduates' experiences at college or university and their labour market experience since graduation in 1997. The respondents were post-secondary graduates in 1997 from all Manitoba colleges and universities.

Academic disciplines by Biglan category:

GRADUATE RESPONSES FROM the University of Manitoba (U of M) were extracted from the Manitoba Graduate Follow-Up Survey for the purposes of answering the research questions set out in this paper. Only U of M graduates from 20 randomly selected departments, schools, or faculties were included as part of the findings presented in this paper. Basic demographic information such as gender, field of study, and Biglan category were captured.

In total, there were 1057 graduates from the University of Manitoba in 20 randomly selected departments, schools, or faculties who took part in the survey. The gender breakdown of the graduate survey respondents was almost equally male and female.:

Gender	Number	Percent
Male	509	48%
Female	548	52%
Total	1057	100%

The number of graduates surveyed from each of the 20 departments, schools, or faculties were:

<i>HARD</i>	<i>SOFT</i>
<i>PURE</i>	
Botany (12)	Economics (38)
Computer Science (48)	English (41)
Geology (4)	Geography (30)
Physics (8)	History (49)
Zoology (19)	Sociology (42)
<i>APPLIED</i>	
Agriculture (81)	Architecture (20)
Dentistry (12)	Education (208)
Engineering (92)	Law (51)
Management (167)	Music (24)
Pharmacy (23)	Nursing (88)

Furthermore, the above fields of study can be slotted into one of four Biglan categories useful for subsequent analyses. The breakdown by Biglan clusters is as follows:

<i>HARD</i>	<i>SOFT</i>
<i>PURE</i> 91 (9%)	200 (19%)
<i>APPLIED</i> 375 (35%)	391 (37%)

(#) = Number of U of M Graduates surveyed = 1057

Data analysis:

IN ORDER TO address the research questions under investigation, two questions from the Manitoba Graduate Follow-Up Survey were utilized in this paper to answer the initial research question. These were: “to what extent did your program develop the following skills?” and “to what extent did you use these skills during the reference week (i.e., two years after graduation)?” The following survey scale ratings were used:

- (1) Not at all
- (2) Not very much
- (3) Somewhat
- (4) A great deal

The list of ten general employability skills were: writing skills, computer skills, oral communication skills, mathematical skills, research skills, decision-making skills, critical thinking skills, evaluation skills, teamwork skills, and lifelong learning skills.

Examples of the type of null hypotheses that were tested for each research question are as follows:

There is no significant difference in the perceptions of university graduates across academic disciplines about their development of employability skills in their program of study.

There is no significant difference in the perceptions of university graduates across academic disciplines about their use of employability skills in the workplace.

Inferential statistics: Graduate survey respondents

A SERIES OF UNIVARIATE F-tests were used to test the research hypotheses in this study. In particular, a 2x2 completely crossed factor analysis of variance procedure with interaction was used, with a 0.05 level of probability selected to determine significance. Several ANOVA procedures were carried out based on the results captured in the graduate survey.

The two main factors were Hard-Soft and Pure-Applied respectively with each factor consisting of two levels (i.e., hard and soft fields for first factor, Hard-Soft; pure and applied fields for second factor, Pure-Applied).

For each of the ten general employability skills, a series of null hypotheses were tested for each research question as follows:

There is no significant difference in the perceptions of university graduates across academic disciplines reflected in Biglan categories in their development of employability skills related to ...

Consequently, the ten dependent variables were: writing skills, computer skills, oral communication skills, mathematical skills, research skills, decision-making skills, critical thinking skills, evaluation skills, teamwork skills, and lifelong learning skills.

Table 1: Univariate F-Tests of Between-Discipline Effects on Development of Employability Skills in Program of Study

Dependent Variable	Main Effects		Interaction Effect	
	HARD-SOFT	PURE-APPLIED	HARD-SOFT x PURE-APPLIED	
Writing Skills	S>H	---	---	---
Computer Skills	H>S	---	---	---
Oral Communication Skills	S>H	A>P	---	---
Mathematical Skills	H>S	---	---	---
Research Skills	S>H	---	---	---
Decision-Making Skills	H>S	A>P	---	---
Critical Thinking Skills	---	---	---	---
Evaluation Skills	S>H	---	---	---
Teamwork Skills	---	A>P	---	---
Lifelong Learning Skills	S>H	---	---	---

Note. Significant differences between discipline groups ($p < 0.05$):

S>H = mean scores higher for soft fields than hard fields

H>S = mean scores higher for hard fields than soft fields

A>P = mean scores higher for applied fields than pure fields

Dashed lines (---) denote non-significant differences between discipline groups.

No significant differences between discipline groups were found in the area of critical thinking skills. Significant differences were, however, found between disciplines along the skills of writing, oral communications, mathematics, research, decision-making, evaluation, teamwork, as well as lifelong learning skills. Mean scores (M) listed below are based on the following survey scale ratings:

- (1) Not at all
- (2) Not very much
- (3) Somewhat
- (4) A great deal

Writing skills:

GRADUATES FROM SOFT FIELDS ($M=3.346$) reported that their writing skills had developed between ‘somewhat’ and a ‘great deal’, while graduates from Hard Fields ($M=2.920$) felt their writing skills had developed ‘somewhat’. Overall, graduates viewed the development of their writing skills, as a result of participating in their program of study as ‘somewhat’ developed ($M=3.158$).

Computer skills:

GRADUATES FROM HARD FIELDS ($M=3.100$) reported that their computer skills were somewhat more developed - compared to graduates from Soft Fields ($M=2.500$) who felt their computer skills were developed from 'not very much' to 'somewhat'. Overall, graduates, felt that their computer skills were the least developed of all of the ten employability skills ($M=2.775$).

Oral communication skills:

GRADUATES FROM SOFT FIELDS ($M=3.305$) viewed their oral communication skills as 'developed' between somewhat and 'a great deal' compared with graduates from Hard Fields ($M=3.174$) who felt their oral communication skills were 'somewhat' developed. In addition, graduates from Applied Fields ($M=3.371$) reported that the oral communication skills they developed while participating in their program of study were between 'somewhat' and 'a great deal' as compared with graduates from Pure Fields ($M=2.920$) who viewed their oral communication skills as less than 'somewhat developed'.

Mathematical skills:

Graduates from Hard Fields ($M=3.405$) reported the development of mathematical skills in their program of study between 'somewhat' and 'a great deal' compared to graduates from Soft Fields ($M=2.701$) who rated their mathematical skills below 'somewhat'.

Research skills and decision-making skills:

GRADUATES FROM SOFT FIELDS ($M=3.370$) reported research skills in their program of study were somewhat developed more so than graduates from Hard Fields ($M=3.215$). In terms of decision making skills, graduates from Hard Fields ($M=3.364$) reported that the development of their decision-making skills resulting from participation in their program of study were between 'somewhat' and a great deal. This can be compared to graduates from Soft Fields ($M=3.199$) who reported their development as 'somewhat'. Furthermore, graduates from Applied Fields ($M=3.325$) reported that the development of their decision-making skills after being in their program of study were 'somewhat developed' more so than graduates from Pure Fields ($M=3.131$).

Evaluation, teamwork, and lifelong learning skills:

GRADUATES FROM SOFT FIELDS ($M=3.281$) reported that their evaluation skills were developed 'somewhat more' than graduates from Hard Fields ($M=3.114$). Graduates from Applied Fields ($M=3.502$) reported teamwork skills as developed 'a great deal' compared with graduates from Pure Fields ($M=3.133$) who viewed teamwork skills as 'somewhat developed.' Graduates from Soft Fields ($M=3.346$) reported that lifelong learning skills were developed 'somewhat more' so than graduates from study than graduates from Hard Fields ($M=3.210$).

The development of employability skills:

FOR THE HARD-SOFT FACTOR, eight of ten univariate *F*-tests of between-discipline effects on the development of general employability skills in their program of study were deemed significant ($p < 0.05$). There were significant differences in perception by graduates across Hard and Soft Fields for the dependent variables of writing skills, computer skills, oral communication skills, mathematical skills, research skills, decision-making skills, evaluation skills, and lifelong learning skills. Mean scores were higher for soft fields than hard fields on five of eight skills. Mean scores were higher for hard fields than soft fields on three of eight skills.

Likewise, along the pure-applied range, three of ten univariate *F*-tests of between-discipline effects on the development of general employability skills in their program of study were deemed significant ($p < 0.05$). There were significant differences in perception by graduates across Pure and Applied Fields for the dependent variables of oral communication skills, decision-making skills, and teamwork skills. Mean scores were higher for applied fields than pure fields on three of three skills deemed statistically significant.

Table 2: Univariate F-Tests of Between-Discipline Effects on Use of Employability Skills in Job

Dependent Variable	Main Effects		Interaction Effect	
	HARD-SOFT	PURE-HARD-APPLIED	SOFT x APPLIED	PURE x APPLIED
Writing Skills	S>H	---	---	---
Computer Skills	H>S	---	---	---
Oral Communication Skills	S>H	A>P	---	---
Mathematical Skills	---	A>P	---	---
Research Skills	---	---	---	---
Decision-Making Skills	S>H	A>P	---	---
Critical Thinking Skills	---	A>P	---	---
Evaluation Skills	S>H	---	---	---
Teamwork Skills	---	---	---	---
Lifelong Learning Skills	S>H	---	---	---

Note. Significant differences between discipline groups ($p < 0.05$):

S>H = mean scores higher for soft fields than hard fields

H>S = mean scores higher for hard fields than soft fields

A>P = mean scores higher for applied fields than pure fields

P>A = mean scores higher for pure fields than applied fields

Dashed lines (---) denote non-significant differences between discipline groups

No statistical differences between discipline groups were found for the following employability skills: research skills and teamwork skills. Significant differences were

found between disciplines along the skills of writing, computers, oral communications, mathematics, decision-making, critical thinking skills, and evaluation.

Mean scores (M) listed below are based on the following survey scale ratings:

- (1) Not at all
- (2) Not very much
- (3) Somewhat
- (4) A great deal

Writing skills and oral communication skills

GRADUATES FROM SOFT FIELDS ($M=3.390$) rated the writing skills they applied to their jobs as between 'somewhat' and 'a great deal' as compared with graduates from Hard Fields ($M=3.017$) who viewed their writing skills as 'somewhat' used in their job. In regards to oral communication skills, graduates from Soft Fields ($M=3.817$) reported oral communication skills were used in their job a 'great deal,' as compared with graduates from Hard Fields ($M=3.692$) who viewed their oral communication skills as above 'somewhat' applied. Likewise, graduates from Applied Fields ($M=3.787$) reported a greater usage of oral communication skills in their job than graduates from Pure Fields ($M=3.696$). Both groups viewed oral communication skills in their job was used between 'somewhat' to and 'great deal.'

Computer skills and mathematical skills

GRADUATES FROM HARD FIELDS ($M=3.514$) reported the use of computer skills in their job between somewhat and a 'great deal,' compared with graduates from Soft Fields ($M=3.119$) who viewed computer skills as 'somewhat' used in their job. In terms of mathematical skills, graduates from Applied Fields ($M=2.840$) reported a greater usage of these skills in their jobs than graduates from Pure Fields ($M=2.539$), even though the usage fell between 'not very much' and 'somewhat.' Interestingly, the use of mathematical skills in their job was rated the second lowest of all ten employability skills by university graduates ($M=2.756$). Overall, graduates felt mathematical skills were used between 'not very much' and 'somewhat.'

Decision-making skills

GRADUATES FROM SOFT FIELDS ($M=3.812$) reported a greater usage of decision-making skills in their job than graduates from Hard Fields ($M=3.696$), even though the usage fell between 'somewhat' and a 'great deal.' Likewise, graduates from Applied Fields ($M=3.786$) reported a greater usage of decision-making skills in their job than graduates from Pure Fields ($M=3.694$). Both groups rated the usage between 'somewhat' and a 'great deal.'

Critical thinking skills, evaluation skills and lifelong learning skills

GRADUATES FROM APPLIED FIELDS ($M=3.847$) reported that critical thinking skills in their job were used a 'great deal more' than graduates from Pure Fields ($M=3.779$). Overall, graduates rated critical thinking skills in their job as the most highly used skill ($M=3.828$). Graduates from Soft Fields ($M=3.391$) reported that

the evaluation skills in their job were ‘somewhat’ used more so than graduates from Hard Fields ($M=3.172$). Graduates from Soft Fields ($M=3.215$) reported that their lifelong learning skills were called upon ‘somewhat’ in their job as compared with graduates from Hard Fields ($M=2.902$) who viewed lifelong learning skills as below ‘somewhat used.’

Summary: Use of employability skills within a job

FOR THE HARD-SOFT FACTOR, six of ten univariate F-tests of between-discipline effects on the use of general employability skills in their job revealed significant differences ($p<0.05$). There were significant differences in perception by graduates across Hard and Soft Fields for the dependent variables of writing skills, computer skills, oral communication skills, decision-making skills, evaluation skills, and lifelong learning skills. Mean scores were higher for soft fields than hard fields on five of six skills. Mean scores were higher for hard fields than soft fields on one of six skills.

Likewise, along the Pure-Applied factor, four of ten univariate F-tests of between-discipline effects on the use of general employability skills in their job was deemed significant ($p<0.05$). There were significant differences in perception by graduates across Pure and Applied Fields for the dependent variables of oral communication skills, mathematical skills, decision-making skills, and critical thinking skills. Mean scores were higher for applied fields than pure fields on four of four skills.

Discussion of initial findings- graduate survey

THE ABOVE FINDINGS are somewhat consistent with results from the existing literature on employability skills development and usage. For example, with reference to the Neumann, Parry, and Becher (2002) matrix of Biglan categories as applied to teaching and learning activities, those graduates connected with soft fields such as English, Economics, and Education reported a greater development and usage of skills related to writing and oral communication. Indeed, teaching and learning methods and activities typically applied to soft fields often include written assignments, guest speakers, and face-to-face meetings which ultimately enhances these two skills.

Conversely, those in hard fields such as Computer Science, Physics, and Engineering, reported a greater emphasis on developing and using skills that focus on mathematical or quantitative methods. Such skill development is reflected in various teaching and learning activities that focus largely on problem-based instruction, objective tests relying on quantitative knowledge, and a heavy reliance on “facts,” principles, and concepts.

The findings also indicate that graduates have reported a wide range of skills developed in their program of study or called upon in the workplace. This statement is in contradiction to recent reports by Evers, Rush and Berdrow (1998) and Industry Canada (2000) which indicate that, because of the changing labour market and economic conditions, the general employability skills required in today’s knowledge-based economy do not appear to be well-developed by university graduates.

Furthermore, not only have university graduates developed a wide range of employability skills, but they have also spanned a range of categories as suggested by both the Conference Board of Canada (1993, 1998) and SCANS (1991) framework. University graduates have developed basic fundamental skills related to writing,

computing, and oral communication; advanced skills related to research and decision-making; and personal management skills related to teamwork and lifelong learning.

The findings also suggested that students recognize the importance and the need to develop written and oral communication skills, problem-solving skills, and time management skills regardless of academic discipline. In particular, graduates from soft fields more so than hard fields reported a greater development of skills related to writing and oral communication. This finding aligns with a study done by Krahn and Bowlby (1997), indicating that the development of such skills contribute to both effective teaching and positive classroom dynamics, as well as overall satisfaction with university learning experiences.

Students will also benefit from the integration of skills development with course content. The trend in recent years has been to integrate a wide range of general skills into courses. The ‘popular writing across the curriculum’ movement is one example of this trend. Locally, at the University of Manitoba, entering first-year students have the option of taking a unique half course entitled “Introduction to the University.” This course was designed to equip students with the various academic skills and learning strategies necessary for success in university studies. In this course, students learn, for example how to write research papers and make oral presentations. As a result, within this introductory course, great importance is placed on the development of students’ writing, research, oral communication, and teamwork skills.

The findings from this study suggest strongly that there are differences in perceptions among university graduates across academic disciplines on the types of general employability skills developed. Graduates of soft fields reported greater development of writing and oral communication skills than graduates of hard fields. Meanwhile, graduates of applied fields reported a greater development of teamwork skills than graduates of pure fields. These statements reflect similar findings to Reich (1991), who identified four fundamental skills for the knowledge worker of the new century in areas related to abstraction, systems thinking, experimentation, and collaboration (involving oral communication, written communication, and team-working skills).

Finally, another finding consistent with the literature is the importance of teamwork skills in a variety of settings such as the classroom or workplace. According to Chickering and Gamson (1987), working in teams through cooperation among fellow classmates is one good practice of undergraduate education. Effective learning, according to Chickering and Gamson, ought to be collaborative and social, not competitive and isolated. In fact, graduates from applied fields reported a greater development of teamwork skills in their program of study than graduates from pure fields. In addition, a significant interaction between graduates along hard-soft and pure-applied fields on the use of teamwork skills in the workplace was found.

The limitations of this study

SOME OF THE LIMITATIONS encountered in this study include:

1. The concept of employability skills, developed by the Conference Board of Canada, was derived from lists of skills deemed necessary by senior managers. It is not

clear which employability skills are perceived to be most important or desirable by employers.

2. Although a single university was used in this study, the findings and conclusions may not be generalizable beyond the specific population from which the sample was drawn. The findings and conclusions in this study cannot be generalized to educational institutions other than those at the University of Manitoba, which is largely a research-intensive university offering a range of undergraduate programs. It would be beneficial to have included the other two universities in Manitoba as part of this study to provide a more comprehensive picture of how employability skills are perceived to be developed by university graduates across the post-secondary education system.

3. Finally, the study dealt with self-perceptions of university graduates on the development of employability skills in undergraduate programs. Given that the study focused on self-perceptions, it is likely that the perceptions of multiple stakeholders (such as graduates, faculty members, and employers) may not be entirely aligned. For example, the perceptions of employers on what constitutes appropriate employability skills needed for the workplace may not match the perceptions of university graduates.

Summary and conclusion

THE CURRENT JOB MARKET REQUIRES that today's generation of students and graduates possess a wide range of skills. Because of the changing nature of work, an increased emphasis is placed on individuals to continually update their knowledge, skills, and abilities in the context of lifelong learning. The above initial results indicate that many university students have developed and obtained employability skills, which can be used in the workplace.

Graduates are now inheriting a job market that requires them to change jobs more frequently than previous generations. Thus, it is important for current students and recent graduates to take note of the skills that are the most portable from one job to the next, focusing more on employability over employment, or what others have either called enhanced employability (HRDC, 1996) or lifelong employability (Evers et al., 1998).

The initial results show that regardless of program of study, students and graduates perceive that they have acquired and developed a wide range of employability skills. Graduates should continue to take stock of the general employability skills that they have acquired in their courses or program of studies.

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