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The evolution of vocational education colleges and institutes in Canada: An analysis of trends and challenges

Glen A. Jones*

Ontario Institute for Studies in Education, University of Toronto, Toronto M5S1V6, Ontario, Canada

ABSTRACT

Canada has placed a strong emphasis on the provision of vocational and technical education, and this paper provides an overview and critical analysis of the development, trends and challenges associated with the public colleges and institutes sector, as well as private career colleges. Under Canada's federal arrangements, postsecondary education is the responsibility of the provinces, and each province and territory has created a somewhat unique system. This paper provides a review of the development of vocational and technical education colleges, both public colleges established by governments and private career colleges established by private industry, drawing on the existing research literature. Common trends are discussed, such as a transition in credentials offered by colleges, including degrees in some provinces, a focus on student pathways and mobility within postsecondary systems, increasing international student enrolment as a source of revenue generation, expanding roles in applied research, and the emergence in some provinces of self-governing Indigenous institutes serving the needs of Indigenous communities. A core conclusion emerging from this analysis is that the traditional boundaries that have separated the public university and college sectors have been blurring in response to shifting labour market and student demands.

Key words: vocational education, career colleges, student mobility, applied research, postsecondary education

INTRODUCTION

The Canadian constitution establishes a federal system of government and assigns responsibility for education to the provinces.[1] In the transition towards a mass system of higher education following World War II, each of the ten provinces and (what would later become) three territories moved towards developing distinctive systems of postsecondary education, that is, systems that included both a university sector, as well as the creation of new institutional types that would play a key role in vocational, technical and adult education programming.[2,3] This second institutional category is commonly referred to as the colleges and institutes sector. A highly fluid private vocational education sector, often referred to as private career colleges, is also regulated by the provincial governments.[4]

This paper provides a descriptive overview and critical analysis of the development and evolution of both the private and public sectors of vocational and technical education in Canada, with a primary focus on the evolving roles and institutional forms of public colleges within these postsecondary systems. Key elements in this evolution have included shifting and blurring boundaries between institutional types, expanding degree-granting authority, and the provision of multiple pathways for student access and mobility within these systems.

***Corresponding Author:**
Glen A. Jones, Department of Leadership, Higher and Adult Education, Ontario Institute for Studies in Education, University of Toronto, 252 Bloor Street West, Toronto M5S1V6, Ontario, Canada. Email: glen.jones@utoronto.ca; https://orcid.org/0000-0002-4305-9411
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PUBLIC COLLEGES AND PROVINCIAL SYSTEMS

Canada transitioned from an elite to a mass system of higher education in the decades following World War II. Provincial governments, aided by funding transferred from the federal government, moved to support the expansion of the university sector, but also to create new institutional forms that would address the increasing needs for technical skills and vocational training required of a rapidly changing industrial economy.[5,6] The roles of these new colleges varied by province, since different governments identified different needs and had different conceptualizations of the role of these new institutional forms within a "system" of postsecondary education.[7,8] The provinces of British Columbia and Alberta, for example, established colleges that had both university transfer and vocational education functions.[9,10] Given the geographic size of these provinces, students could attend a local community college to pursue the first two years of university-level courses and then transfer to a traditional university or pursue a vocational or technical education program leading to a diploma. Ontario, and several other provinces, created colleges that operated as a parallel postsecondary pathway for vocational and technical education; following secondary school, students could choose to attend a college or a university, but these were separate pathways and there was no clear mechanism for student transfer or credit recognition between the two sectors.[11] Quebec completely redesigned its educational system with the development of an 11-grade school system, the creation of the Collège d'enseignement général et professionnel (CEGEP or College of General and Vocational Education) that provides pre-university and vocational education programs, and a dramatically expanded university sector. All university-bound secondary school graduates are required to complete a two-year college program before transitioning to university, but CEGEP students can also choose among a comprehensive range of vocational education offerings at these colleges.[12]

Emerging from this huge process of postwar expansion was a highly decentralized approach to higher education with quite distinctive provincial arrangements. It is generally recognized that there is no Canadian "system" of postsecondary education, but rather, higher education in Canada should be understood as the sum of provincial and territorial components. While the federal government plays an extremely important role in terms of supporting research, culture, Indigenous education, and other key elements that intersect with higher education, there is no national ministry of education or higher education. The federal government supported the expansion of vocational education as well as university education, but the mechanism for this support quickly evolved to transfer funding to the provinces rather than direct support to institutions. The regulation of higher education, including both the establishment of institutional forms and the direct funding of the public systems, is the responsibility of the provinces. The new colleges, therefore, arose from provincial policy discussions on local needs for postsecondary education in response to distinctive regional interests and challenges.[3,5,6]

While there were important differences in the role and function of these new colleges by province, there were also common elements.[7] First, these colleges were established as high access institutions that were designed to increase the participation of secondary school graduates in postsecondary education. This access mission often included a geographic or regional dimension in the sense that colleges were connected to local communities and were frequently referred to as "community colleges". Second, they all provided a comprehensive range of technical and vocational programs, often with direct linkages to relevant industries. They also offered the classroom educational component of apprenticeship and trades programming. Third, universities retained a monopoly over the authority to grant degrees, so while some colleges offered transfer or transitional programs for university-bound students, it was the universities that awarded degrees while the colleges awarded vocational diplomas or certificates; the fact that only universities could award degrees created a clear boundary between the two sectors. Fourth, while both colleges and universities were regarded as part of provincial postsecondary "systems", there were important differences in how each sector was coordinated by the government. Colleges were regarded as playing a more instrumental role and tended to be subject to much greater government regulation and control than universities, which were generally positioned as publicly funded, independent, corporate entities.[7,13]

In addition to the complexities associated with different provincial systems and types of colleges offering vocational education and training, it is also important to recognize that Canada has two official languages, English and French, and that issues of language play a key role in public policies related to educational access and provision. In several provinces (and territories) there are both English and French-language vocational colleges.

There were approximately 200 public colleges and institutes in Canada in 2024.[14] The number of students enrolled in the colleges and institutes sector increased dramatically over time, and the share of students enrolling in these colleges, as a component of total postsecondary enrolment, is higher than in most other

Organizationfor Economic Co-operation and Development (OECD) countries. In other words, Canada assigns a greater role to these colleges and their work in vocational education than many other jurisdictions. The number of full-time students in the sector rose from 364,698 in 1992 to 594,738 in 2022 (an increase of 63%) and the number of part-time students increased from 105,111 to 188,556 (an increase of 79%) during the same period.[15] The number of full-time university students also increased substantially during this period, from 569,481 to 1,113,987 (an increase of 96%, though part-time enrolment has ebbed and flowed over time). While colleges and institutes continue to play a vital role in postsecondary education in Canada, their share of total postsecondary enrolment in relation to the universities has been gradually decreasing.[15] It should also be noted that there are important differences in the profile of college and university students, for example, college students tend to be older, since the colleges commonly attract individuals who are pursuing short-cycle vocational programs as a form of reskilling or as a strategy for shifting careers after spending time in the workforce.[7]

PRIVATE CAREER COLLEGES

There is a long history of private career colleges in Canada, in fact the first regulated colleges emerged in the 1800s, though these institutions have received relatively little attention within the Canadian higher education research literature, in part because of national data systems, and public attention, focus primarily on the much larger public college sector.[4] The private college sector is composed of a diverse collection of actors, ranging from very small companies that offer training in a single vocational area, such as hairdressing or truck driving, to larger, more comprehensive colleges owned by corporate shareholders operating on multiple campuses and offering a range of vocational programs.[16] Private colleges, by definition, do not obtain direct operating funding from the government, though some may access support through specific government initiatives and funding mechanisms, for example, special funding for skills training for individuals who are unemployed.[17,18] They function as commercial businesses and so the sector is also characterized by fluidity in the sense that student enrolment and the number of colleges are frequently shifting in relation to student demand and employment market forces.[19] Given their dependence on tuition revenues, these colleges tend to be highly responsive to student needs, including offering shorter or condensed program offerings as well as flexible class schedules, and they attract a diverse range of students, including recent immigrants and students from lower socio-economic backgrounds.[4]

Private career colleges are regulated by the provincial governments. In 2023 there were approximately 1500 registered colleges in Canada, with more than half located in Ontario, the most populace province.[20] All colleges that meet minimum criteria must be registered with the relevant provincial ministry and meet detailed programmatic and organizational requirements. These requirements vary by province, but generally include evidence of financial stability, criteria related to program quality (for example, a curriculum that meets industry standards; minimum qualification for instructors) and transparent policies (tuition fees, tuition refund policies, *etc.*). It is common for provincial governments to also have additional regulatory requirements that must be fulfilled before the students in these colleges and programs can access student financial assistance programs. In other words, while the colleges do not obtain operating support from the government, their students may be eligible for financial support to cover some of the costs of tuition and maintenance.[20]

There is little national data on enrolment in the private career college sector since national statistics focus on public sector institutions. Several reports have noted that enrolment in the sector is much smaller than in public colleges,[4] perhaps roughly one-fifth the size[21] and that there are significant provincial variations (and, of course, private sector markets).[18] Recent estimates suggest a total national enrolment of over 175, 000 students in the sector.[22] It is also important to note that there is relatively little integration between the public and private college sectors and there are limited formal mechanisms facilitating student mobility between the two sectors.[21]

EXPANSION OF DEGREE-GRANTING AUTHORITY AND NEW CREDENTIALS IN THE PUBLIC COLLEGE SECTOR

The role of public colleges expanded during the 1960s and 1970s as the breadth of vocational education programs grew in response to the needs of industry, and as the numbers of students enrolled in these programs increased.[7,23] In addition to offering a different educational pathway to students, the high access mission of the colleges also meant that they were serving a student population that was more diverse than the population enrolled in universities. College students generally came from a broad range of socio-economic backgrounds, while the profile of university students generally favored middle to higher socio-economic backgrounds. As participation rates in postsecondary education continued to increase, critical observers began to focus attention on issues of cross-sector coordination and student mobility within these provincial systems.[24] The provinces of Alberta[9] and British Columbia[10] created government councils designed to monitor and

facilitate credit transfer and student pathways between institutions and sectors. Other provinces began to explore approaches and mechanisms for greater coordination between the two sectors.[25] In Ontario, where colleges did not have an explicit transfer function, there were increasing concerns throughout the 1980s and 1990s that college graduates were unable to have their courses or programs appropriately recognized by universities which therefore created barriers for students seeking further education.[26–28]

Beginning in the 1990s, several Canadian provinces took steps to expand the authority to grant degrees to non-university institutions, including colleges and institutes. The government of British Columbia introduced college degrees as a pilot experiment in 1995.[29] The government confirmed that this was a permanent feature of the sector by 2003.[30] Similar shifts towards degree-granting in the college sector emerged in Alberta and Ontario at the beginning of the new millennium, as well as for community colleges in several American states.[31] In some provinces this decision was motivated by a desire to increase participation in degree-level programs, but it was also based on a recognition that the needs of industry were shifting in terms of requiring a greater depth of skills and technological knowledge.[29] Most vocational education programming continued to focus on one and two-year diplomas (and in Ontario, three-year diplomas), but in some program areas new four-year applied degrees, often including an internship in industry, began to be offered. This modest expansion provided new pathways to degrees, potentially improving student mobility (since more students can complete degrees without changing institutions) and, in some cases, providing access to degree programs for students who might never enroll in a university.[32]

However, these changes also served to blur what had been relatively clear boundaries between the university and college sector, a boundary that had been defined by the authority to grant degrees in one sector but not the other.[8,33] In addition, several provinces approved a shift in the mission of some existing institutions. In British Columbia, the government repositioned a number of colleges as "university colleges", later to be classified as teaching-intensive universities. These "new" universities offer a combination of vocational education programs (vocational and technical certificates, apprenticeships for trades, *etc.*) as well as offering a wide range of undergraduate, and in some cases, graduate degrees. Alberta approved the transition of two two-year colleges into universities.[34] The majority of Canadian provinces have now assigned some form of degree-granting authority to colleges and institutes, though the vast majority of degrees continue to be granted by universities and, as noted above, the share of all post-secondary students attending universities has gradually increased, while the share of students attending colleges and institutions has modestly declined.[35]

There has also been a growth of formal articulation arrangements between colleges and universities which allow students to have their credits or credentials recognized as they move from one institutional type to another. Many of these arrangements focus on a specific vocational program and provide a clear pathway from that program to a more advanced credential.[32]

Some distinctive credentials have also emerged in some provinces. Ontario colleges offer graduate diplomas which are one-year programs for students who have already earned a university degree or college diploma; these are vocational/technical programs for specific employment roles designed to build on a broad (for example liberal arts and sciences) undergraduate degree. British Columbia colleges offer Associate Degrees, a credential that is quite common in the United States, to students who have completed two years of academic study.[36]

Recent changes to government regulations in Ontario have provided opportunities for the colleges in that province to introduce new types of credentials and degree programs. In addition to four-year degree programs (which would be considered the "normal" length of an undergraduate degree in Canada), in 2024 the province introduced mechanisms for the approval of new three-year undergraduate and new applied master's degree programs.[37,38] It is too early to speculate on the content of these newly applied programs or how these new credentials will be viewed in the labor market.

At the other end of the credential continuum, many Canadian provincial governments, like counterparts in Europe and many other jurisdictions, have actively encouraged the development of micro-credentials as an approach to addressing skills upgrading, especially in response to the economic and industrial challenges that were associated with the global pandemic. According to the Higher Education Quality Council of Ontario: "A micro-credential is a representation of learning, awarded for completion of a short program that is focused on a discrete set of competencies (*i.e.*, skills, knowledge, attributes), and is sometimes related to other credentials".[39]

A number of provincial governments, including Alberta, British Columbia, Manitoba and Ontario have created funding programs designed to support the creation of new, innovative short programs and credentials focusing on addressing specific skills. Other provinces, such as Nova Scotia, have actively encouraged the development of micro-credentials. These various initiatives have led to an array of new highly specialized technical and

vocational education offerings.

There is little evidence, at least to date, to suggest that micro-credentials have made a positive contribution to employment outcomes in Canada. Most of these microcredentials have not been recognized for credit within existing educational credentials or integrated into provincial arrangements or processes for credit recognition and transfer, though there have been some preliminary policy discussions on possible mechanisms for accreditation.[40] Wheelahan, Moodie and others argue that the rise of interest in micro-credentials is a product of a continuing fetishization of "skills" within the broader education policy discourse. Skills are frequently discussed in complete isolation from the individual learner, or from the employment or social context in which they might be used or valued.[41–43] Focusing on education in terms of very specific skills fails to recognize the importance of the broader goals and benefits of education in terms of human development.

The underscoring theme associated with all of these changes is the blurring of boundaries not only between institutional categories, but also between what might broadly be understood as vocational and technical education on the one hand, and academic and professional education on the other. Canada has generally used the term higher education inclusively to be synonymous with postsecondary or tertiary education, and these recent changes have allowed for the creation of new credentials, new pathways, and new institutional forms within these postsecondary structures and arrangements. There continue to be many barriers and problems related to access and student mobility, especially given the challenges of addressing the educational needs of sparsely populated regions of the country. Many of the assumptions about strict borders between historic educational categories have clearly been challenged over the last few decades.[32]

THE DEVELOPMENT OF SELF-GOVERNING INDIGENOUS COLLEGES

Canada has a horrific history of settler colonialism and the treatment of Indigenous peoples, including in terms of access to postsecondary education.[44] While some steps have been taken to recognize the horrendous realities of residential schools that were intentionally designed to separate Indigenous children from their families, culture and language, especially since the release of the Truth and Reconciliation Commission of Canada's final report in 2015, these populations continue to have much lower postsecondary participation rates than the broader population.[45] A larger share of Indigenous students can be found in the college sector than in the university sector, in part because many of the colleges continue to serve and have relationships with local communities, including Indigenous communities, but also because of their emphasis on vocational education and their direct connections to the labor market.

The idea of independent, self-governing Indigenous colleges is far from new. A number of Indigenous communities took steps to develop their own colleges or institutes to explicitly address the vocational and cultural needs of their community. The Federation of Saskatchewan Indians created the Saskatchewan Indian Cultural College in 1972, the first self-governing, Indigenous postsecondary education institution in Canada. The Saskatchewan Indian Institute of Technology was created in 1976, and Baker estimated that there were at least thirty Indigenous colleges operating by 1995.[46] These colleges have emerged from local initiatives and are governed by Indigenous communities, often with community governing boards.

Indigenous institutes can be seen as a separate sector of adult, vocational and technical colleges, operating in parallel with, and frequently in relationships with, public colleges and universities. Funding and regulatory relationships vary by province, but Indigenous institutes generally have more autonomy from the provincial government compared with public colleges. Programs of study are designed to address local community needs and support Indigenous cultures and languages, sometimes with credit transfer and articulation arrangements with public institutions to expand the range of offerings. They might include, for example, programs focusing on business and entrepreneurial skills, the local Indigenous culture and language, or information technologies. The Ontario government approved legislation in 2019 recognizing nine Indigenous Institutes as constituting a separate sector of postsecondary education in the province.[47]

INTERNATIONALIZATION AND INTERNATIONAL STUDENT RECRUITMENT

Given their historic emphasis on addressing local vocational education needs, most colleges devoted little attention to internationalization in the early stages of their development. Galway notes that international engagement emerged slowly in the college sector, often beginning with small initiatives supported by the Canadian International Development Agency and then building through private contracts with foreign institutions or governments.[48] The level of international engagement gradually increased with the expansion of international enrolment in Canadian colleges during the 1990s and increasing opportunities for international

development and contract activity. The motivations for increasing international engagement included financial benefits but also opportunities for personal and intellectual growth on the part of college leaders, faculty, students and staff.

Canada's first national strategy for international education did not emerge until 2014, and it focused almost entirely on increasing international student enrolment as an economic benefit economy and on recruiting international students as "ideal" immigrants who would obtain a recognized educational credential, have demonstrated proficiency in one of Canada' official languages, and often have experience in the labor market.[49]

Provincial governments established a list of designated learning institutes that would be eligible to host international students and provided a foundation for federal government decisions on student visas. In addition to public colleges, the list of designated learning institutions also included private career colleges that had met specific provincial standards. The graduates of many public college programs were also eligible to apply for special permits that would allow them to work in Canada for a period following graduation—essentially a pathway towards immigration.[20]

The growth in international student enrolment in colleges grew at an astounding rate, especially in the public colleges where potential access to a work visa following graduation attracted many international applicants, but even the eligible private career colleges experienced enrolment growth. International student fees quickly became a major source of revenue for both public and private colleges, and the growth of international students in the college sector far outpaced growth in the university sector. For the public colleges and institutions, these revenues rapidly outpaced the funding associated with government grants, which had stagnated in several provinces, and domestic tuition, which had always remained low given the access mission of the sector. In short, international student fees became a major alternative mechanism for funding the public college system, especially in Ontario where colleges entered into partnerships with private colleges to enroll more students and generate even more revenue.[20,50,51]

The growth in international enrolment began to raise serious political and policy questions and concerns related to the quality of the international student experience at some institutions, issues of the availability of housing in the context of a national shortage, and overall levels of immigration.[52] The total number of international students in Canada increased by more than 60% between 2019 and 2023, and the greatest rates of growth were in the Ontario public colleges. For example, the largest number of international students of any higher education institution in Canada were enrolled in Conestoga College (in Kingston, Ontario) which had more than 30,000 full-time international students in 2023. In January of 2024, the Federal Government introduced new provincial caps on international student visas for a two-year period. The implications of the new caps vary by province, but they will undoubtedly impact both public college and private career college revenues in several provinces. In Ontario government has decided not to allow private career colleges or private-public college partnerships to enroll international students.[20] There are already signals that the new federal policy is impacting overall international student recruitment and admissions which may have quite broad implications for the funding of postsecondary education in Canada.

APPLIED RESEARCH

While Canadian colleges and institutes were originally defined in terms of their teaching focus, this mission has expanded to include applied research at many colleges. Within this technical and vocational education sector, applied research is often understood as the application of applied expertise to problems or challenges identified in their relationships with industry, especially small and medium-sized enterprises (SMEs). As the authors of a guide for applied research note: "Colleges are driven by the needs of their community and, through the delivery of education, training and (over the last 20 years or so) applied research, support community economic development. By addressing the needs of industry through the provision of educated graduates for the workforce, retraining of existing employees and now as a resource for industry-relevant applied research, colleges help industry to stay in business and thrive".[53]

This applied research function has evolved and become increasingly legitimized through the support of both provincial and federal governments. The federal government plays a significant role in supporting research and innovation in Canada, but historically the federal research councils have focused their attention on universities.[54] In 2008, following a successful pilot program, the Natural Sciences and Engineering Research Council of Canada introduced the College and Community Innovation program which is designed to support college and institute applied research activities linked directly to SMEs.[53] Based on a national survey, Colleges and Institutes Canada reports that colleges were engaged in 8154 applied research projects in 2021-2022, with a great deal of this activity involving partnerships with companies within the manufacturing and natural resource and agriculture sectors.[55] For example, the private company Lion Electric worked with the Innovative Vehicle Institute at Cégep de Saint-Jérôme in

the development of new school buses powered by electric motors.[56] Most applied research activities reported by the colleges involve new processes, products, and/or prototypes, and 80% of these projects are completed in less than one year. The overall magnitude of research funding in the colleges, both from private and public sources, has been quite modest compared to university-funded research, but there are certainly signals of increasing growth in support for these initiatives both by industry and governments. There is even a national ranking of Canada's "Top 50 Research Colleges" conducted by Research InfoSource.[57] These applied research activities have served to strengthen relationships between college and industry, contribute to the experience and expertise of college faculty, and, in some cases, provide new industry-focused educational experiences for students who are sometimes engaged in these projects.

CONCLUDING OBSERVATIONS

Vocational and technical education in Canada has a distinguished history of success and dynamism. New institutional types focusing on vocational education emerged as key components of new provincial postsecondary systems in the post-WWII period. These systems frequently involved a clear binary structure, with universities offering degree programs, and colleges and institutes emerging as high access, demand absorbing, comprehensive institutions, though the specific mission of these new colleges varied by province. The boundaries between these binary arrangements have blurred as the role of colleges and institutes in many provinces expanded to include four-year degrees, and there are signs of further boundary shifts as colleges focus increasing attention on applied research and some colleges in Ontario introduce new masters-level programs. There is a long history of private career colleges that operate as independent businesses that respond to rapidly shifting student demands in the face of a changing labor market. A sector of self-governing Indigenous Institutes, operating in parallel with public colleges, has emerged to serve the needs of Indigenous communities.

A central feature of the public colleges continues to be their responsiveness to the needs of local industry and their strong relationships with employers. They serve highly diverse populations and communities. This focus on local employment needs has shifted somewhat since colleges and institutes now enroll a significant number of international students, and in some provinces these colleges have become highly dependent on international student tuition revenues. New international student visa caps introduced by the federal government in 2024 will have major implications for the sector, both in terms of revenues and perhaps in terms of revitalizing the local service mission.

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Author contributions

Jones GA: Conceptualization, Formal analysis, Writing—Original draft, Writing—Review and Editing The author has read and approved the final version of the manuscript.

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