

Acquisition of Employability Skills by High School Students

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La majeure partie du débat sur l'amélioration des compétences qui rendent employables les jeunes Canadiens se fonde sur des hypothèses non vérifiées. Cet article examine les rapports fournis par des étudiants du secondaire eux-mêmes, en Alberta, sur les compétences professionnelles qu'ils ont acquises dans les cours donnés par l'école secondaire, les programmes d'expérience de travail, les emplois à temps partiel rémunérés et le travail bénévole. Certains types de compétences professionnelles sont beaucoup plus susceptibles d'être acquis dans certains cadres que dans d'autres. La plupart des étudiants ne voient pas l'intérêt que peuvent présenter, sur le marché du travail, des capacités d'analyse ou une éducation scolaire de base. En outre, les compétences que les employeurs, traditionnellement, disent rechercher, ne sont pas celles que les étudiants croient que les employeurs demandent. Ces constatations suggèrent que les différents acteurs concernés ne parviennent probablement pas à communiquer efficacement entre eux. En particulier, les éducateurs et les employeurs doivent démontrer plus clairement aux étudiants le lien qui existe entre les programmes obligatoires de l'école secondaire et les possibilités d'emploi.

Much of the debate about enhancing the employability skills of Canadian youth is premised on untested assumptions. This paper examines Alberta high school students' self-reports of the employability skills they have acquired in high school courses, formal work-experience programs, paid part-time employment, and volunteer work. Certain types of employability skills are considerably more likely to be acquired in some settings than in others. Most students do not see the labour market relevance of analytic skills or of a basic high school education. In addition, the skills that employers typically indicate they are seeking are not the same as the skills that students believe employers want. Such findings suggest that the different stakeholders may not be communicating effectively with each other. In particular, educators and employers must demonstrate more clearly to students the link between core secondary school curriculum and employment outcomes.

INTRODUCTION

The goal of human-resource-development policy in Canada, and in other industrialized nations, is to create more globally competitive, knowledge-based industries by enhancing workforce skills (Rubenson and Schuetze 2000). Nowhere is this

more clearly articulated than in the concept of "employability skills." Ever since the Conference Board of Canada (McLaughlin 1992; Conference Board of Canada 2000) released its highly influential Employability Skills Profile (ESP), discussions about the types of skills schools and employers should be trying to develop have been framed in the discourse of

employability skills (Taylor 1998). Based on employers' perceptions of what was required to make Canada more globally competitive, the ESP has largely defined the foundational academic, personal, and teamwork skills that employers now say they expect of workers and which they expect to be developed in the education system. This Canadian model of skills requirements is similar to the US SCANS (Secretary of Labor's Commission on Achieving Necessary Skills) report's notions of competence and foundational skills (United States Department of Labor 1991) and the concept of key skills in the United Kingdom (Green 1998).

Employability skills is an enduring policy concept because such skills are thought to contribute to both aggregate economic growth and improved labour market outcomes for individuals. However, the employability skills discourse rests on two assumptions that have not been subjected to empirical analysis. The first is that many young people are deficient in employability skills, mainly because schools do not sufficiently emphasize such skills. The second is that students lack awareness of the skills needed in the world of work. Given the dominance of the notion of employability skills in today's policy agenda, it is important to systematically evaluate these assumptions, to determine whether employers, educators, and students — the three stakeholder groups involved or implicated in the employability skills debate — understand the concept and the issues in the same way.

Much of the public discussion about employability skills has focused on employers' reports of skill shortages or requirements in their organizations or industries. This paper adds another dimension to the debate by presenting an empirically grounded description of the process of employability skill acquisition from the unique perspective of young people graduating from high school. While the third critical dimension, the opinions and beliefs of educators regarding employability skills, is not addressed, this discussion of high school students' views on the subject adds an important component

to our understanding. If our collective goal is to enhance the employability skills of youth, thereby improving their labour market options and contributing to economic growth, it is imperative that the different stakeholder groups understand the concept and the issues in the same way.

Most Canadian research on skill development has focused on adult workers' participation in training activities (Betcherman, McMullen and Davidman 1998). In addition, a smaller number of surveys of university and college graduates have emphasized basic labour market outcomes, such as the overall "fit" between graduates' program of study and subsequent employment (for example, see Krahn and Lowe 1998a; Lehmann, Dennis and Coffin 2001). However, they typically have not examined how specific skills are developed and, in turn, affect future labour market outcomes. More recently, such surveys have begun to ask graduates to assess how their postsecondary program contributed to developing specific job-relevant skills and abilities (Evers, Rush and Berdrow 1998; Krahn and Bowlby 1999; British Columbia 2000, 1999). But similar research has not been conducted at the high school level, a gap that this paper begins to address.

PROBLEMS IN DEFINING AND MEASURING EMPLOYABILITY SKILLS

A recent contribution to the discussion of employability skills is the report of the Prime Minister's Advisory Committee on Science and Technology's Expert Panel on Skills (Expert Panel on Skills 2000, p. 7). The Panel concludes that, while Canada faces no shortage of technical skills required in "strategic industries,"¹ employers nevertheless report that workers — especially new hires — lack essential skills and management skills. Thus, the Panel reinforces some long-standing beliefs (for example, Economic Council of Canada 1992) with its recommendations that secondary and postsecondary education programs be revamped to better prepare students with the requisite skills for an ever-changing workplace (2000, p. 16).

The Expert Panel on Skills defines "skill" as the ability to apply knowledge in order to accomplish a task (*ibid.*, p. 14). Following the same approach to skill classification used by the Conference Board of Canada and, subsequently, Human Resources Development Canada (Gallagher 1999), it identifies four skill sets — essential, technical, management, and leadership — as critical to the growth of knowledge-intensive industries in Canada over the coming decade. Essential skills are foundational and as such, are what the Conference Board labelled "employability skills." In addition to the academic (communicating, thinking, life-long learning), personal management (positive attitudes and behaviour, responsibility, adaptability) and teamwork skills identified in the Conference Board's ESP, the Expert Panel includes literacy and numeracy, computer skills, and analytic and problem-solving skills as essential skills (*ibid.*, p. 14). But beyond asking employers where they perceive skill needs to exist, the Panel did not validate the determinants or outcomes of essential skills, or the taxonomy of skills itself. As the Panel research acknowledges, we lack a common language or framework for defining and measuring so-called critical skills (Roberts 1999). The same observation was made by the Conference Board when it recommended the development of assessment tools for employability skills (Gilbert and Bloom 1998).

Such concerns about the definition and measurement of employment-related skills have been noted previously (Spenner 1990; Krahn and Lowe 1998b). These critiques have highlighted three central issues. One is the distinction between skills as attributes of individuals versus skills as occupational or job requirements. While Canada's labour market information systems are based on occupational groupings, rather than on the skills possessed by individuals, efforts to enhance skill levels via education and training focus directly on individuals and seldom on changing occupational requirements. The second issue is the extent to which the skills and abilities needed to perform specific tasks can be accurately assessed in terms of their importance and

complexity. Clearly it is important to differentiate the type, breadth, and depth of skills required in a particular job, yet the reliability and validity of many attempts to measure, classify, and rank skills have yet to be established. A third issue is that skills are, to a large extent, socially constructed, reflecting the power dynamics and culture of a particular occupation or workplace, rather than objective job requirements (Steinberg 1990).

So it is not surprising that we find a mixed picture in terms of theory and measurement when it comes to employability skills. Literacy skills, defined as the ability to understand and use printed information in a range of daily activities, have undergone the most extensive conceptual and measurement refinement. While self-assessments (in contrast to formal testing) of skill acquisition have been the norm, studies like the International Adult Literacy Survey have used carefully constructed and validated proficiency tests of prose, document and quantitative literacy (Organisation for Economic and Cultural Development and Human Resources Development Canada 1997). In contrast, while there have been some advances in developing instruments for assessing computer skill levels among different populations of students (Taylor *et al.* 1998), there is little consensus on how to proceed in this direction. Higher-order cognitive abilities (e.g., thinking, analyzing, problem-solving) are considered important outcomes of participation in the secondary and postsecondary education systems, but little progress has been made in developing valid and reliable measures of such abilities. Similarly lacking are satisfactory tools to assess team work, communication, responsibility, adaptability, and independent learning.

As already noted, the employability skills discourse revolves around employers' views of skill needs and shortages (Taylor 1998). Employers' assessments of skill requirements within their organizations or industries are one indicator of the changing demand for labour. But they are not adequate for monitoring skill shortages or assessing

the skill development contributions of the secondary and postsecondary systems.

Critics have raised a number of concerns about the accuracy of employers' perceptions of skill shortages or mismatches. Many employers use educational credentials as a pre-screening device in recruitment (Holzer 1996), even though they may know relatively little about the skills developed within specific educational programs. A related issue involves the criteria used by employers when assessing job applicants. For many entry-level jobs open to high school graduates, employers emphasize "good work attitudes" rather than specific job-relevant skills (Cappelli 1992).

As various observers (Crouch, Feingold and Sako 1999; Kincheloe 1999) have noted, employers frequently express contradictory demands for skills, advocating higher standards for a broad, general education, while at the same time criticizing schools for not producing graduates with pre-packaged sets of skills, ready to step directly into specific jobs. Other critics focus on the ideological function of the employability skills discourse itself, arguing that it shifts responsibility for developing appropriate job skills more heavily onto schools and individual students and away from employers (Taylor 1998; Darrah 1994). Viewing skill development as an individual process tends to downplay the role of job design, organizational environment and culture, and human resource management practices in either inhibiting or facilitating skill development (Krahn 1997; Livingstone 1999; Lowe 2000). From this perspective, the underemployment of sizable numbers of workers suggests that there may be a surplus of some of the general employability skills that many employers insist are in short supply.

Despite these concerns about how employability skills are conceptualized and measured, it is useful to examine the few empirical studies that have focused directly on the development of such skills among Canadian youth. Evers, Rush and Berdow's (1998) study of college and university graduates

asked individual graduates and their managers to assess the graduates' competence in four areas: managing self, communicating, managing people and tasks, and mobilizing innovation and change. Managers' ratings of graduates on the four competencies were lower than the graduates' self-ratings. The researchers conclude that while university graduates have good technical or specific skills, they frequently lack general or transferable employability skills.

Thiessen and Looker (1999) examined high school students' assessments of their employability skills before and after participating in a school-to-work transition program. Students' self-assessments were contrasted with job supervisors' ratings of the same skills. Generally, supervisors emphasized communication skills and the ability to work with others, viewing basic literacy skills as less important. Supervisors rated students in the program high on workplace behaviour (for example, punctuality, grooming, attendance, safety), but lower on employability skills such as communication, problem-solving, and planning and organization.

Even though these two studies used quite different methodologies and focused on different student populations, each finds discrepancies between students' and supervisors' perceptions of young people's preparedness for work. Supervisors are not unanimous in the kinds of skills they expect graduates to have, placing different emphasis on employability skill sets, depending on the level of graduate (high school or university) or the size and geographic location of the firm.

In short, many key questions about the supply and demand sides of employability skills remain unanswered. This paper begins to address this gap by providing answers to the following research questions: (i) what types of employability skills do Canadian high school students report that they are acquiring? (ii) how valid are high school students' self-reports of such skill acquisition? (iii) does the acquisition of such skills vary across different learning settings, namely, high school courses in

general, formal work-study programs, part-time student jobs, and volunteer work? and (iv) what do Canadian high school students believe employers are seeking in terms of employability skills? One of the strengths of our analysis is a survey methodology that allows young people to self-define job-relevant skills, on the assumption that these perceptions will influence their education and labour market decisions as they make the transition from high school to the adult labour market. The paper concludes by discussing the implications of our findings for educators, employers and policymakers, and for the ongoing debate about employability skills in a knowledge-based economy.

SAMPLING AND DATA COLLECTION

The 1996 *Alberta High School Graduate Survey* (AHS GS) was designed to collect data on the education and employment values, experiences, and goals of the provincial high school graduating class of 1996 (Lowe, Krahn and Bowlby 1997). We used a cluster sampling strategy to construct a representative sample of Alberta twelfth grade students, since a simple random sample of the complete provincial population of twelfth graders would not have been possible. Relying on administrative data provided by Alberta Education, we began by calculating the desired number of respondents in each of six geographic regions, based on the size of their twelfth grade enrolments. Within each geographic region, with the cooperation of school district administrators, we then purposively sampled schools in order to include a representative mix of small, medium, and large schools in smaller and larger urban centres.

A total of 60 Alberta high schools participated in the study. Within the selected schools, principals (or their designated contact person) assisted in identifying twelfth-grade classes that would provide the required number of respondents and a representative mix of students in diploma, certificate, and other programs. Members of the research team supervised the in-class completion of questionnaires by students. In all participating schools, a very high

proportion (well in excess of 90 percent) of students in the selected classrooms completed the questionnaire. This high response rate, as well as a close match between characteristics of our sample and available information about the population of Alberta twelfth-grade students, make us confident that our sample is representative of the population from which it was drawn.

The final number of useable questionnaires was 2,681. Because one large city within the province (Edmonton) was deliberately over-sampled to allow comparisons to data collected in an earlier study, and since some of the desired sample sizes in other geographic regions were not obtained for a variety of different reasons, the final sample was weighted to match the proportions of twelfth-grade students in each geographic region. Weighted survey estimates are used in the following data analyses.

PROFILE OF SURVEY PARTICIPANTS

The final sample contained relatively similar proportions of female (49 percent) and male (51 percent) respondents. The average age of these twelfth-grade students was 17.6 years. Most (88 percent) were born in Canada, and two-thirds had always lived in the province of Alberta. Almost half (47 percent) of the (weighted) sample were resident in the province's two largest cities, Edmonton and Calgary. Both parents of approximately one-quarter of the sample members had a university degree. Unemployment rates among parents were in the 3 percent to 4 percent range. Among employed parents, a large majority were in managerial/professional and other skilled occupations.

Three-quarters of these twelfth-grade students (73 percent) were in academic high school programs. Almost all respondents (88 percent) expected to have obtained enough credits by the end of the term to graduate from high school. Most of the rest planned to return for another year. Almost two-thirds of the respondents indicated that they planned to enter a

postsecondary educational program in the fall of 1996. About half of these individuals planned to attend university, about 30 percent indicated that they would be going to a community college, and 15 percent reported plans to attend a technical school. Only 4 percent stated that they planned to start an apprenticeship.

One-quarter of the sample members (23 percent) had participated in some kind of work-experience program during the past school year (a small minority reported several kinds of school-based work experience). The most common program, mentioned by 14 percent of all respondents, was a formal Work Experience course. Six percent of all respondents stated that they had participated in a workplace visit (one day or less), 4 percent reported participation in a co-operative education program, 3 percent had worked in a school-based business, and only 2 percent had been involved in a registered apprenticeship program. Students who had participated in some kind of work-experience program reported an average of 119 hours in the program in the previous year.

Three out of four survey participants (72 percent) had held a paying job at some point during the previous school term; 58 percent were employed when surveyed. On average, these young workers reported 17 hours of paid work per week. Almost half (46 percent) of these employed students held unskilled sales and service jobs. One in four (26 percent) were in semi-skilled sales/services jobs, 15 percent reported blue-collar jobs (usually unskilled), 5 percent were in clerical positions, and 8 percent reported technical/managerial/professional jobs (typically in lower level positions). Half of the female respondents and 40 percent of the males indicated that they had done some volunteer work in the past school year. Volunteer work had been completed in a wide variety of school and community settings.

MEASURING SKILL ACQUISITION

As already noted, the debate about employability skills raises questions about how best to measure

such skills. The Conference Board of Canada identifies three alternative approaches: objective testing (numeracy or literacy skills, for example); peer/supervisor assessments (for example, "How good are [individual's] problem-solving skills?"); and self-assessments (Gilbert and Bloom 1998).² The latter could include direct assessments ("How good are your speaking skills?") or proxy measures ("How many oral presentations have you made to a group in the past year?").³

The same Conference Board report concludes that little work has been done to develop effective employability skills measures, and even less to evaluate them. While self-report skill measures are widely used by social scientists, few studies have attempted to assess their validity and reliability, although Myles and Fawcett (1990) and Krahn and Lowe (1998*b*) are exceptions. So while using self-reports is consistent with previous research on skills, solid documentation of their validity and reliability is lacking, especially for teenagers who are beginning their working lives.

Lacking a solid foundation of theory and measurement, we chose to use open-ended self-reports of skill acquisition. Previous self-report studies have used only fixed-choice questions, for example, "On a scale of 1 to 5, with '1' meaning 'very little' and '5' meaning 'to a great extent,' to what extent were your computer skills improved by your work experience program?" The use of open-ended questions, within the context of a large sample survey, allows us to examine what twelfth-grade students have to say — in their own words — about the acquisition of employability skills, without prompting them in any way at all. This approach requires respondents to articulate what they are thinking, rather than merely agreeing or disagreeing with statements that they might never have thought about before.

We asked all study participants to tell us about the "most useful job-related skills or knowledge learned in high school." Students who had

participated in a work-experience program, worked in a paying job, or volunteered during the previous nine months were asked similar open-ended questions. Generally, open-ended questions in self-administered surveys elicit a lower response rate than do forced-choice questions, particularly if respondents have given little thought to the issue being addressed. However, the response rate to our open-ended skill acquisition questions was high, compared with our previous experiences with the use of open-ended questions in similar surveys (Krahn and Lowe 1993), suggesting that our sample members were interested in the subject matter and felt that they had something to say about it.

Eighty-one percent of the total sample provided at least one answer to the question about employability skills acquired in their high school program. The same proportion of individuals who had participated in a formal work-experience program (81 percent) gave at least one answer to the open-ended question about skills acquired in this program. A slightly higher response rate (84 percent) was obtained for the question about skills acquired from volunteer work. As for skills acquired from a paid job, 93 percent of the students eligible to answer provided an answer to this open-ended question. Many respondents identified two or more different employment-related skills, so we coded up to three responses per sample member for each question. The high response rates for these open-ended questions, and the frequency of multiple responses, clearly suggest that sample members had given some thought to the subject of employability skills.

We used the basic principles of content analysis, a standard social science methodology for analyzing textual material to develop our coding scheme (Weber 1990). A detailed and systematic inspection of the thousands of written responses to these open-ended questions allowed us to devise a common coding scheme with approximately 80 detailed categories. These, in turn, were organized into the nine thematic areas presented in Figure 1 (see Table 1 for examples of the detailed categories that fit into

each thematic area). To facilitate additional cross-tabular analyses of the survey results, we subsequently combined these nine themes into four general "skills/knowledge" categories (see Tables 2 through 5 below).⁴

Figure 1 captures the basic distinction in our data between the academic knowledge and skills provided through the core high school curriculum, general social or "people" skills, job-specific technical and other skills, and work-related attitudes and behaviour. It is important to note that, while our coding scheme was shaped by students' written responses to our open-ended questions, the results of this qualitative analysis converged with the basic categories used in policy discussions of employability skills, for example, the Conference Board's ESP.

ASSESSING THE VALIDITY OF OUR SKILL ACQUISITION MEASURES

The large number of similar responses to our open-ended questions, and their reflection of the Conference Board's ESP, raises the possibility that these students might be parroting what they had been told in school, or by employers, about "what you need to get a job." For example, 31 percent of the 2,950 responses provided by the 1,792 students who answered the question about skills learned in a paid job used the words people skills or social skills. Speaking skills constituted 11 percent of the 3,814 responses from 2,165 students who answered the question about skills learned in high school. Another 10 percent of the responses to this question mentioned computer skills.

To address such concerns about measurement validity (Carmines and Zeller 1979), we compared responses to the open-ended skill acquisition questions with answers to similar open-ended question about the "things employers look for when hiring a high school graduate." For the parroting hypothesis to hold true, we would expect similar responses to these two sets of questions. The results were

reassuring. Rather than focusing on people, speaking, or computer skills, our respondents were much more likely to indicate that employers are looking for educational credentials, prior work experience, and appropriate work attitudes, such as discipline and a strong work ethic (see Figure 2 below). Only one category (work attitudes) was fairly common to both sets of responses. Thus, these variations in responses do not support the parroting hypothesis. Instead, they provide us with some confidence in the general validity of our self-report measures of skill acquisition.

We also considered the more specific issue of *construct validity*, that is, the extent to which independent variables that we might expect to have an effect on these responses actually do have such an effect, in the predicted direction.⁵ Table 1 below displays the range of employability skills/knowledge that respondents indicated they had obtained from their various school and work experiences. While the differences across the four possible sources are not large, we do observe students reporting that core knowledge and broader perspectives are more likely to be obtained in high school, and that people/social skills are more likely to be acquired through paid and volunteer work. Specific job preparation skills are mentioned more often in response to the question about work-experience programs, while citizenship values appear most frequently among responses to the question about skills/knowledge acquired doing volunteer work. All of these differences are what we would have expected, providing us with more confidence in the construct validity of these self-report, open-ended questions.

Table 2 reveals that older high school seniors, those in non-academic programs, and those with lower (self-reported) grades were more likely to indicate that they had learned specific job preparation skills while attending high school. Table 3 provides some evidence that individuals who had participated in more extensive work-experience programs, such as registered apprenticeships, were more likely to mention the specific job preparation skills they had

acquired in such programs. In Tables 4 and 5 we observe differences we might expect to find between groups of respondents who had held different types of paid employment, and worked in different kinds of volunteer settings. In addition, those who reported working longer hours in their paid job were more likely to mention that they had acquired specific job-preparation skills. Overall, the relationships observed are consistent with the conclusion that these open-ended, self-report questions about skill acquisition are reasonably valid measures.

FINDINGS

Job-Related Skills and Knowledge Acquired in Different Settings

Table 1 shows that grade 12 students believe they are enhancing their employability skills via regular school courses, formal work-experience programs, paid employment, and volunteering. Respondents emphasized four broad types of job-relevant skills and knowledge: *people skills* (e.g., social and interpersonal skills, helping others, teamwork, conflict resolution); *work attitudes and behaviours* (e.g., discipline, hard work, time management, leadership); *basic academic skills* (e.g., speaking, numeracy, writing, reading); and *specific technical/computer skills*. These four themes account for 70 percent or more of all responses provided to each of the four open-ended questions.

Equally noteworthy, relatively few study participants considered education per se and analytic skills as useful for employment. Even in response to the question about job-related skills and knowledge acquired in high school, only 8 percent of the answers focused on general education and even fewer (5 percent) mentioned analytic skills (Table 1; column 1). While the Employability Skills Profile clearly identifies such knowledge and skills as cornerstones supporting the development of other more job-specific skills, most grade 12 students do not see the connection between the bulk of what they learn in high school and what they might contribute in a workplace.

TABLE 1
Job-Related Skills and Knowledge Learned in High School, Current Job, Work-Experience Program, and Volunteer Work

<i>Job-Related Skill/Knowledge Category</i>	<i>Learned in High School</i>	<i>Learned in Work-Experience Program</i>	<i>Learned in Current/Previous Paid Job</i>	<i>Learned in Volunteer Work</i>
	%	%	%	%
<i>Education (e.g., specific courses, more knowledge in an area, broader perspective, learn new things, preparation for postsecondary education)</i>	8	2	0	1
<i>Analytic Skills (e.g., ability to reason, critical and analytical thinking, understanding issues, creativity)</i>	5	2	2	2
<i>Basic Academic Skills (e.g., speaking, numeracy, writing, reading)</i>	18	7	6	9
<i>People Skills (e.g., social and interpersonal skills, helping others, team work and cooperation, conflict resolution)</i>	20	27	38	38
<i>Job Preparation (e.g., what workplaces are like, job search skills, practical experience, how to work in a bureaucracy, what kind of jobs I enjoy)</i>	9	18	4	5
<i>Business Skills (e.g., general business skills, handling cash, financial and accounting skills, supervisory skills)</i>	2	8	11	4
<i>Technical, Computer Skills (e.g., specific technical skills, computer skills, general technical knowledge)</i>	14	13	14	5
<i>Work Attitudes and Behaviours (e.g., discipline and hard work, personal development, time management, organizing and planning, initiative, responsibility, leadership, loyalty)</i>	20	18	22	23
<i>Citizenship (e.g., respect for others, value of community work, rights and obligations, exposure to diversity of people and viewpoints)</i>	1	2	1	9
None, few	2	3	2	4
Other	1	0	0	0
Total Responses	100	100	100	100
Response n	3,814	807	2,950	1,519
Respondent n	2,165	498	1,792	991

Note: Percentage of responses to each of four open-ended questions asking respondents to describe the most useful job-related skills or knowledge learned in high school, work-experience programs (if they had participated in such programs), their current/previous job (if they had held a paid job during the school term), and their volunteer work (if they had volunteered during the school term). Up to three responses were coded and classified for each question.

Comparisons across the columns in Table 1 reveal different skills and knowledge being acquired in different settings. As already noted, high school is seen by respondents as the most likely site for the development of analytic and basic academic skills, even though few students in the sample consider these skills job-relevant. People skills are much more likely to be acquired via paid employment or volunteer work (almost 40 percent of responses to both questions) than in high school itself (20 percent of all responses to this question) or in work-experience programs (28 percent).

Both general and more specific business skills (e.g., accounting, handling cash) were reported in response to the questions about paid jobs and work-experience programs. In contrast, high school, paid employment, and work-experience programs appear to be equally important in developing technical and computer skills, at least as reported by these twelfth-grade students. As for specific job preparation knowledge and skills, work-experience programs were most likely to be the source (18 percent of all responses to this question, compared to 8 percent or less of responses to the others).

Paid employment or formal work-experience programs are often presented as useful settings in which young people can develop the positive work attitudes and behaviours they will need to exhibit as adult workers. It is interesting to note that high school itself and volunteer work are equally likely to enhance such attitudes and behaviours, according to the students surveyed in this study.

High schools typically emphasize their role in developing citizenship values, such as respect for others and openness to diversity. It is striking that virtually none of the responses to the questions about high school, paid employment, or work-experience programs made mention of citizenship values. However, as we would expect, such values were identified much more frequently as having been developed via volunteer work (9 percent of all responses).

Perceived Employability Skills Gaps in High School Education

Along with the open-ended questions already discussed, we also asked all survey respondents to tell us about the job-related skills or knowledge that they *had not* learned in high school. Figure 1 uses the same coding categories to compare responses to this question to answers provided to our earlier question about job-related skills and knowledge that *had* been acquired in high school. The bars on the left in Figure 1 repeat the findings from column 1 in Table 1.

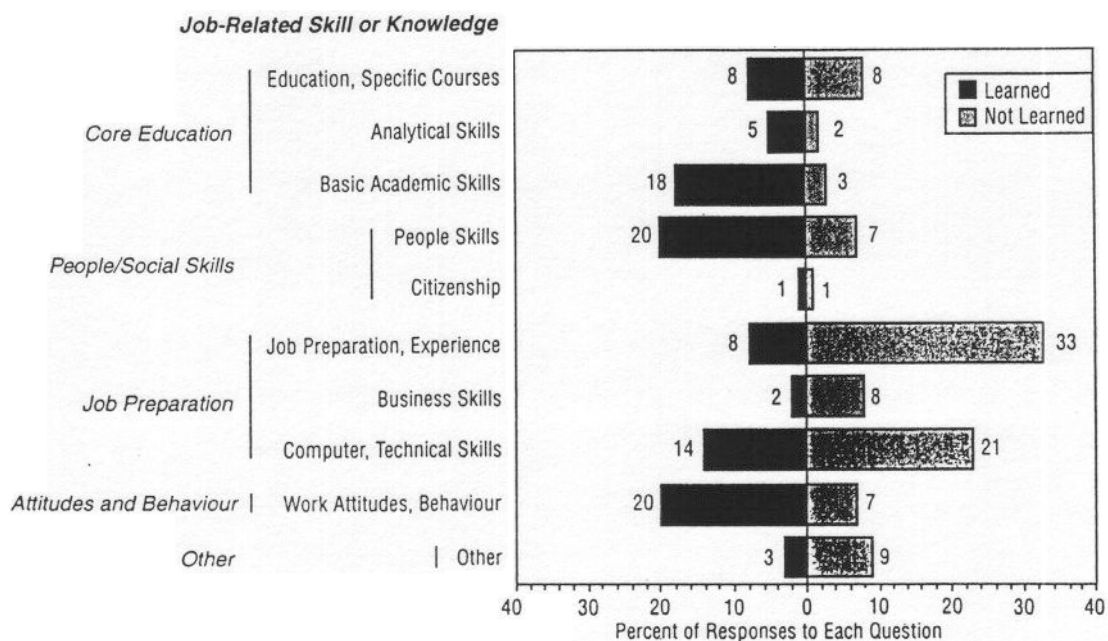
Before comparing the two percentage distributions in Figure 1, we must note that the bars on the left indicating what was learned in high school are based on more than twice as many responses as the bars on the right (3,817 versus 1,605). While all students had the opportunity to answer both questions, twice as many respondents (2,165 versus 1,099) commented on skills or knowledge they had acquired, compared to skills or knowledge they had not obtained. Recognizing that it may be easier to identify skills and knowledge that have been acquired, compared to skill deficiencies, Figure 1 nonetheless offers a fairly positive assessment of the secondary education system's contribution to the diverse skills and knowledge necessary for success in a range of adult roles.

The left side of Figure 1 reveals that twelfth-grade students are most likely to say that high school taught them people skills, work attitudes and behaviours, and basic academic skills. In contrast, the right side of Figure 1 documents two skill acquisition gaps. Respondents were most likely to state that high school had not provided them with specific job preparation/information/experience, for example, job-search skills, knowledge about workplaces, practical experience, and specific technical skills, especially computer skills.

Individual, Program and Workplace Variations in Skill/Knowledge Acquisition

The detailed skill/knowledge categories in Table 1 are too cumbersome for further cross-tabulations,

FIGURE 1
Most Useful Job-Related Skills/Knowledge Learned and Not Learned in High School



Note: Up to three responses were coded for each question. 2,165 respondents answered the question on what was learned in high school, giving 3,817 responses; 1,099 respondents answered the question about what was not learned but is needed, giving 1,605 responses.

particularly given the small percentages of responses in several categories. Consequently, before examining individual, high school program, and workplace variations in skill acquisition, we collapsed these categories into broader groups: *core education curriculum* (education, analytic skills); *people/social skills* (people skills, citizenship); *job preparation* (job preparation, business skills, technical/computer skills); *attitudes and behaviour* (work attitudes and behaviours); and *other responses* (none/few, other). Tables 2 through 5 highlight variations in responses to our four open-ended questions about skill acquisition using this aggregated set of categories. Since these cross-tabulations display multiple

responses — percentages are based on the number of responses, rather than the number of respondents — standard tests of statistical significance are inappropriate.⁶ Hence, we must rely on our sense of the substantive significance of the findings, rather than on the probability conventions of standard significance tests, to identify differences across subgroups that warrant discussion.

Females in the sample were more likely to report having learned people/social skills in their basic high school program, as were younger respondents (Table 2). Younger respondents were also more likely to mention that they had acquired job-appropriate

TABLE 2
Job-Related Skills/Knowledge Learned in High School by Gender, Age, Type of High School Program, and Average Grades

	Percent of Responses*					Total
	Core Education	People/Social Skills	Job Preparation	Attitudes/Behaviour	Other	
Total	31	21	25	20	3	100
Female	30	23	24	21	2	100
Male	33	18	26	19	4	100
Under 18	31	22	24	20	3	100
18 years	32	20	25	20	3	100
Over 18	33	17	33	14	3	100
<i>Type of High School Program</i>						
Academic	32	22	23	20	3	100
Non-academic	29	16	33	18	4	100
<i>Average Grades in Past Year</i>						
Grades < 65%	31	20	27	18	4	100
65% to 79%	30	21	26	20	3	100
80% +	34	22	20	22	2	100

Note: * Respondents were asked to describe the most useful job-related skills or knowledge learned in high school. Nineteen percent of the total sample did not answer the question. Up to three responses were coded for those who did answer. These 2,165 individuals provided a total of 3,814 responses. Percentages are based on the total number of responses, not respondents; therefore, tests for statistical significance of subgroup differences are not appropriate.

attitudes and behaviours via their high school program. In contrast, older sample members were considerably more likely to mention specific job-preparation skills. Individuals in non-academic programs also tended to comment on job-preparation skills, as did those with lower grades, suggesting that the "age" effect may be reflecting the over-representation of older students in non-academic programs. These older students might be more focused on getting into the labour market quickly.

Turning to skills/knowledge acquired from formal work-experience programs, again female respondents commented more frequently on people/

social skills (Table 3). Male sample members were more likely to mention the appropriate work attitudes/behaviours that they had acquired from their work-experience program (30 percent of responses compared to 15 percent for females). An interpretation of this finding requires more detailed information on the types of work-experience programs in which our sample members participated.

Some interesting but not easily interpreted differences are observed across types of work-experience program (Table 3). Individuals who had participated in work-experience courses or a co-op education program were considerably more likely

TABLE 3
 Job-Related Skills/Knowledge Learned from High School Work-Experience Program by Gender, Age,
 Type of Work Experience Program, and Time Spent in Work-Experience Program

	Percent of Responses*					Total
	Core Education	People/ Social Skills	Job Preparation	Attitudes/ Behaviour	Other	
Total		28	39		3	100
Female	10	34	39	15	2	100
Male	11	23	40	30	6	100
Under 18	12	30	39	16	3	100
18 years	8	28	40	20	4	100
Over 18	10	34	36	18	2	100
<i>Type of Work-Experience Program**</i>						
Workplace visit (< 1 day)	14	22	46	15	2	100
Work experience course	10	33	36	17	4	100
Co-op education program	11	35	30	21	3	100
Reg. apprenticeship	8	25	49	14	4	100
School-based business	11	24	39	24	2	100
<i>Time Spent in Work-Experience Program in Past Year</i>						
Up to 1 week	13	20	44	19	4	100
2 – 3 weeks	8	28	42	16	6	100
4 – 5 weeks	12	34	36	16	2	100
More than 5 weeks	8	36	39	16	1	100

Notes: * Respondents were asked to describe the most useful job-related skills or knowledge learned in their work-experience, work-study, or work-site learning programs. Seventy-seven percent of the total sample did not answer the question since they had not participated in any work-experience programs in their final year of high school. Up to three responses were coded for those who did answer. These 498 individuals provided a total of 807 responses. Percentages are based on the total number of responses, not respondents; therefore, tests for statistical significance of subgroup differences are not appropriate.

**Some respondents reported participating in more than one work-experience program. For these individuals, we cannot determine which program they were referring to when they identified the job-related skills or knowledge they had acquired.

to mention the acquisition of people/social skills. People/social skills may be heavily emphasized in the former, and more necessary in the latter. The small number of respondents who had taken a registered apprenticeship were most likely to comment on the specific job-preparation skills they had ac-

quired (49 percent of all their responses), as we might expect, given the trade-specific training provided in such programs. However, the larger number of individuals who had simply made a visit to a workplace for one day or less were also more inclined to mention job-preparation skills (46 percent

TABLE 4
Job-Related Skills/Knowledge Learned from Paid Employment by Gender, Age, Type of Job, and Average Hours Worked per Week

	<i>Percent of Responses*</i>					<i>Total</i>
	<i>Core Education</i>	<i>People/Social Skills</i>	<i>Job Preparation</i>	<i>Attitudes/Behaviour</i>	<i>Other</i>	
Total	8	39	29	22	2	100
Female	8	43	26	21	2	100
Male	8	35	32	22	3	100
Under 18	8	40	26	24	2	100
18 years	8	39	32	19	2	100
Over 18	8	38	28	22	4	100
<i>Type of Job (Current or Previously in School Year)</i>						
Semi-skilled sales/service	8	43	25	23	1	100
Unskilled sales/service	7	46	27	18	2	100
Clerical	11	31	33	19	6	100
Blue collar	8	18	43	27	4	100
Technical/managerial/professional	11	33	25	30	1	100
<i>Hours per Week in Paid Job</i>						
Up to 10	8	36	24	29	3	100
11 – 15	9	45	27	19	2	100
16 – 20	9	41	31	18	1	100
More than 20	6	37	33	21	3	100

Note: * Respondents were asked to describe the most useful job-related skills or knowledge learned in their paid job (current, or previously held during the school year). Twenty-eight percent of the total sample had not held a paying job at any time during the previous school year. An additional 5 percent had held a job, but did not answer the question. Up to three responses were coded for the 67 percent who did answer the question. These 1,792 individuals provided a total of 2,950 responses. Percentages are based on the total number of responses, not respondents; therefore, tests for statistical significance of subgroup differences are not appropriate.

of all responses). Furthermore, sample members who had participated in co-op programs and in school-based businesses were somewhat more inclined to emphasize the appropriate work attitudes and behaviours they had learned. These findings raise questions — which our research is unable to address — regarding the breadth and depth of skills/knowledge acquired via these different courses and programs.

Table 3 also cross-tabulates time spent in work-experience programs by the types of skill/knowledge acquired. Workplace visits constitute most of the programs described by sample members in the “up to one week” category, while co-op education and registered apprenticeships make up most of the programs described by those in the “more than five weeks” category. Hence, the “time spent in work-experience program” cross-tabulations essentially

mirror the "type of work experience" findings described above.

As noted earlier, a much larger proportion of these twelfth-grade students had held a paying job at some point during the previous school year (72 percent), compared to participating in a work-experience program in high school (23 percent). Table 4 focuses on the types of skills and knowledge that respondents acquired in paid jobs. Again, female respondents were more likely to mention the acquisition of people/social skills, while their male counterparts were somewhat more inclined to comment on specific job preparation skills. This may reflect the fact that more young women had been employed in service sector or retail jobs where people skills are more critical, compared to blue-collar jobs more often held by males. Alternatively, what we are seeing here, and in Tables 2 and 3, may be a result of gendered socialization patterns, with young women becoming aware sooner of the workplace importance of people/social skills.

Table 4 also cross-tabulates self-reported skill acquisition by the types of jobs held by these twelfth-grade students. Students who had worked in unskilled or semi-skilled sales and service jobs — the most common occupations — were considerably more likely than their classmates in other kinds of jobs to have acquired people/social skills through this work. By comparison, the smaller proportions of students in clerical and blue-collar jobs were more inclined to describe specific job preparation skills, perhaps because such jobs typically require more specific training. Appropriate work attitudes and behaviours were most likely to be mentioned by the small number of students in technical/managerial/professional jobs (Table 5). This finding may reflect the fact that these higher status jobs are typically found in larger work organizations where appropriate work attitudes/behaviours may be more necessary for fitting into "adult" work roles and relationships.

As we might expect, specific job-preparation skills are more likely to be acquired in jobs involv-

ing more hours per week (Table 4). In contrast, work attitudes/behaviours are more likely to be mentioned by students working fewer hours. This reflects the types of jobs held by students: those employed in technical/managerial/professional jobs tended to work fewer hours weekly.

Overall, the findings in Table 4 suggest that, along with the discretionary income that part-time employment provides for high school students, some employability skill development also takes place. However, we must caution that this study cannot comment on the extent of skill acquisition, nor the impact of such skills on subsequent labour market outcomes. Furthermore, we note that school-based work-experience programs are more likely to produce specific job preparation skills (Table 3 above), while volunteer work is more likely to generate people/social skills (Table 5 below). Hence, we should not make too strong a case for the skill-producing benefits of student part-time jobs.

Table 5 cross-tabulates skill acquisition from volunteer work by gender, age, and type of volunteer activity. What stands out is the contribution of volunteer work to developing people/social skills; 47 percent of all responses to this open-ended question from student volunteers fall into this category. Older student volunteers are somewhat more likely to mention that core educational curriculum skills were enhanced by volunteer work. Differences in skill acquisition across types of volunteer work are not particularly systematic, with two exceptions. Students who had volunteered in school or in religious organizations were less likely to mention specific job-preparation skills, commenting instead on the appropriate attitudes and behaviours they had learned.

Students' Perceptions of the Skills Employers Are Seeking

We asked one additional question relevant to the employability skills debate in this survey of Alberta twelfth-grade students: "In your opinion, what are the three most important things employers look for

TABLE 5
Job-Related Skills/Knowledge Learned from Volunteer Work by Gender, Age, and Type of Volunteer Work

	<i>Percent of Responses*</i>					<i>Total</i>
	<i>Core Education</i>	<i>People/Social Skills</i>	<i>Job Preparation</i>	<i>Attitudes/Behaviour</i>	<i>Other</i>	
Total		47			5	100
Female	11	48	15	24	2	100
Male	12	47	12	20	9	100
Under 18	10	48	13	25	4	100
18 years	14	47	14	19	6	100
Over 18	16	42	16	24	2	100
<i>Type of Volunteer Work (Current or Previously in School Year)</i>						
School-related	14	43	9	31	3	100
Church-related	9	53	7	28	3	100
Health-related	13	50	12	22	3	100
Sports-related	10	45	15	25	5	100
Fundraising	10	54	15	14	7	100
Other community organizations	12	47	16	19	6	100

Note: *Respondents were asked to describe the most useful job-related skills or knowledge learned in their volunteer work. Fifty-six percent of the total sample had not done any volunteer work in the previous nine months. An additional 7 percent had volunteered, but did not answer the question. Up to three responses were coded for the 37 percent who did answer the question. These 991 individuals provided a total of 1,519 responses. Percentages are based on the total number of responses, not respondents; therefore, tests for statistical significance of subgroup differences are not appropriate.

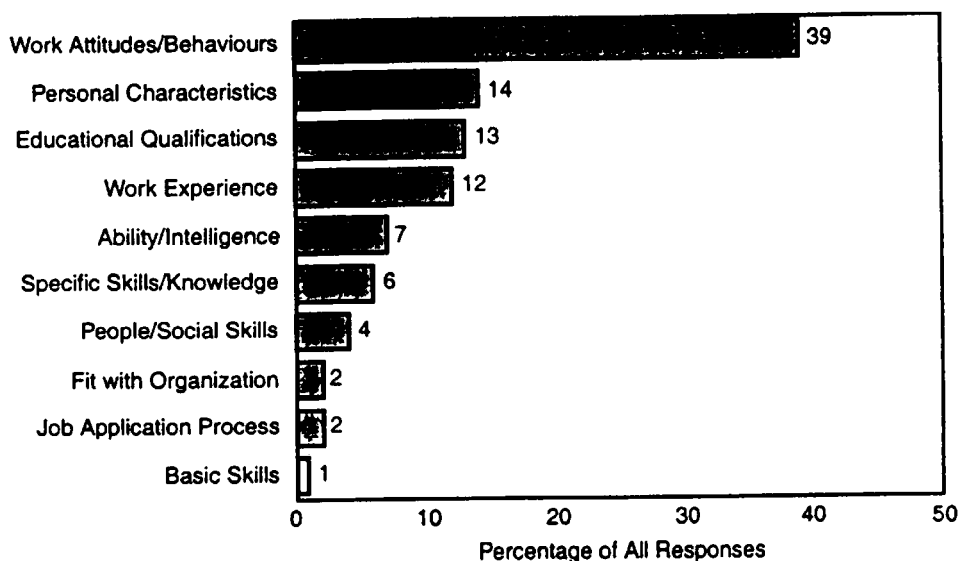
when hiring a high school graduate?" The 2,525 sample members who answered this open-ended question provided a total of 7,284 responses, which we coded into ten categories (Figure 2). Content analysis identified some categories that are similar to those used to code responses to the skill-acquisition questions, but a number of new categories also emerged.

Several interpretive caveats are required before discussing these findings. Whether or not employers actually hire on this basis, these perceptions of grade 12 students about what employers are seeking shed light on their understanding of the labour market. While we were interested in a general as-

essment of the skills and attributes needed to succeed in the labour market, we asked about the hiring of high school graduates so respondents could put themselves into the role of a young person seeking work. Even so, a few sample members may have responded with their perceptions of what is required for success in the student labour market.

That said, Figure 2 offers an interesting perspective on employers' frequent claims that young people lack specific job skills. High school seniors rarely mention actual job skills when asked what employers are seeking. Instead, four out of ten responses to this question (39 percent) focused on work

FIGURE 2
Most Important Things Employers Look for When Hiring a High School Graduate



Note: Respondents were asked to provide three answers. 2,525 respondents provided a total of 7,284 responses.

attitudes and behaviours. Fourteen percent of the responses to this question also mentioned personality characteristics, for example, being friendly or outgoing, while similar proportions commented on educational qualifications (13 percent) and work experience (12 percent). A smaller proportion (7 percent) made reference to individual ability or intelligence. It is noteworthy that, while they were most likely to mention that they had acquired people/social skills in their part-time paid jobs (Table 4) but not in their basic high school program (Figure 1), only 4 percent of the answers from these twelfth-grade students indicated that employers seek such skills when hiring (Figure 2). Even fewer (only 1 percent) mentioned basic academic skills such as reading, writing, or numeracy.

In short, many high school seniors recognize that employers make hiring decisions based on work at-

titudes and behaviours, and some understand employers' emphasis on qualifications and work experience. But very few students believe that people/social skills are in demand by employers, even though these same students frequently comment on how their school and work experiences have enhanced such skills.

POLICY IMPLICATIONS

This paper has highlighted the range of employability skills that high school seniors believe they have acquired from four main sources: the secondary school system in general, formal work-experience programs, part-time paid employment, and volunteer work. The debate about young people's employability skills rests on the assumptions that high school students do not acquire such key skills

and are unaware of their importance. In large part, this is because the Employability Skills Profile and other similar typologies of job-relevant skills are based primarily on employers' assessments of skill needs. We provide some balance to this debate by documenting high school seniors' own perceptions about the employability skills they have acquired and that they believe employers are seeking. The two different stakeholder groups do not share exactly the same concerns.

Overall, in contrast to employers' expressed concerns about absent employability skills among Canadian youth, high school seniors reported the acquisition of a wide range of employability skills. A limitation of our methodology is that we did not ask about the level of skill acquisition or the specific content of the skills they reported — issues best addressed through even more qualitative research, such as interviews and focus groups. Regardless, the array of different types of employability skills reported by youth is an important finding, given that our respondents are at a crucial juncture in the transition from school to work, making key decisions about their further education and careers.

When asked about the job-relevant skills and knowledge they had acquired in various settings, the responses from the Alberta twelfth graders in our sample could be grouped in four basic categories: *people skills* (e.g., social and interpersonal skills, helping others, teamwork, conflict resolution), *work attitudes and behaviours* (e.g., discipline, hard work, time management, leadership); *basic academic skills* (e.g., speaking, numeracy, writing, reading); and *specific technical/computer skills*. People skills and attitudes/behaviours tended to be mentioned most often. It is possible that this emphasis reflects the respondents' developmental stage: teenagers are very conscious of their social roles and relationships in all settings, and their jobs typically involve customer service. Testing this proposition would require longitudinal data tracking how perceptions of employability skills change as youth acquire further education and work experience.

In contrast, high school education per se and analytic skills were viewed by relatively few respondents as useful for employment. Thus, despite the strong emphasis in the employability skills discourse on basic knowledge and skills as cornerstones for the development of more specific skills and for life-long learning, this message is not getting through to the majority of high school students. This point is reinforced by the finding that, when asked what job-related skills they had *not* learned in school, students' responses reflected a narrow focus on specific job preparation, experiences, or skills, rather than a broad focus on fundamental competencies and abilities. In retrospect, it would have been useful to also ask about skills and knowledge *not* learned in paid employment, work-experience programs, and volunteer work, to complement the question about job-related skills *not* acquired in high school.

Even so, our analyses revealed notable differences in the settings in which employability skills had been acquired. Core knowledge and broader perspectives were most likely to have been obtained in high school itself, while people and social skills were more often linked to paid and volunteer work. Specific job-preparation skills were mentioned more often as products of formal work-experience programs, while citizenship values tended to be attributed to participation in volunteer activities.

A key educational policy question is whether or not high schools should further emphasize specific job-related skills or provide greater opportunities for work experience. Our findings echo frequently heard concerns about insufficient skill, knowledge, and experience that today's high school graduates take into the labour market. Strategies in this regard must be evidence-based and in this respect, further research is needed to evaluate the job-specific skill development potential of different types of high school work-experience programs. But given the fundamental importance of a broadly based academic curriculum for life-long learning, we would suggest that further emphasis in these areas should

be encouraged only if core curriculum and basic academic skills continue to receive as much attention as before. These points underscore the need for clearly delineated roles and responsibilities for schools, employers, and community organizations in enabling high school students to acquire a wide range of competencies.

When asked what employers are seeking in terms of employability skills, high school seniors seldom mentioned specific job skills. Instead, they believe that employers were most interested in appropriate work attitudes and behaviours, which is consistent with their earlier emphasis on having acquired such skills. These young people seem to be accurately portraying the youth, or student, labour market. The limited research on the topic suggests that employers frequently hire according to one limited set of criteria, for example, attitudes and behaviour, while lamenting the failure of the educational system in developing basic academic and more specific job-preparation skills (Cappelli 1992; Holzer 1996).

Our findings indicate that graduating high school students are generally aware of the importance of employability skills. However, this awareness reflects their limited and therefore impressionistic labour market experiences rather than being grounded in a longer term view of what they will require in the future as adult workers, both in terms of formal education and job skills. While work experience and cooperative education initiatives at the high school level are important means for helping young people develop a wider range of employability skills, there is still a need to highlight for them (and also for many employers) the link between core academic subjects and future employment success. Preliminary indications from more recent research identify the very limited opportunities for students to discuss, with teachers and fellow students, the relevance of their formal education and their work experience to future employment outcomes (Lehmann and Taylor 2001). Further research could usefully examine two key issues in this regard: the influence of students' early work experiences on

their future educational and career decisions, and how students themselves perceive this relationship; and the most effective means for communicating to students the changing skill requirements of the adult labour market and the relevance of their formal education to this labour market.

All of this suggests a need for an integrated educational and labour market policy framework, capable of balancing the broad mandate of the education system with the changing needs of the labour market. Several provinces recently have attempted to incorporate vocational educational objectives within an academically grounded curriculum. For example, in Alberta, the Conference Board of Canada's Employability Skills Profile has influenced revisions of vocational education curriculum in secondary schools. Such training is now offered via modularized one-credit courses within a program called Career and Technology Studies (CTS). These courses concentrate heavily on skills identified in the ESP, advancing from general exploratory courses to advanced courses covering occupation-specific content. Other provinces have made either work experience, British Columbia, for example, or community volunteer work (Ontario) mandatory at the high school level, once again the goal being the enhancement of employability skills.

These initiatives require careful evaluation to determine their effectiveness and impact on broader academic goals. Such research could be expanded to include the skill acquisition process itself. A number of limitations are evident. For example, Alberta's vocational education and work-experience courses are voluntary and mostly attract students who are less academically oriented (Lowe, Krahn and Bowlby 1997). Furthermore, most vocational education or work-experience courses remain focused on lower-level workplace attitudes and skills. Thus, the students most likely to enter the workforce immediately upon high school graduation are least likely to graduate with the necessary cornerstone knowledge and skills. Moreover, employers are reluctant to hire young people — particularly those

without university education — into positions requiring higher level employability skills. Even in cases where high school students have participated in work-experience programs, their placement employers generally do not consider them for future full-time employment (Thiessen and Looker 1999). More attention must be paid to determining what would encourage employers to provide more opportunities for skill development to the young people they hire. The contradictory relationship between employers' stated skill needs and their actual hiring practices has received little attention from researchers.

NOTES

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¹The Expert Panel examined five strategic industries: aerospace, automotive, bio-technologies, environmental technologies, and information and communications technologies.

²A good example of objective testing would be the formal tests of numeracy and literacy developed for the International Adult Literacy Survey (OECD/Statistics Canada 1995).

³Statistics Canada used direct assessment in its more recent *National Graduate Surveys* which ask university graduates three linked sets of questions about skill level, skill acquisition from higher education, and skill use on the job (see Krahn and Bowlby 1999).

⁴Once we had developed the coding scheme, a small team of trained and supervised coders spent several weeks coding the open-ended data. Any questions about difficult-to-code answers were discussed in daily team meetings with one of the principal investigators to ensure a high level of coding reliability.

⁵The logic underlying our assessment of construct validity requires the use of the same tables we subsequently used to highlight our research findings. Specifically, we began with general predictions about the types of employability skills that might be acquired from different educational and employment experiences, and then collected data designed to test these hypotheses. However, before discussing the findings, we use the same crosstabulations to assess the validity of our measures.

⁶Using the number of responses rather than the number of respondents generates an 'N' that is larger than the sample size, thus making it much easier than it should be to attain statistical significance. An alternative approach would be to use only one response from each respondent, but this would mean that almost half of the information about employability skills provided by respondents would not be utilized.

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