"I KNOW HOW TO DO IT": RESEARCH PRIORITIES FOR COOPERATIVE AND CAREER EDUCATION IN CANADA'S SECONDARY SCHOOLS

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Notes

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Abstract

This paper responds to the request of the Council of Ministers of Education, Canada for a paper to set research priorities in the area of education and work. In this case, the paper is concerned with cooperative education and with those parts of career education that involve workplace learning, all at the secondary level. The intent of the paper was to review policy and research so that five significant research questions could be identified that would be important to the development and implementation of policy for cooperative and career education in schools. Our view is that this area is inherently part of the secondary school curriculum. This view dictates that curriculum commonplaces be used as perspectives for reviewing the literature and for preparing the arguments of the paper. The perspectives we chose are: Curriculum in the Workplace, Knowledge and Learning, Inclusion and Students, and Assessment. Research questions were identified for these perspectives, as follows:

Curriculum in the Workplace

1. What types of goals may be realistically achieved by cooperative education (or by other forms of work experience), and to what extent are these goals context-specific?

Knowledge and Learning

2. What are the essential features of learning within experience that can be used to significantly enhance workplace learning during cooperative education and other work experiences provided by schools?

Inclusion and Students

3. What features of cooperative education enhance the inclusion of and meet the learning needs of exceptional students?

4. What features of cooperative education enhance the inclusion of and meet the learning needs of First Nations students and students from under-represented groups?

Assessment

5. How can the objectives of cooperative education best be assessed, and how can cooperative education programs be evaluated for their overall effectiveness?

Introduction

As part of its Pan-Canadian Education Research Agenda, the Council of Ministers of Education, Canada (CMEC) commissioned a series of background research papers on specific areas of education. The intent was to have each paper identify five major research questions on existing and emerging policy issues. The present paper responds to CMEC's request for a paper on education and the link with the labour market, with special attention to cooperative education. Cooperative education, in which schools cooperate with employers, involves students in extended periods of time at a workplace while enrolled in full-time study. Typically, students also engage in classroom orientations to the workplace and in reflective seminars. As suggested by the subtitle of this paper, we have interpreted cooperative education to include aspects of career education within workplaces, and we have limited ourselves to the secondary panel.[1] Our experience in developing background research papers for the Ontario Secondary School Curriculum Reform (e.g., Hutchinson, Munby, & Chin, 1997) has influenced our view of the importance of experience and experiential knowledge for students with varied destinations from trades through to the professions. In addition, our work with background papers has sharpened our view on the importance of (a) educational policies that are inclusive, and (b) opportunities for workplace learning for exceptional students.

Our approach to examining policy and research in cooperative education reflects our commitment to viewing this area as curriculum. This view allows us to use four curriculum commonplaces as perspectives for determining a research agenda for CMEC. The perspectives are: Curriculum in the Workplace, Knowledge and Learning, Inclusion and Students, and Assessment. The research approaches used for these perspectives are described below, followed by four major sections, one for each of these four perspectives. A summary presents the five questions we believe should be featured in CMEC's research agenda.

Research Approaches

The principal strategies for the discussion paper were data collection and analysis. Data consists of policy documents and research reports. Searches of the World Wide Web, telephone calls, and e-mail messages were used to obtain relevant policy documents from provincial and territorial governments. Our initial focus was documentation from provinces and territories with a long history of career and cooperative education programs—e.g., British Columbia's (BC) Career and Personal Planning (CaPP) (BC Education, 1997a), Alberta's Career and Life Management (CALM) (Alberta Education, 1998). Then we attempted to collect and analyse the entire set of relevant documents for secondary education in Canada. Documents from the private and public sectors have been used to sample policy priorities. For example, the Conference Board of Canada's "Employability Skills Profile" (McLaughlin, 1992) and the Canadian Federation of Independent Business (CFIB) (1998) study showed something of what specific sectors of the economy expect of the education system.

Informal surveys were sent to provincial and territorial ministries and departments to obtain estimates of cooperative education registrations as a function of secondary school enrolments, and to collect demographic accounts of the students who register in off-campus work-based courses. Unfortunately, the survey data were not formally analysed for this paper because (a) there were

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[1] This paper does not consider apprenticeship courses or programs.

gaps in data reported to us, and (b) there were differences in how jurisdictions reported enrolments. Our research team's current activity includes regular reviewing of the research literature using educational database tools and secondary sources. In addition to updating its regular searches, the team used Web sites such as the Co-operative, Career and Work Experience Association of Canada (CCWEAC) to identify further sources.

The First Perspective: Curriculum in the Workplace

Our view of this area as curriculum demanded that we consider curiculum questions like, "What are the stated goals of cooperative and career education?" "How much of the cooperative education curriculum is related to career education and how much related to the school subject?" Although cooperative education is generally understood to be an opportunity for communities and schools to cooperate in the education of youth, what counts as cooperative education varies widely. As we show below, interpretations range from (a) providing workplace experiences that enhance academic courses to (b) offering opportunities to learn about work, occupations, and careers from workplace experience. This section of the paper begins with a review of provincial and territorial policy for cooperative education and off-campus career education. It is followed by an overview of expectations for this part of the curriculum held by other stakeholders. Next, the section provides a brief review of the relevant research literature, leading to the identification of a research question.

Describing the Policies[2]

BC's Career Preparation programs for grade 11 and 12 provide students "with entry level skills in apprenticeable occupations" in 100 hours of work experience (BC Education, n.d.). BC's Work Experience (a minimum of 30 hours) is a component of CaPP and has goals such as demonstrating employability skills, understanding the organizational structure within the workplace (BC Education, 1997a). In addition, there are two approaches to cooperative education: a career exploratory program especially for students at risk, and a program to enhance academic or mainstream students' career planning options. (The Yukon Territory follows the BC curriculum but cooperative education is developed locally.)

Alberta's Off-Campus Education is "an experiential method of learning that integrates students' classroom studies with on-the-job experiences obtained at an employing organization" (Alberta Education, 1997a, p. iv). It is designed to "enable students to acquire knowledge, skills and attitudes related to work and other life roles" (p. iv). There are four types: work experience programs (off-campus experiential learning), cooperative education, work study—integrated with a course such as Integrated Occupational Program (IOP) (Alberta Education, 1994)—and registered apprenticeship programs. The goals are to provide knowledge, skills, and attitudes demanded by business, to assist in school to work transition, and to explore and expand career interests and aptitudes (Alberta Education, 1997a, p. 1). Alberta's Work Experience 15-25-35 series of courses is unique because it is developmental—15 is a prerequisite for 25 and 35 (Alberta Education, 1997b). The Northwest Territories has no regular cooperative education program, but work experience is available through an adaptation of Alberta's Career and Technology Studies (CTS) (Alberta Education, 1998).

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[2] Information about the offerings of cooperative education in the secondary schools of Quebec was not available before this paper was completed.

Saskatchewan offers both cooperative education and work experience (Saskatchewan Education, 1989). For example, the Regina School Division (n.d.) describes cooperative education combining "resources of schools and community to provide learning experiences for students with varied interests, abilities and capabilities" (p. 1). The program objectives of Saskatchewan's Work Experience Education (Saskatchewan Education, 1989) reflect the provinces Common Essential Learnings and are similar to those found in Alberta's CALM and BC's CaPP, for example "display initiative and pursue tasks diligently" (p. 4). The career exploration intended for this program is clear in the goal, "appreciate the diversity and breadth of career opportunities" (p. 4). When this paper was written, Manitoba's 1989 policies for cooperative and career education were under revision and were unavailable. But Web sites like St. James Assiniboia School Division (n.d.) suggest that cooperative education can function as a bridge to employment.

Ontario's secondary school curriculum is "under construction" (to use Web argot). The 1989 policy still in force sees cooperative education as a "mode of delivery" for an academic credit course (Ontario Ministry of Education, 1989). Current drafts of new policy suggest that workplace learning will take two forms: (a) development of Ontario's cooperative education program so that the semester-long placements "enhance the school program through real-life applications and expose students and teachers to up-to-date workplace practices" (Ontario Ministry of Education and Training, 1998a, p. 15), and promote awareness of career opportunities; (b) Work Experience of one to four weeks of work-study components in regular courses. Forty hours of community service over the secondary school career may also be required.

The two goals of cooperative education in Ontario—subject-based and career exploration—are evident in the policy for Newfoundland and Labrador where cooperative education "provides students with the opportunity to enhance their in-school learning while developing a greater awareness and understanding of the world of work" (Newfoundland and Labrador Department of Education, 1992, p. 1). Cooperative Education and Work Experience in Nova Scotia fall under Community-Based Education (Nova Scotia Department of Education, 1997-98), with work experience clearly identified as a segment of career education ranging from one half-day per week to blocks of up to three weeks. Cooperative education, though, is intended to be combined with an academic credit course, as it is in Ontario. (Nova Scotia is also redesigning this portion of the secondary school curriculum.)

In contrast, New Brunswick's cooperative education is aimed at career exploration, and has objectives such as providing exploratory experiences in a variety of work roles and aiding vocational development (New Brunswick Department of Education, 1994). Similarly, cooperative education in Prince Edward Island (PEI) is exclusively directed at career education, "to enable high school students to have an understanding of the world of work, to become aware of personal aptitudes and skills, to explore a number of careers/occupations and [to] develop employment skills that will enable them to become productive and satisfied workers in society" (PEI Department of Education, 1995, p. 68).

The Pan-Canadian Context

The federal commitment to cooperative education is evident in the development program of Indian and Northern Affairs Canada (1997), and in Human Resources Development Canada's (HRDC) (n.d.) sponsorship of specific programs, albeit at the tertiary level. Also, CCWEAC (1997) has recently initiated a project, Community Access Program with Industry Canada to establish centres for information technology training.

Support for the career-oriented goals of cooperative education is available in private sector publications. Probably, the most cited of these is "Employability Skills Profile" (McLaughlin, 1992). A recent study conducted by the CFIB (1998) encouraged schools to provide as much contact as possible between students and the business community, specifically citing cooperative education as a valuable vehicle. An earlier survey of 11,000 small and medium enterprises showed that 66 per cent had hired former cooperative education students, and that cooperative education has become "a necessary step on the road to employment for young people" (Arnau, 1997, p. 2). And the Canadian Labour Force Development Board (1994) recommended cooperative education as a central component of the transition to work.

Cooperative Education's Curriculum Aims and Content

The above reveals that the majority of policy texts and non-governmental sources sees cooperative education as performing significant service for vocational, career, and personal growth. A minority position is that cooperative education can enhance (if not fully provide) the content of secondary school academic courses—cooperative education becomes a "mode of delivery" or a program structure. But the distinction between the two purposes may be artificial: it is difficult to envisage a cooperative placement in which a student acquires knowledge related to academic courses but learns nothing about career or personal development. Our case studies of learning in cooperative placements suggest that subject knowledge and career-related learning are inseparable (Munby, Cunningham, & Chin, 1998). In the school, subject matter is separated by disciplines, whereas the demands of the workplace require integration of knowledge, skills, and dispositions. The place of work experience in public education can also be supported on the grounds of liberal education. For example, Lewis (1998) drew upon sources like Dewey and the 1991 Secretary's Commission on Achieving Necessary Skills (SCANS) to show that cooperative education is a necessary component of a liberal education: understanding work is part of cultural literacy.

For us, the significant questions about the aims of cooperative education are about the types of learning that the workplace is meant to provide. Characteristically, objectives for such placements speak to skills, attitudes, values, and beliefs. For example, the recent resurgence of interest in vocational education in the US can be attributed to SCANS (Wraga, 1998), which described three basic competencies: basic skills, thinking skills, and interpersonal qualities. These sound similar to the Conference Board's employability skills: academic skills, personal management skills, and teamwork skills (McLaughlin, 1992), and to variations of these that are found in many of the policy documents noted above. But the concept of "generalized skills" needs to be questioned. Over a decade ago, Resnick (1987) explained the isolation of school and work by contrasting the teaching of generalizable skills in school with situation-specific learning of skills and knowledge in the workplace. He showed that school learning primarily involved symbol manipulation while workplace learning involved contextualized reasoning used outside school. Recent evidence supporting this view is given in "Do Employers Need the Skills They Want?" in which Stasz (1997) showed that the work context is significant to acquiring skills. He suggested that "the relationship of skills to performance at work is largely unstudied" (p. 220).

A detailed examination of concepts like thinking skills and problem-solving skills is beyond the

scope of this paper. (And these are just two of the skills that are mentioned as goals of cooperative education.) Suffice it to say that the idea of generalizable thinking skills or problem-solving skills is problematic. According to Mayer and Wittrock (1996), advances in understanding problem solving have still not revealed what general cognitive abilities can be taught for transfer. These circumstances suggest that we need to know much more about what we can expect cooperative education specifically (or work experience more generally) to contribute to a secondary school student's education.

A Question for Research

There are many versions of goals and objectives for cooperative and career education and for work experience. And the merit of these objectives is to some extent unquestionable: they appear to be consistent with policy statements about the goals of schooling and with the expressions of the private sector. The curriculum issue is whether or not these goals are attainable in workplace settings. Attention needs to be given to the character and transferability of these goals.

The question is:

> *What types of goals may be realistically achieved by cooperative education (or by other forms of work experience), and to what extent are these goals context-specific?*

The Second Perspective: Knowledge and Learning

The title of this paper, "I know how to do it"—from a cooperative student in one of our case studies (Munby et al., 1998)—points to the value of work experience, but sheds no light on the nature of this knowledge and how it is acquired. These concerns are our second perspective. The world of work is characterized by action, and although representational (factual or declarative) knowledge plays a role, effective action is not simply a matter of putting representational knowledge into practice. Similarly, workplace learning involves enactment and not just representation—the form of knowledge typically associated with school. This suggests that the distinctive character of workplace knowledge and learning can and should be reflected in cooperative education. But our review shows that the research is disappointing: there is little known about the impact of cooperative education on students, and there is little known about how we learn in the world of action.

Although there is a small literature on cooperative education, much of it concerns tertiary programs; for instance, Wilson (1997) reviewed 12 years of studies finding that programs are generally successful. Very little of the literature on secondary school cooperative education qualifies as research. There are principles for establishing programs and managing them (Ashton & Saxton, 1992; Hamilton & Hamilton, 1996; Ricks, 1996), there are models for assessment (Branton et al., 1992), and one study of student satisfaction (Griffith, 1993). The sociological study of induction (Simon, Dippo, & Shenke, 1991) is rarely mentioned. Indeed, references to *learning* in these

sources are frequently to Dewey, to Marsick, and to Schön (1983, 1987). The research by Marsick (1987) and Watkins and Marsick (1992) on learning from experience was concerned with organizational structures, and the focus was upon institutional learning, the participants were adults, and the data collection did not involve observations of learning.

There are some studies of informal learning, but although such studies are "critical to the current enthusiasm for work-based apprenticeships, [they] are so few as to preclude a review of any length" (Berryman, 1993, p. 345). Billett (1992, 1996) attempted to model workplace learning. He proposed that learning, problem solving, and knowledge transfer are similar processes, and are contingent upon individuals' interpretive construction of the problem situation. His emphasis is upon problem solving in terms of representational or declarative knowledge, and there is no consideration given to action or procedural knowledge. Other research concerning students and the workplace tends to feature the school to work transitions (Lesgold, Feuer, & Black, 1997), or the relationship between schools and work through job training. For example, Grubb (1996) provided a history of job-related education in the US. These efforts, he argued, were largely unsuccessful because they separated job-training programs from the more successful educational system.

Two recent studies summarize the state of our knowledge. Stasz (1997) noted that "While most workers learn by doing, we don't know much about learning on the job—how it happens, what conditions promote it, and how it affects productivity" (p. 220). Harnish and Wilke-Schnaufer (1998) recognized the importance of research on contextual learning and experiential learning strategies. But they found that little attention had been given to how a learning experience in the workplace might be designed, in contrast to the careful and systematic design that goes into school learning experiences.

Frameworks for Looking at Learning

The primacy of experience has been advocated by established scholars (e.g., Dewey, 1938), and research on learning from experience is not new. What is new within this body of literature is the importance placed on determining which elements of experience are significant. Recent work in situated cognition focuses on both the cognitive and contextual features of how one learns in the workplace, of how experienced practitioners "scaffold" such learning, and of how learners come to appropriate necessary knowledge (Lave & Wenger, 1991). Research in situated learning also acknowledges the importance of cultural aspects of an institution, and as such, lends itself to studies of apprenticeship and how novices become legitimate peripheral participants (Brown, Collins, & Duguid, 1989). This can be seen as a focus on how people are enculturated in a new social setting, which contrasts with research on features of institutional learning (Marsick & Watkins, 1987). Bandura and Jeffrey's (1973) work on vicarious learning and visual learning is also germane to understanding how the workplace contributes to student learning. These approaches point to the importance of theoretical models that differentiate forms of knowledge and learning. A potentially useful model is by Bereiter and Scardamalia (1992), which distinguished formal knowledge, procedural knowledge, informal knowledge, impressionistic knowledge, and self-regulatory knowledge.

Schön's (1983) epistemology of practice provides an approach to studying and conceptualizing experiential learning. His later work (Schön, 1987) highlighted how experienced practitioners can "coach" novices in a reflective practicum. Such research primarily focuses on the cognitive aspects of learning from experience. The study of how novices learn within the workplace requires that theoretical frameworks are broad enough to capture the relationship between experience and knowing, as well as to capture the processes and features involved in this form of learning. Munby's work on the authority of experience (e.g., Munby & Russell, 1994) established the function of personal understanding gained through a learner's reflective stance.

The significance of experience coheres with constructivist theories of learning: knowledge is constructed and not simply absorbed, and students create personal meaning from combining new and prior knowledge (Marshall, 1992). Thus students should be encouraged to discuss, to role-play, to give explanations to others, to connect new knowledge to personal experience, and to apply knowledge to new situations. And because students learn better when they know the goals for learning and the characteristics of good performance and understanding (Vygotsky, 1987), goals and standards should be discussed, and students should have opportunities for self- and peer-evaluation, as well as for reflection. An important part of learning is understanding when and how to adapt what one knows (Brown, Collins, & Duguid, 1989). Contemporary accounts also recognise that learning is socially constructed (Rogoff & Lave, 1984). The implications are that students need to work and think with peers, to assume a variety of roles, and to be evaluated on group processes and products. These views of learning are consistent with the content and processes of cooperative and career education, where there is an emphasis on self-awareness, on interpersonal development, on awareness of careers, and on decision-making. The recognition that knowledge is personally constructed and socially mediated has profound implications for how the workplace can provide students with authentic learning in preparation for their working lives.

Case studies of learning in a veterinary clinic reported on different types of learning available in the workplace and on how the setting provides opportunities for learning (Munby et al., 1998; Chin, Young, & Munby, 1998). These studies plainly show the need for sustained research in cooperative education to enhance learning for adolescents in non-school settings (e.g., Hutchinson, Munby, & Chin, 1997).

A Question for Research

Despite the attention given to cooperative education and work experience by Canada's school systems, little is known about the quality of student learning in these settings and about how learning in the workplace can be enhanced. Theoretical frameworks, like those of Schön, and studies in situated cognition share a recognition of the importance of learning within an authentic context. Selection from these available frameworks would be a necessary first step in developing research information that could enhance the cooperative experiences of students.

The question is:

> *What are the essential features of learning within experience that can be used to significantly enhance workplace learning during cooperative education and other work experiences provided by schools?*

The Third Perspective: Inclusion and Students

Canada was the first country to guarantee constitutionally the rights of persons with a disability to legal equality. One implication of this guarantee is that schools ensure cooperative education placements are available to all students who can benefit from them, and that workplace supervisors are sensitive to how exceptional students learn. In this paper, inclusion refers primarily to adolescents with physical disabilities or learning disabilities. Most provinces and territories have adopted the term "inclusive" to describe their approaches to providing services for exceptional students (Friend, Bursuck, & Hutchinson, 1998). The BC School Act, section 1 states, "A Principle of Inclusion, adopted in BC schools, supports equitable access to learning by all students and the opportunity for all students to pursue their goals in all aspects of their education" (cited in BC Education, Training, and Employment, 1995). In the case of exceptional students—students with disabilities and gifted students—these goals are described in Individual Education Plans (IEPs), the formal documents used for planning their programs.

The following analysis is based on documents provided by Alberta, BC, Ontario, Saskatchewan, Nova Scotia, New Brunswick, PEI, and Newfoundland. Alberta, BC and Ontario, the three largest English-speaking provinces, have recently reformed secondary education, including cooperative and career education. (Yukon and Northwest Territories use BC and Alberta curricula, respectively.) To analyse these documents for their attention to inclusion, we asked three questions: Is cooperative or career education a mandatory graduation requirement? Is inclusion mentioned explicitly in the policies on cooperative or career education? Do tailored programs provide cooperative or career education specifically for exceptional adolescents?

If cooperative education or career education is mandatory in a province or territory, then it is likely that all exceptional students will participate in such courses. Only recently revised curricula require such courses. In Alberta, all students must complete CALM 20, a grade 11 career education course; however, there are no mandatory courses in cooperative education. In BC, CaPP is mandatory for graduation and involves career education and 30 hours of work experience. Ontario's emerging secondary curricula will mandate a grade 9 course in Career Studies with no necessary work component. Ontario can be expected to require 40 hours of community involvement, a form of work experience in community agencies and associations. No other jurisdictions' curricula require career or cooperative education. The answer to our first question is that only recent mandates ensure that exceptional students in three provinces are included in career education, and while two mandate a form of work experience, none requires cooperative education.

If inclusion of exceptional students were mentioned explicitly in the policies on cooperative or career education, then this would demonstrate commitment at the policy level. The Alberta Education (1997a) *Off-Campus Education Guide* contains explicit references to both special needs and gifted students (p. 22); however, the Alberta Education (1997c) *Guide to Education for Students with Special Needs* contains no references to cooperative education. The recently released policy documents for BC are highly integrated and cross-referenced. Appendix C of *CaPP (8 to 12)* (BC Education, 1997a) contains a standard section entitled "Special Needs." BC's *Special Education Services: A Manual of Policies, Procedures and Guidelines* (BC Education, 1995) contains a section on Work Experience/Job Training that states, "As in other areas of the curriculum, work experience and job training activities should be individualized for students with

special needs. Such adjustments and support services should be documented in the IEP." Ontario's emerging documents could contain such cross-references. The new requirements for IEPs in Ontario mandate a transition plan for all exceptional secondary students as part of the IEP (Ontario Ministry of Education and Training, 1998b). Policy directives are expected to specify that cooperative education supervisors are to be involved in this process.

Saskatchewan's *Work Experience Guidelines* (Saskatchewan Education, 1989) warns that, "While academic achievement is important, it should not be the only criterion by which students are identified [for work experience]. In many cases, students who are having difficulty adjusting to a full academic timetable in school prove to be responsible and successful at the work placement" (p. 19). There are also explicit references to accommodating students with physical or other disabilities. Similarly *New Brunswick Co-operative Education Policies and Procedures* recommends that students of all program levels should participate in work experience (New Brunswick Department of Education, 1992, p. 10). Thus five jurisdictions in Canada refer explicitly to inclusion of exceptional learners in policies on career or cooperative education or work experience: three provinces that have recently developed or are developing new curricula (BC, Alberta, Ontario), and two provinces with a tradition of integration of exceptional students (Saskatchewan, New Brunswick). The BC guidelines are a model for ensuring that inclusion of exceptional learners is part of every document.

The needs of exceptional adolescents for learning from experience are more likely to be met within tailored programs providing cooperative or career education. Alberta provides IEP (Alberta Education, 1994) to prepare exceptional students (with ability in the normal range) for entry-level jobs. BC suggests work experience and job training activities appear in the IEP with a list of accommodations. BC is currently developing new policy to support Career Preparation Programs, which were intended to provide grade 11 and 12 students with entry-level skills. Ontario's Regulation 181/98 requires a transition plan to work or postsecondary education, with participation of cooperative education teachers in the IEP (Ontario Ministry of Education and Training, 1998b). Many documents from other provinces refer to vocational education opportunities for exceptional and low-achieving students. However, there are no dedicated cooperative education programs and surprisingly few dedicated work experience programs for exceptional adolescents described in these documents.

Our general survey data from across Canada show that about 10 per cent of secondary school students are enrolled in cooperative education or extended work experience at any point in time. We could not determine the participation rate of exceptional students in cooperative education from these data. Instead, data from a sample of 32 secondary schools across Ontario were used to estimate if exceptional adolescents were represented proportionately in cooperative education. Of a total enrolment of 27,760 students in the sample, 4,599 were identified as exceptional (17 per cent). Of the 2,424 who were enrolled in cooperative education, 515 were identified as exceptional (21 per cent). This suggests that exceptional students were more than proportionately represented in cooperative education, but given their need for experiential and career education, their rate of enrolment in cooperative education appears lower than desirable.

Research suggests that adolescents with disabilities can benefit from cooperative and career

education (e.g., Tennant, Hutchinson, & Freeman, 1992). Without structured interventions, they tend to be late in developing self-awareness and career awareness and in making career decisions when compared to non-disabled peers (Biller, 1987). As adults, they often have high rates of unemployment and underemployment (Annable, 1993). However, adolescents with disabilities tend to learn well in structured, hands-on, experiential settings, often much better than in traditional classrooms (e.g., Hutchinson, Freeman, Downey, & Kilbreath, 1992).

Questions for Research

This section has focussed on exceptional learners, and this is not intended to mask the rights of other students who may experience difficulty in accessing educational opportunities. The paper has not the space to review research on the inclusion of First Nations students nor of students from under-represented groups. Our two questions reflect the importance of attending to the needs of all such learners:

> *What features of cooperative education enhance the inclusion of and meet the learning needs of exceptional students?*
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> *What features of cooperative education enhance the inclusion of and meet the learning needs of First Nations students and students from under-represented groups?*

The Fourth Perspective: Assessment

Assessing action is complex. Approaches that analyse actions into simple behavioural components tend to overlook complex performance. We prefer approaches that meet the criteria of authenticity. Specifically, authentic assessment refers to assessment methods that examine a student's ability to solve problems or perform tasks in contexts that resemble authentic situations (Fischer & King, 1995). Such approaches are concerned with informed judgments about what individuals know and can do.

Authentic assessment is characterized by tasks that are worth doing for their own sake because they involve learning or practice. Assessment tasks are designed so that they resemble as closely as possible tasks that would be encountered in settings beyond the classroom. Authentic assessment also informs subsequent teaching. Such assessment lends itself well to work experience inherent in cooperative education. For example, the New Brunswick Department of Education (1992) policy states that students must participate in a real job interview after the pre-placement orientation period. Moreover the student must receive written or oral feedback from the interviewer so that the student can learn from the experience.

Assessment issues are inextricably linked to how cooperative education is offered and to the purposes and specific learning outcomes of such programs. As described earlier, there is considerable variation within and between jurisdictions about the goals of cooperative education—from employability skills and career exploration, to experiential learning linked to subject matter.

Typically, cooperative education courses have in-school orientation components that are used to prepare students for work placements. This preparation usually includes an introduction to ethics, workplace safety, job readiness, interviewing, and résumé writing. Authentic assessment of the in-school orientation component includes methods like role-play and portfolio development, and assessment of the workplace component includes journals, reports by the workplace supervisor, and observations of student performance. Alberta, BC, and Ontario policy documents specifically mention these as preferred methods of assessment. Subject-related cooperative education places additional demands on the cooperative teacher who must assess competence in a variety of subjects in addition to competence in workplace abilities (Ontario Ministry of Education, 1989, p. 11). Cooperative education offerings generally require students to articulate their interests and goals for participating in work experience through an individualized educational training plan, which can then be used to guide assessment.

In career-exploratory cooperative education programs, assessment generally focuses on knowledge, skills, and attitudes. Helping students to understand their career interests, aptitudes and needs, to increase their confidence, to develop an understanding of the world of work, and to learn skills are common objectives within policy documents that were examined. But the assessment tools do not adequately reflect these objectives. For example, the New Brunswick Department of Education (1992) policy requires the cooperative teacher to make anecdotal, dated records of visits and to comment on the student's attendance, interactions with others, changes in attitude, and statements about new learning. Assessment forms in Saskatchewan Education (1989) pay particular attention to matters like punctuality, attendance, appearance, courtesy, attitude to co-workers, attitude towards constructive criticism, and quantity and quality of work.

BC Education (1997a) gives prescribed learning outcomes, suggested instructional strategies, and a range of possible assessment strategies. Alberta Education's (1997a) *Off-Campus Education Guide* provides the clearest articulation of required knowledge, skills, and attitudes; and Alberta is the only jurisdiction to produce rating scales that use scoring rubrics. Within the Career Transitions modules, rubrics are presented for both generic learner expectations and specific learner expectations. Documents describing Work Experience 15-25-35 give rubrics for assessing employability skills; and templates are provided so that a cooperative teacher can develop a student's learning plan for the knowledge, skills, and attitudes germane to a particular workplace. Alberta is the only jurisdiction to provide clear direction on components and weightings for grades. These components include employer evaluation, attendance, maintaining a journal, and writing a thank-you letter. Both the Alberta and BC documents refer to the Conference Board's "Employability Skills Profile," and there is a direct relationship between these skills and the curricular objectives being assessed.

The assessment picture is less clear for subject-based cooperative education. Our analysis reveals that policy documents lack subject-specific outcomes and the means for assessing them. No provincial or territorial documents give direction on assessing the link between work experience and subject-specific knowledge. Nor do policy documents pay much attention to assessing the effectiveness of cooperative education programs themselves—by collecting data from stakeholders, for example. The policies of just Saskatchewan, Alberta, and Ontario note the importance of performing continuous program evaluations. The Saskatchewan Education (1989) document provides sample evaluation forms for students, parents, teachers, and employers. The evaluation data can be discussed by an advisory committee representing stakeholders (p. 13).

Program evaluation of cooperative education increases in importance as the number of programs grows. Nova Scotia, for example, intends to increase school participation in school-to-work transition programs from 25 per cent of schools in 1998 to 75 per cent by 2000-01 (Nova Scotia Department of Education and Culture, 1998). The provinces engaging in the greatest restructuring of secondary education are committed to assessing cooperative education and work experience within the context of their reformed curricula. BC has already made changes to its work experience requirement in response to stakeholders' evaluation (BC Education, 1997b). However, the integration of on-campus and workplace experience complicates any assessment of the effectiveness of the components of cooperative education. Further, there is a paucity of research to guide the evaluation of cooperative education programs. The Third National Forum on Education, hosted by the Association of Community Colleges (1998) for CMEC, recommended that research focus on the long term impacts of cooperative education in tertiary education beyond improved employment outcomes. Perhaps evaluation models used in tertiary cooperative education (e.g., Branton et al., 1992) can be adapted for secondary contexts. Only when assessment of cooperative education receives the attention paid to the assessment of other secondary curricula will its status as curriculum be secured.

A Question for Research

> *How can the objectives of cooperative education best be assessed, and how can cooperative education programs be evaluated for their overall effectiveness?*

Summary

The five research questions identified in the above text fall directly from our commitment to viewing cooperative education as part of the secondary curriculum. The four perspectives reinforce this view, and the questions themselves reflect the curriculum commonplaces of objectives, knowledge and learning, learners, and assessment. The five questions for a research agenda in cooperative and career education are:

1. What types of goals may be realistically achieved by cooperative education (or by other forms of work experience), and to what extent are these goals context-specific?

2. What are the essential features of learning within experience that can be used to significantly enhance workplace learning during cooperative education and other work experiences provided by schools?

3. What features of cooperative education enhance the inclusion of and meet the learning needs of exceptional students?

4. What features of cooperative education enhance the inclusion of and meet the learning needs of First Nations students and students from under-represented groups?

5. How can the objectives of cooperative education best be assessed, and how can cooperative education programs be evaluated for their overall effectiveness?

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