



FORECASTING EDUCATIONAL TRENDS

GEORGE BROWN COLLEGE PORTFOLIO REVIEW 2010 ENVIRONMENTAL SCAN

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EXECUTIVE SUMMARY

The innovation economy is both a driver and an outgrowth of a knowledge-based society that requires us to ensure our graduates are not only content experts in their fields of choice, but also expert learners, able to adapt to our changing world. College graduates are vital to the national economy; Canada ranks first in the OECD attainment of tertiary education only when College education is factored in.

George Brown College has an important role in addressing both the skills shortage and the skills gap within Ontario and across Canada. The skills shortage exists because there are not enough skilled workers to do the jobs of today. The skills gap exists in those workers who will need to learn new skills in order to do the jobs of tomorrow. Our role in promoting innovation literacy makes us ideal participants in an innovation economy that promotes partnership, entrepreneurship, and educational pathways for students, industry and community partners alike. Our common goal is increasing social and economic productivity in Canada.

Canada has an “innovation deficit,”¹ lagging behind OECD counterparts in innovation and overall productivity. The OECD Innovation Strategy² lists three pillars for improving productivity and international competitiveness: education, infrastructure and research. Investing in these areas is key to long term economic growth. Education is a key driver, and in order for education to prepare graduates for innovation, we must also adapt and innovate within education. This is the goal of Portfolio Review.

Portfolio Review is a college-wide strategy development conducted every 5 years (done in 2000 and 2005). Its intent is to define a desired program portfolio mix by credential type, sector, etc. for the College, and a 5-year plan for grow/maintain/divest; identify medium-term objectives for new program development; and guide resource allocations across Divisions. This is followed by Portfolio Analysis, which is a Periodic process (done in 2000, 2004, 2005, 2008) that takes a divisional review of program-level performance and outlook, tracks the mix strategy progress, shares understanding of current College-wide issues and opportunities and their translation into the Divisions, and fosters periodic review of possible divestitures in addition to continuous quality improvement in programs.

The data below summarize key findings to date of the 2010 Portfolio Review Environmental Scan. Major trends with far-reaching social and economic impacts are presented, followed by highlights on demographic, economic, and industry trends that will influence the kinds of students we will be educating over the next 5-10 years, their place in the economy, and the

¹ Lynch, K., <http://www.theglobeandmail.com/news/opinions/innovation-is-our-hidden-deficit/article1497976/>

² http://www.oecd.org/document/15/0,3343,en_2649_34273_45154895_1_1_1_1,00.html

industries/sectors we will be engaging. Details on industry trends, post-secondary education, and input from George Brown College stakeholders follow.

Major Trends

- Demographics
 - Aging population creating skills gaps/shortages across the economy
 - Boomers working past official retirement age and/or working post-retirement
 - Three different generations currently working together: Baby Boomers, Generation X and Generation Y
 - Continued reliance on immigration for population growth
 - Literacy and language proficiency remains a challenge for integrating immigrants into the Canadian work force
- Globalization - Student mobility and student diversity
- Increasing environmental and social responsibility concerns
- Emergence and adoption of new technology in the workplace; correlation to alternative means to deliver education and enhance the student experience
- Increasing focus on inter-professional and inter-disciplinary collaboration
- Ontario's current fiscal constraints; we are now a have-not province
- Provincial and federal regulations and recent budget announcements will guide where most investments will occur over the next few years
- Canada continues to lag in productivity; our capacity to innovate similarly lags
- Governments increasing focus on innovation as key economic driver to improve productivity
- Innovation and the Creative Age - Continue to move towards a service oriented economy that requires skills (analytical and social intelligence) generally found in creativity-oriented occupations

Demographic Implications

With population growth occurring primarily outside of Toronto, combined with an overall aging population and the 15-24 age group growing by less than three percent over the next five years, competition for market share among GTA colleges, universities and private institutions will intensify in the upcoming years. The GTA will continue to rely on immigration for population growth with South Asians predicted to make up nearly a quarter of the GTA's population. Nearly 70% of immigrants hold prior PSE credential but they continue to face barriers such as credential validation, access to the labour market, work experience and difficulties with the English language. GBC should continue to:

- Attract the non-traditional / mature market including those with and without prior postsecondary education, recent immigrants and under-represented populations, i.e. aboriginal, mature, first generation, male students;

- Develop distributed learning strategies (technology; PT in FT programs) to reflect the needs of learners, including evaluating GBC's current course scheduling practices in meeting the needs of students' for study-work-family life balance;
- Strengthen outreach and marketing campaigns delivered in a non-traditional way to a non-traditional market.

Economic Implications

Ontario continues to move toward a knowledge-based, innovation-intensive economy. As a result of this shift and the aging population, Ontario will face a skills shortage and a skills gap. In addition, Toronto underperforms in a number of economic indicators (e.g. GDP per capita) when compared to other OECD metropolitan regions. In order for Toronto and Ontario to remain competitive, GBC has an opportunity to enhance programming that focuses on:

- Developing innovation literacy: soft skills such as communication, entrepreneurship, professionalism, ethics, team work, leadership, change management, problem-solving and management skills;
- Encourages innovation in education delivery;
- Embraces applied research as a mode of field education to provide faculty and students with the opportunity to develop skills that foster innovation in industry partner firms and in the economy more generally.

Industry Implications

There are major trends that will impact all sectors of the economy, each presenting GBC with a unique opportunity to change, expand its curriculum and/or program mix:

- As Ontario's economy continues to shift away from the manufacturing of products, the need to enhance students' analytical and social intelligence skills and literacy levels should be a priority for GBC.
- Demographic shifts combined with more integrated economies will continue to impact all industry sectors.
- There are increasing environmental and social responsibility concerns.
 - GBC should continue the introduction of sustainability (environmental, social responsibility) focused courses or programs (e.g. solar technology, green audits, local food movement).
- There is a trend toward inter-professional and inter-disciplinary education that will require students from different academic areas to work collaboratively.

- There is an opportunity for GBC to explore the development of programs with an inter-professional and inter-disciplinary focus. This will create graduates with highly specialized team work skills, a key innovation skill.³
- Technological enhancements are continually creating new modes of communication (Facebook, blogs, Twitter, Wikis) and opportunities for innovative course delivery and branding, as well as the ongoing evolution of essential skills commensurate with using technology as a medium for learning and working.
 - GBC should continue to focus on enhancing digital literacy to include not just the ability to *access* technology and information mediated by it, but also the ability to *assess* this information. Students are increasingly adept at and equipped with digital literacy, including an ease with social networking technology. However, emphasis should be placed on *digital literacy for productivity*, the ability to adopt and adapt technology to enhance goals commensurate with their fields of study and work.
- Recent federal and provincial announcements, i.e. increase in international enrollment, accountability, apprenticeship, increase in PSE attainment and so forth will shape the future direction of the higher education system in Ontario.
 - A key challenge for GBC moving forward will be to identify opportunities for growth without compromising the quality of education.
- It is expected that competition for market share among colleges, universities and private educational institutions will continue to intensify. In addition, Ontario will move toward a more unified educational system where credit transfer and articulation will increasingly be the norm.
 - GBC should explore opportunities for university-college collaboration, both in terms of increasing college-to-university transfer agreements and vice-versa as well as more specialized/unique programming for people already in the workplace.

³ OECD Innovation Strategy:
http://www.oecd.org/document/15/0,3343,en_2649_34273_45154895_1_1_1_1,00.html

EXTERNAL ENVIRONMENT

1. DEMOGRAPHICS

POPULATION GROWTH, INCLUDING THE 15-24 AGE GROUP WILL CONTINUE TO OCCUR IN THE SURROUNDING MUNICIPALITIES OF TORONTO

- The Greater Toronto Area (GTA) population (Table 1) is expected to reach 6.7 million by 2015, an increase of over 8% from 2010. The main driver of this growth will come from international migration.
- In comparison to Toronto (3.5%), the combined population of Peel, York, Durham and Halton regions (11.9%) is expected to increase by about four-fold by 2015.
- Halton is projected to experience the largest population growth of all GTA municipalities.

Table 1: GTA Population Projections (2010 to 2015)

Municipality	2010		2011		2012		2013		2014		2015	
	Number	Number	%									
Toronto	2,694,330	2,712,940	0.7	2,731,610	0.7	2,750,400	0.7	2,769,110	0.7	2,787,720	0.7	
Peel	1,342,060	1,372,400	2.3	1,404,550	2.3	1,438,530	2.4	1,473,000	2.4	1,507,960	2.4	
York	1,032,540	1,054,990	2.2	1,078,430	2.2	1,102,890	2.3	1,127,500	2.2	1,152,290	2.2	
Durham	624,250	634,780	1.7	646,110	1.8	658,240	1.9	670,890	1.9	684,050	2.0	
Halton	504,010	517,120	2.6	530,870	2.7	545,300	2.7	560,120	2.7	575,330	2.7	
Total GTA	6,197,190	6,292,230	1.5	6,391,570	1.6	6,495,360	1.6	6,600,620	1.6	6,707,350	1.6	

Source: Ontario Ministry of Finance, Ontario Population Projections Update, fall 2009.

Although the GTA’s population is projected to grow by over 8%, the 15 to 24 age cohort is projected to increase by less than 3% overall over the next five years (Table 2) and be negative in Toronto.

Table 2: GTA Population Projections by Age 15-24 (2010 to 2015)

Municipality	2010		2011			2012		2013		2014		2015	
	Number	Number	%										
Toronto	342,240	342,600	0.1	341,980	-0.2	341,220	-0.2	338,330	-0.8	335,820	-0.7		
Peel	192,900	197,110	2.2	200,730	1.8	203,990	1.6	206,290	1.1	208,390	1.0		
York	147,380	149,720	1.6	151,020	0.9	152,360	0.9	152,910	0.4	153,510	0.4		
Durham	92,870	94,240	1.5	94,990	0.8	95,340	0.4	95,020	-0.3	94,310	-0.7		
Halton	66,440	68,140	2.6	69,610	2.2	70,900	1.9	71,810	1.3	72,460	0.9		
Total GTA	841,830	851,810	1.2	858,330	0.8	863,810	0.6	864,360	0.1	864,490	0.0		

Source: Ontario Ministry of Finance, Ontario Population Projections Update, fall 2009.

CANADA TO BECOME MORE HIGHLY DEPENDENT ON IMMIGRATION FOR POPULATION GROWTH

- By 2031, nearly half (46%) of Canadians aged 15 and over would be foreign-born, or would have at least one foreign-born parent. This figure is up from 39% in 2006.⁴
- By 2031, 47% of second-generation Canadians would belong to a visible minority group. This figure was 24% in 2006. Second generation refers to those born in Canada with at least one parent born outside Canada.⁵
- Nearly half (45%) of immigrants who come to Canada choose to settle in Ontario. The second and third largest proportions settle in Quebec (18%) and British Columbia (18%). The proportion of immigrants who settle in Ontario has been steadily decreasing (148,641 settled in Ontario in 2001 vs. 110,896 in 2008, net decrease of 37,745 or -15%) Meanwhile, settlement in the provinces of Alberta and British Columbia has been steadily increasing since 2001.⁶
- The majority (78% in 2008⁷) of immigrants (permanent residents) who come to Ontario choose to settle in the Toronto area. Toronto relies heavily on immigration to sustain its population and fill jobs. Almost half (44%) of recent immigrants (in Canada 5 years or less) in the City in 2006 were between the ages of 25 and 44 years when they moved. Of this, almost one-quarter (23%) were under the age of 14.⁸

⁴ Statistics Canada, Projections of the diversity of the Canadian population, March 2010

⁵ Statistics Canada, Projections of the diversity of the Canadian population, March 2010

⁶ Citizenship and Immigration Canada (2008) Facts and Figures: Immigration Overview – Permanent and Temporary Residents. <<http://www.cic.gc.ca/english/resources/statistics/facts2008/permanent/12.asp>>. (Last accessed May 4, 2010).

⁷ Citizenship and Immigration Canada (2008) Facts and Figures: Immigration Overview – Permanent and Temporary Residents. <<http://www.cic.gc.ca/english/resources/statistics/facts2008/permanent/11.asp>>. (Last accessed May 4, 2010).

⁸ Federation of Canadian Municipalities (FCM) (2009) Theme Report #5: Immigration and Diversity in Canadian Cities and Communities, p 3. www.fcm.ca/QQLRS

- About half (48%) of the immigrants who came to Ontario in 2007 were economic immigrants. These are immigrants who were selected for their skills and ability to contribute to the economy. This was the lowest percentage for this category during the last 10 years.⁹
 - In 2007, 32% of immigrants arrived under the family class category and about 14% were refugees.¹⁰
- According to a recent Statistics Canada report, Projections of the Diversity of the Canadian Population (2010), South Asians will be the largest visible minority group. They will represent 24% of Toronto's population by 2031.
- A higher proportion of immigrants aged 25 to 54 hold PSE credentials (67%) compared to the non-immigrant population (62%). The proportion of recent immigrants (arrived during 2001 to 2006) with such credentials is even higher – 78%.¹¹

ABORIGINALS REPRESENT LESS THAN 1% OF THE POPULATION IN TORONTO

- In 2005, Statistics Canada estimated that Ontario's total population with aboriginal identity will reach 267,700 by 2017. The aboriginal population continues to grow at a faster rate than the population as a whole. By 2017, the aboriginal population is projected to be 25% larger than it was in 2001, the base year of the projections. In contrast, by 2017, the total Ontario population is projected to be 20% larger than in 2001.
- From 2001-2006, the aboriginal population in the GTA went from 23,950 to 31,910, an increase of 33.2%.¹²
- In 2006, the aboriginal population living in the Greater Toronto Area (GTA) represented 0.6% of the total population in the GTA and 0.3% in Ontario.
- The aboriginal population of the GTA has a lower median age (31.7 years) than the non-aboriginal population (37.3 years). The GTA aboriginal population includes higher proportions of children (22.1% vs 18.7%) and youth (16% vs 13.4%).¹³
- Education a Top Priority: A recent Environics study (2010) asked urban Aboriginals about their goals. Some of their top aspirations were to complete their education (28%) and have a satisfying career (22%). Many participants also saw education as a top priority for

⁹ Colleges Ontario 2009 Environmental Scan

¹⁰ Colleges Ontario 2009 Environmental Scan

¹¹ Colleges Ontario 2009 Environmental Scan

¹² City of Toronto, Demographic Information (based 2006 census)

¹³ City of Toronto, Demographic Information (based 2006 census)

themselves and future generations, but reported financial cost as a major obstacle to post-secondary studies.

- Approximately 29.6% of Toronto's (CMA) Aboriginal population (15 and over) have yet to complete high school (vs. 38% province); 25.5% have a high school diploma or equivalent (vs. 24% province); 19.1% have attained a college diploma or certificate (vs. 19% province).¹⁴
- Aboriginal students are also more likely to go to colleges or trade schools than to universities. Nine per cent of Aboriginal students aged 25 to 64 completed a university degree, compared to 26% of non-Aboriginal students (figures based on 2006 census data).¹⁵
- The Ontario government invested \$26.4 million in Aboriginal postsecondary education (PSE) in 2009-10. The government's efforts aimed at ensuring more Aboriginal students pursue and succeed in PSE. A bursary program was created to help Aboriginal students with financial need attend university, college, or Aboriginal post-secondary institutions in the province. The government also funded a number of Aboriginal student support services, such as career counselling and mentoring.¹⁶

¹⁴ Statistics Canada (2006) Aboriginal Profile. <http://www12.statcan.ca/census-recensement/2006/dp-pd/prof/92-94/details/page.cfm?Lang=E&Geo1=PR&Code1=01&Geo2=CMA&Code2=535__&Data=Count&SearchText=Toronto&SearchType=Begin&SearchPR=01&B1=All&Custom=> (Last accessed April 28th, 2010).

¹⁵ R.A. Malatest & Associates Ltd. (2010). *Promising Practices: Increasing and Supporting Participation for Aboriginal Students in Ontario*. Toronto: Higher Education Quality Council of Ontario.

¹⁶ Ontario.ca, <http://news.ontario.ca/tcu/en/2010/01/investing-in-aboriginal-students.html> (Last accessed June 24, 2010).

2. Economy

Gross Domestic Product (GDP)

After a weak growth in 2008, the Canadian economy experienced a sharp decline of 2.6% in 2009 (Statistics Canada, Finance Canada, CIDA, Bank of Canada). This economic output continues to be marked by a movement away from goods production industries to more service based ones.

- The manufacturing sector experienced the most losses in 2009; a consistent trend across the years;
- Education, health, social and government services sectors remain relatively stable and the prime contributor to economic output;
- Finance, insurance, and real estate services sectors is the second largest contributor to economic output.

Table 3: Contribution to Real GDP by Selected Sectors (2002 constant \$)

	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture, forestry, fishing and hunting	2.2%	2.3%	2.5%	2.5%	2.3%	2.2%	2.2%	2.1%
Mining and oil and gas extraction	5.0%	5.0%	5.0%	4.8%	4.8%	4.7%	4.6%	4.3%
Construction and utilities	8.1%	8.1%	8.2%	8.4%	8.4%	8.5%	8.5%	8.3%
Manufacturing	17.1%	16.6%	16.5%	16.2%	15.5%	14.9%	13.8%	12.6%
Wholesale & retail trade, transportation and warehousing	15.3%	15.4%	15.5%	15.9%	16.2%	16.5%	16.5%	16.4%
Finance, insurance and real estate services	18.2%	18.3%	18.4%	18.5%	18.7%	19.0%	19.3%	20.2%
Information, culture, arts, entertainment and recreation	4.5%	4.5%	4.5%	4.5%	4.6%	4.6%	4.7%	4.8%
Professional services, restaurants and hotels	9.2%	9.3%	9.4%	9.4%	9.5%	9.6%	9.7%	9.8%
Education, health, social and government services	19.5%	19.6%	19.4%	19.2%	19.2%	19.3%	19.8%	20.7%

Source: Canada – Economic Indicators, Department of Foreign Affairs and International Trade Canada, Office of the Chief Economist using data from Statistics Canada, Finance Canada, CIDA, Bank of Canada

If the OECD predictions hold, Canada's economy is forecasted to grow by 2.1% this year¹⁷. This makes for the highest growth rate among G7 economies and the beginning of an economic rebound expected to carry into 2011. This relatively positive outlook is based on a few factors:

- Relative to the US, the financial position of Canadian households and business is expected to remain relatively high
- Housing sector in Canada is relatively stable

¹⁷ TD Economics, The Changing Canadian Workplace, March 8th, 2010

- Historically low interest rates

Despite this, Toronto has underperformed in key economic indicators when compared to other OECD metropolitan areas, which could hinder its ability to remain competitive¹⁸.

- Toronto has a mixed economic performance when it comes to GDP per capita and GDP growth rates and generally performs below the Canadian average;
- Internationally, Toronto's annual economic growth (1.5%) is lower than the average of an OECD metropolitan area (2.0%);
- Productivity also falls short. From 1995-2005, Toronto averaged 0.8%, while the OECD metropolitan regions averaged 1.8%;
- Despite Toronto's robust labour market and the demand it creates for housing and consumer-related activities, the decline in manufacturing (10% job losses since 2002) and traditional industries have created structural difficulties for Toronto and Ontario.
- The City of Toronto 2009 – 2018 Capital Budget and Plan totaling close to \$26 billion estimated that it will create over 300,000 new jobs over a 10-year period.¹⁹

Labour Force

With an aging population and slowed growth among the younger population, Canada is set for a significant labour shortage within the next two decades. About 38% of the current workforce falls between the ages of 50 to 65. Higher participation rates among women, immigrants, older workers, and aboriginals will not address labour shortages and the present conditions for these workers are not always favourable²⁰.

- Among immigrants, insufficient language skills in one or both of the official languages is playing a significant role in their ability to enter and thrive in the Canadian labour force²¹ despite their educational attainment. From 1991 to 2006, recent immigrants with a university degree working at jobs with low educational requirements grew from 22% to 28% for men and from 36% to 44% for women.
- In a longitudinal survey of immigrants to Canada conducted by Statistics Canada (2007), immigrants reported language barriers as their biggest difficulty next to finding adequate jobs. Four years after arriving in Canada, 26% of immigrants still reported language difficulties in English or French.

¹⁸ OECD (2010) OECD Territorial Reviews: Toronto, Canada. < www.oecd.org/gov/regional/toronto>. (Last accessed May 5th, 2010)

¹⁹ City of Toronto, 2009 Budget Summary, http://www.toronto.ca/budget2009/pdf/bb09_execsummary.pdf

²⁰ TD Economics, The Changing Canadian Workplace, March 8th, 2010

²¹ TD Economics' report on the literacy of immigrants in Canada

- Women, immigrants, and aboriginals continue to be significantly underrepresented in senior management and managerial roles.
 - Less than 4 in 10 managers in Canada are women;
 - Women are significantly overrepresented in part time employment. In 2008, 26.4% of employed women worked part time compared to 11.4% of men. Most women choose part time employment in order to care for children but for others, the predominant reason is the inability to find full time employment.
- In 2009, 47% of the labour force was composed of women, yet Canada has the 4th largest gender gap in wages of all 30 developed nations. And despite having similar post secondary attainment, the average full time female worker earns 23.4% less than male counterparts.
- Over the past decade, a recent trend has emerged on the increasing participation rates of older workers; since 1997 the participation rates of workers aged 55 and over has grown from 23% to 35%. It is not simply that older workers are choosing to remain in the labour force for longer, many are opting to work post-retirement. In 2004, 10% of those 50-69 were employed after their retirement.

Productivity

Productivity growth in Canada continues to lag seriously behind other OECD nations and we are becoming increasingly less competitive in the global market:

- Among OECD countries, productivity in Canada as a whole was above the OECD average for 1995 to 2000. However, from 2001 to 2006, productivity weakened, with annual growth of 1% in 2001-2006, compared to an OECD average of 1.8%;²²
- Business sector productivity in Canada is 26.4% less than the U.S., compared to 2001 when productivity in both countries was equal.²³ About 40% of the nation's business headquarters are located in Toronto;²⁴
- The federal government is also launching an initiative to examine and better the way the Canadian economy utilizes technology. Canada has fallen behind in this area; average investment in information and communications technology per worker is only 60 percent of an American worker²⁵. The government is aiming to change that and have been advised to get every sector in the economy thinking about how they can innovate and use technology. This includes the education sector.

²² OECD (2010) OECD Territorial Reviews: Toronto, Canada. < www.oecd.org/gov/regional/toronto>. (Last accessed May 5th, 2010)

²³ TD Economics, The Changing Canadian Workplace, March 8th, 2010

²⁴ OECD (2010) OECD Territorial Reviews: Toronto, Canada. < www.oecd.org/gov/regional/toronto>. (Last accessed May 5th, 2010)

²⁵ Council of Canadian Academies Expert Panel on Business Innovation

Innovation

Innovation is a key driver of national economies. Canada has a very poor rating in terms of our innovation capacity. In the present economic climate, the need for innovation is even more important. We know from various national and international studies that Canada lags in innovation compared to similar developed countries.

- The Conference Board of Canada, in its 11th annual snapshot of Canada's socio-economic performance entitled *How Canada Performs: A Report Card on Canada*, assessed Canada's ranking as 13th out of 17 countries in innovation and gave this component its worse grade — a “D” and that “it’s been a “D” for decades”.²⁶
- In its 2007 annual report, the Conference Board states that “Canada is lagging when it comes to achievements in innovation — both in terms of putting scientific knowledge to commercial use and in terms of *creative thinking more generally* [italics added]— and this is hampering progress across all the spheres of national performance”²⁷ [p. 8]. It further comments that: “Running through these results is the common thread of a failure to innovate — both in the precise economic sense of creating, diffusing, and using knowledge through commercialization to improve productivity, and in the more general sense of being creative in the design and implementation of public policy” [p. 10].
- The OECD and Global Insight have drawn similar conclusions regarding Canada's weak position in terms of innovation capacity and performance. Global Insight assigned a rating of “C-”, its lowest rating among eight factors reviewed, for Canada's 'Capacity to innovate'.²⁸

The Martin Prosperity Institute of the University of Toronto used the Canadian and U.S. labour force data to identify what “really matter in today’s economy.”²⁹ Researchers identified three broad set of skills found in today’s workplace (Figure 1): analytical, social intelligence and physical skills and concluded that a higher degree of value will continue to be placed in the former two. However, researchers noted that in Ontario, we undervalue these two skill sets generally found in creativity-oriented occupations and do not compare favourably to other peer U.S. states.³⁰ (Figure 2). Fostering improved innovation and productivity requires innovation literacy that combines essential skills for critical thinking based on job-specific skills and knowledge; furthermore, “Creativity-oriented jobs require knowledge and understanding in specific fields, but they also depend heavily on the ability of workers to recognize patterns,

²⁶ <http://sso.conferenceboard.ca/HCP>

²⁷ <http://www.conferenceboard.ca/about-CBoC/annual-report.asp>

²⁸ Global Insight Canada on Canada's Fundamentals

²⁹ Martin Prosperity Institute (nd; p1). Martin Prosperity Insights - Occupations draw on three types of skills. Rothman School of Management. University of Toronto.

³⁰ Martin Prosperity Institute (2009). Ontario in the creative age. Rothman School of Management. University of Toronto

analyze alternatives, and decide the best way to proceed.” (Martin Prosperity Institute, p 5)³¹

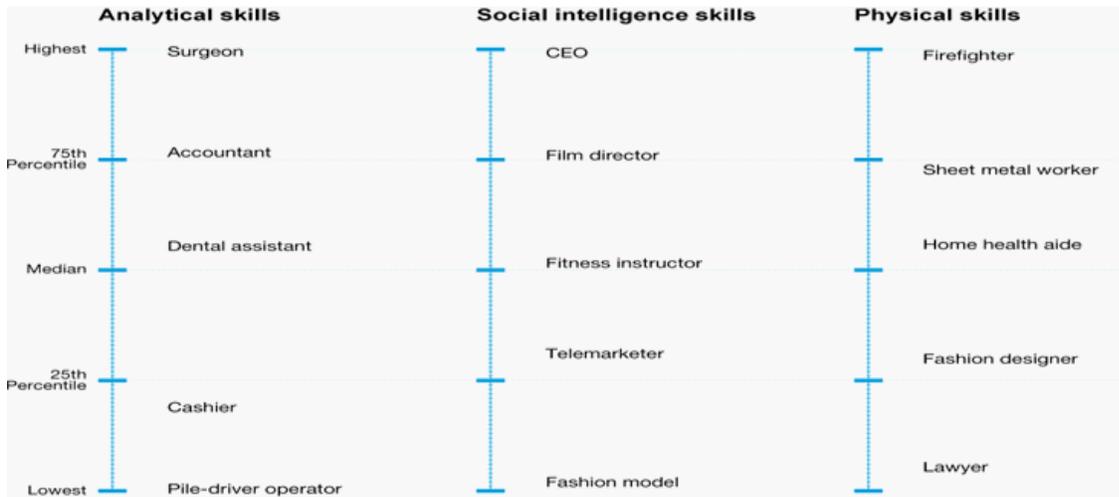
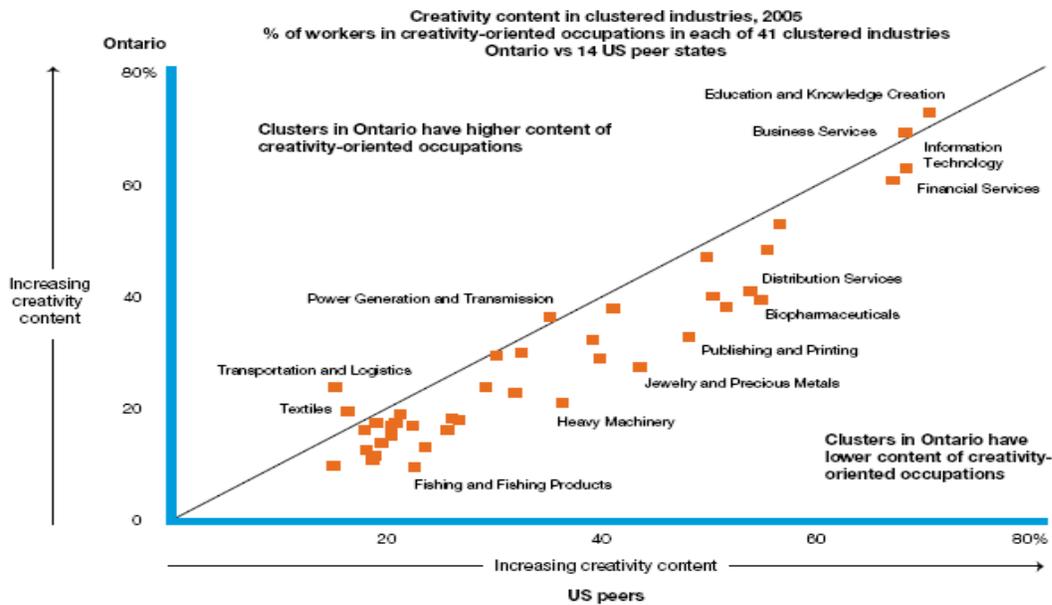


Figure 1: Three broad skills used in today's economy



Note: Full time and part time combined; results are weighted average across 14 peer states.
 Sources: Martin Prosperity Institute and Institute for Competitiveness & Prosperity analysis based on data from American Community Survey, PUMS 2005; County Business Patterns, 2005; Canadian Census, 2006; Canadian Business Patterns, 2006.

Figure 2: Creativity content in clustered industries

³¹ Ibid

3. Industry Trends

The following section provides key industry trend projections from Human Resources and Skills Development Canada and Service Canada. These are followed by trends relative to George Brown College Divisional clusters.

HRSDC INDUSTRY PROJECTIONS (2006-2015)³²

Service Industry: Overall Growth

Employment growth is expected to be fastest in service producing industries. Employment in the service sector is expected to rise at an annual average rate of 1.2% (an increase of nearly 1.6 million jobs during the 2006-15 period). In the goods-producing industries, the average annual rate of new job creation, at only 0.8% (slightly more than 0.3 million jobs), will be less than the average of 1.1%.

Among the service industries, employment growth is expected to be strongest in

- *computer system design,*
- *health and professional services*

Service Industry: Decline

Some service industries are expected to experience below-average employment growth

- public administration, as larger quantities of public funds are directed towards health and education,
- the finance industry
- insurance,
- real estate
- leasing sector given the anticipated slowdown in real estate and mortgage lending and stronger productivity;
- the education sector, as a result of the expected slowdown in population growth.

Goods Producing Industries: Growth

- growth in oil and gas extraction (average annual growth rate of 2.0%),
- support activities for mining and oil and gas extraction (1.9%) and

³² Looking Ahead: A 10 Year Outlook for the Canadian Labour Market (2006-2015)

http://www.hrsdc.gc.ca/eng/publications_resources/research/categories/labour_market_e/sp_615_10_06/page06.shtml

- construction (1.3%).

Goods Producing Industries: Decline

In the other primary industries, employment growth will be below average, including

- forestry (-0.6%),
- mining (0.2%)
- agriculture (0.3%).

Manufacturing: Overall Limited Growth

In manufacturing, the employment growth outlook is limited. For the sector as a whole, the annual average rate should be 0.6%. Employment growth should decline for:

- pulp and paper,
- wood product manufacturing,
- printing,
- other manufacturing industries (mainly textiles, clothing and furniture)
- motor vehicle and parts manufacturing employment is expected to decline.

Manufacturing Growth

Employment growth should be strong in:

- computer and electronic products,
- some categories of transportation equipment (aerospace products and parts) and
- metal products and machinery

Labour Force By Skill Level

Over the next 10 years, the labour force in occupations usually requiring university education is expected to be the fastest-growing component of labour supply, advancing at an average rate of 1.6% per year. In contrast, the labour force in occupations usually requiring less than high school is expected to be growing at the slowest rate, averaging 0.6% over the 2006-15 period. This is not surprising, given that the growth of the labour force is expected to be strongest among those with university education and weakest among those with less than high school education — the primary feeding groups of these occupational skill levels

Most Promising Occupational Sectors

- Health: Professionals such as physicians, dentists, pharmacists and registered nurses; medical technologists and technicians; therapy and assessment professionals; technical occupations in dental health care;
- Engineering and Science: Electrical and electronics engineers;

- Business: Specialists in human resources; professional occupations in business services to management;
- Management: Managers in construction and transportation; art, culture,
- Recreation and sports; engineering, architecture, science and information
- Systems; administrative services;
- Other Occupations: Psychologists; social workers; judges, lawyers and Quebec notaries; oil and gas well drilling workers and services operators;
- supervisors (mining and oil and gas); supervisors (processing occupations).

SERVICE CANADA WORK PROSPECTS: CURRENT CONDITIONS

Programs of Study with Good Current Work Prospects³³

- Administrative Services Managers
- Ambulance Attendants and other Paramedical Occupations
- Civil, Mechanical, Electrical and Chemical Engineers
- Dental Assistants
- Dentists
- Family, Marriage and other Related Counsellors
- Facility Operation and Maintenance Managers
- General Practitioner
- Head Nurses and Supervisors
- Judges, Lawyers, and Quebec Notaries
- Loan Officers
- Managers in Art, Culture, Recreation, and Sport
- Managers in Construction and Transportation
- Managers in Engineering, Architecture, and Information Systems
- Managers in Public Administration
- Medical Laboratory Technologists and Pathologists Assistants
- Medical Radiation Technologists and Technicians
- Nurses Aides, Orderlies, and Patient Service Associates
- Occupational Therapists

³³ Service Canada <http://www.jobfutures.ca/noc/browse-occupations-work-prospects.shtml>

Programs of Study Work Prospects That are Currently Limited

- Assemblers and Inspectors, Electrical Appliance, Apparatus and Equipment Manufacturing
- Athletes, Coaches, Referees
- Babysitters, Nannies, Mothers Helpers
- Bakers
- Cabinetmakers
- Chainsaw and Skidder Operators
- Clerical Occupations, General Office Skills
- Construction Trades Helpers and Labourers
- Cooks
- Data Entry Clerks
- Drafting Technologists and Technicians
- Electronic and Service Technicians
- Electronics Assemblers, Fabricators, Inspectors and Testers
- Hotel Front Desk Clerks
- Laborers in Processing, Manufacturing, and Utilities
- Landscaping and Grounds Maintenance Contractors and Managers
- Mail and Message Distribution Occupations
- Materials Handlers
- Mechanical Electrical, and Electronics Assemblers and Inspectors
- Nursery and Greenhouse Workers
- Occupations in Food and Beverage Service
- Occupations in Travel and Accommodation

Programs of Study with Good *Future* Job Prospects

- Dental Hygiene/Assistant Technologies
- Nursing-Other
- Nursing Aide-Orderly
- Dental Hygiene/Assistant Technologies
- Health Technologies-Other
- Medical Laboratory Technologies
- Nursing
- Radiography, Radiation Therapy and Nuclear Medicine Technologies

Programs of Study with Limited *Future* Work Prospects

- Agriculture Technologies
- Architectural Design and Drafting Technologies

- Cooking
- Creative and Design Arts
- Drafting Technologies
- Food Preparation-Other
- Food Processing Technologies
- Retail Sales
- Secretary –General
- Secretary-Legal
- Secretary-Word Processing
- Service Industries Technologies-Other

INDUSTRY TRENDS: CONSTRUCTION AND ENGINEERING TECHNOLOGIES

- Growth in engineering construction is expected to average 1.1% from 2012 to 2016³⁴
- Non-residential building construction is expected to advance by 2.6% per year on average from 2010 to 2016;³⁵
- From 2010 to 2016, growth in construction employment will average 1.1%;³⁶
- The Green Energy Act in Ontario has many implications for this sector; everything from green utilities to green housing will mean a significant change to the skills and knowledge needed for this workforce;³⁷
- Reports suggest that as many as 90,000 net new jobs can be created in Ontario because of the Green Energy Act³⁸ with newly emerging occupations that will require some form of post-secondary education to fill them. This highlights the importance of increasing the availability of education programs that are environmentally related in this sector;³⁹
- Environmentally related programs are currently experiencing increases in graduates across colleges and universities. Some examples of environmentally related PSE programs offered in the GTA include; Certificate in Sustainability, Environmental Engineering Science Certificate, Environmental Ethics, Environmental and Health Studies, Environmental Protection Technician/Technology Diploma Program,

³⁴ The Construction Sector Council, Construction Looking Forward, An Assessment of Construction Labour Markets from 2008 to 2016 for Ontario

³⁵ The Construction Sector Council, Construction Looking Forward, An Assessment of Construction Labour Markets from 2008 to 2016 for Ontario

³⁶ The Construction Sector Council, Construction Looking Forward, An Assessment of Construction Labour Markets from 2008 to 2016 for Ontario

³⁷ Greening the Economy, Transitioning to New Careers

³⁸ Business Council of British Columbia. May, 2009. *Charting the Green Economy*. Environment & Energy Bulletin

³⁹ Greening the Economy, Transitioning to New Careers

Sustainable Energy & Building Technology, and Environmental Control. In 2005, 5% of all college graduates in Canada graduated from an environmentally related program⁴⁰. However, several programs are falling behind due to relevance and promotion. Post-secondary institutions need to bridge the gap between traditional training in these fields and the transition to a greener career and address their relevance through labour market research⁴¹

- More and more new building and renovations are opting to get Leadership in Energy and Environmental Design (LEED) certified. LEED is about the global adoption of sustainable green building and development. It is a third-party certification program that is internationally accepted. LEED is the benchmark of green design, construction and operation.
- In Canada, the construction industry is booming, making for 13% of the Canadian economy (\$168 billion).⁴²

INDUSTRY TRENDS: BUSINESS, ARTS AND DESIGN

Business

- Research from the Martin Prosperity Institute (2009) found that across Canada employment in the Service Sector rose almost 50% from 6.3 million in 1976 to 12.5 million in 2006, while the Goods Producing Sector stayed relatively the same at 3.3 million in 1976 and 3.9 million in 2006. Across Canada, GDP in the Service Sector increased by seven times over 30 years (\$115 billion in 1976 and \$850 billion in 2005) while GDP in the Goods Producing Sector increased by six times as much the same time period (\$73 billion in 1976 and \$430 billion in 2005). Across Canada Service Class jobs employ about 46% of the total work force, but make 35% of the total employment income. Whereas Creative Class jobs employ 29% of the total work force and make 42% of the total employment income. Working Class jobs employ 22% of the total work force and generate 20% of the total employment income.
- Human Resources: A recent Conference Board of Canada report, Human Resources Trends and Metrics (June 2010), lists the top four strategic Human Resources priorities as: (1) strategic workforce planning, (2) succession management, (3) management/leadership development, and (4) knowledge transfer/management.
- Logistics and Supply Chain Management: Based on current sector employment levels, the total estimated annual demand for employees to fill new logistics and supply chain

⁴⁰ ECO Canada, 2007. Labour Market Transition: A Remedy for Labour Shortages in the Environment.

⁴¹ Greening the Economy, Transitioning to New Careers

⁴² Construction Sector Council, Everywhere you look, people are building. <http://www.careersinconstruction.ca/> (Last accessed April 22, 2010).

management jobs (as well as anticipated vacancies resulting from retirements and turnover) is approximately 86,330 employees annually, or 12.3% over the next three to five years.⁴³

- In 2003 over one in 20 working Canadians (5.5 percent) was self-employed and had an incorporated business. By 2008, 6.3 percent of working Canadians were self-employed with an incorporated business, which is an increase of 15 percent.⁴⁴
 - Over the ten-year period from 1997 to 2007, Canadian business owners have higher education levels. The proportion of college and university graduates has increased — from 58 percent of the incorporated self employed with paid help in 1997 to 63 percent in 2007.
 - Over the period 2004 to 2007, there has been an increase in the age and the experience of Canadian SME owners, particular those over 50 years and those with more than 5 years experience. This trend reflects the aging of the Canadian population as a whole. It suggests that over the next 10–15 years a substantial proportion of current business owners will be seeking retirement and want to transfer business ownership to family members or outside purchasers.

Financial Services

- The Ontario Government has identified the financial sector as a key priority for job growth in the province (2010 Throne Speech).
- A 2009 Deloitte study, “Centre of Excellence in Financial Services Education and Innovation,” highlighted roles that are projected to be in shortage in the financial services sector of the Toronto region. The report identified shortages for in-demand “mass” and “niche” roles across four main clusters in the sector.

Roles	Consumer Banking	Corporate & Investment Banking	Investment Management	Insurance
Niche	<ul style="list-style-type: none"> • Accountant • Compliance/Audit Roles • Lending Officer • Adjudicator 	<ul style="list-style-type: none"> • Accountant • Compliance/Audit Roles • Risk Analyst 	<ul style="list-style-type: none"> • Accountant • Compliance/Audit Roles • Sales Trainer • Controller 	<ul style="list-style-type: none"> • Actuary • Accountant • Broker • Compliance/Audit Roles • Customer Service • Claims Handler • Financial Advisor • Financial Modeler
Mass	<ul style="list-style-type: none"> • Customer service • Financial Advisor 	<ul style="list-style-type: none"> • Origination Roles • Financial Analyst 	<ul style="list-style-type: none"> • Financial Analyst • Financial Advisor 	<ul style="list-style-type: none"> • Financial Analyst • Underwriter

⁴³ Industry Canada. (2008). *State of Logistics: The Canadian Report*. Retrieved June 29, 2010, from http://www.ic.gc.ca/eic/site/dsib-logi.nsf/eng/h_pj00458.html

⁴⁴ Industry Canada (2010). *The State of Entrepreneurship in Canada*.

	• Financial Analyst		• Fund Accountant	
			• Sales Agent	
Technology (sector-wide)	• Business Analyst	• Desktop/Devices Expert	• Infrastructure Management – Legacy Systems	• IT Architect
	• Program Manager			

Source: Adapted from Deloitte, Centre of Excellence in Financial Services Education and Innovation, 2009

Arts

- The current industry classification for apparel is no longer relevant. The new definition should be based on all organizations involved in design, production, importing, marketing, selling and distribution of clothing, accessories, footwear and sewn products. Under this new definition the Canadian economy had 75,000 apparel sector jobs in 2007 with more than \$13 billion in revenue. Including the primary and secondary subsectors the revenue is more than \$41 billion. SMEs are 38% of the employers.⁴⁵
- The retail sector is either the first or the second largest employer in every Canadian province. It accounts for 2.1 million jobs in Canada and at 11.6% of the total workforce is the largest national employer. In Ontario, retail accounts for 806,700 jobs (11.2% of total) which positions it second to manufacturing with 899,800 jobs.⁴⁶ Retail accounts for one of every eight Canadian jobs for the past 20 years.⁴⁷ Today 30% of retail jobs are considered management and tactical occupations requiring advanced skills in:⁴⁸
 - Multi-channel retailing
 - International retail markets and culture
 - Store design and planning
 - Productivity
 - Logistics management
 - Relationship marketing
 - Advanced buying process

Design

- The Federal Government has recently announced that it will develop and launch a Digital Economy Strategy to foster prosperity, competitiveness and innovation. The

⁴⁵ From Presentation by Alan Milstein, Milstein and Co. Consultants to Apparel Affinity Human Resources Conference, Quebec City, June 2010

⁴⁶ RCC Retail Council of Canada Retail Fast Facts, March 2010 from Statistics Canada Labour Force Survey

⁴⁷ RCC Retail Council of Canada "A Changing Retail Landscape – Key Findings, November, 2009

⁴⁸ Industry Canada – Canadian Retail Trade Industry – State of Retail: The Canadian Report 2010

strategy is expected to bolster the creative industries, foster innovation in technology and communications, and drive economic growth and job creation.⁴⁹

- Overall, there are approximately 2,960 interactive digital media companies in Canada employing 51,000 to 52,500 Full-time Equivalents (FTEs) through full-time staff, part-time staff and subcontractors. Canada's interactive media industry has experienced significant growth across all key indicators over the last two years. There have been overall increases in average revenue and staffing levels since 2006.⁵⁰
- DFC Intelligence (Video Game and Entertainment Industry Research) is forecasting that the overall global revenue for the games industry (consoles, PCs, portables, and online social games) will rise to \$70.1 billion in 2015, from \$60.4 billion in 2009.
 - DFC believes that there will be a shift in consumer spending away from brick-and-mortar retail sales and towards online digital delivery services like subscription-based online play. The free-to-play gaming market is expected to explode over the next few years, reaching over \$7 billion worldwide by 2015 – more than double the revenue for 2009. In North America and Europe alone, DFC forecasts that the Massively Multiplayer Online Game (MMOG) Lite market will grow from about \$800 million in 2009 to over \$3 billion by 2015.
- The Canadian entertainment software industry – which is projected to grow 29% annually over the next few years – is currently ranked third in the world. This industry employs over 14,000 highly skilled and highly paid individuals in programming, art, animation, visual effects, game design, sound design, motion capture, production, quality assurance, business and marketing, and contributes billions to the Canadian economy.⁵¹
 - Geographically, much of Canada's entertainment software industry is concentrated in three urban regions: Vancouver (42%), Montreal (32%) and the Greater Toronto Area (9%).⁵²

⁴⁹ Entertainment Software Association of Canada, *Playing to Win in the Digital Economy*, April 2010

⁵⁰ Canadian Interactive Alliance, *2008 Canadian Interactive Industry Profile*, February 2009

⁵¹ Entertainment Software Association of Canada, *Playing to Win in the Digital Economy*, April 2010

⁵² Hickling Arthurs Low. (March 2009). *Canada's Entertainment Software Industry: The Opportunities and Challenges of a Growing Industry*. Retrieved June 25, 2010, from <http://www.theesa.ca/documents/ResearchReport09.pdf>

- According to the World Tourism Organization by 2020 the top three receiving regions will be *Europe (717 million tourists), East Asia and the Pacific (397 million) and the Americas (282 million)*. Although, *Europe and Americas are anticipated to show lower than average growth rates. (Market share – 1995: 19.3%, 2020: 18.1%)*
 - *Within the Americas, The US, Mexico and Canada will remain the leading destinations (102.4, 48.9 and 40.6 million respectively in 2020)*
- The U.S. intends to significantly increase passport processing fees. This will serve as a further hindrance to cross-border travel to Canada.⁵³
- Some tourism trends:
- Economic impact of the Pan Am Games 2015 projected to be significant due to construction; increased awareness of Toronto as an international destination and spin-off tourist activity.
- Special events, festivals, cultural diversity and attractions continue to drive tourism demand: Toronto's reputation as a leader in these areas will drive national and international demand in the conference, convention, corporate and pleasure markets.
- Emerging trends and focus: slow food movement, nutrition, social conscience in food, emerging ethnic foods, local food movement, branding programs.
- Market sectors will continue to merge and competition amongst each will increase as each tries to increase market share (e.g., pubs compete against full service restaurants; fast food operates increase menu offerings etc.).
- Focus upon nutritional cuisine and special diets, growth in retirement community & leisure and wellness management businesses/communities.
- Shifting demographics (baby boomers and growing retirement home market); changes in business and pleasure travel destinations and reasons for travel will create new niche markets and growth opportunities.
 - Responsible (green) tourism: promotion of recycling, energy efficiency, water conservation;
 - Slow and local movement: 'Staycations'⁵⁴: phenomenon of vacationing at home which started in 2008. 'Slow Travel'⁵⁵ - refers to a grass-roots movement that encourages tourists to travel locally, to stay in one place rather than packing a lot of destinations into their itineraries, and to reject motorised transportation like air or automobile travel in favour of walking or cycling;
 - Growth in five-star hotel and residence properties in Toronto will drive demand for labour with specialized skill sets;⁵⁶
 - Accelerated labour shortages: over 118,000 foodservice positions are predicted to be unfilled by 2020;⁵⁷

⁵³ Tourism Industry Association of Canada, December 2009

⁵⁴ Journal of Tourism and Cultural Change, 2009

⁵⁵ Journal of Tourism and Cultural Change, 2009

⁵⁶ Centre for Hospitality and Culinary Arts. (2010). Looking Forward. George Brown College

- More sophisticated foodservice operations in an attempt to increase occupancy levels (e.g. hiring a celebrity chef);⁵⁸
- Opportunity for foodservice operators and contract caterers as outsourcing of food and other services will continue to grow;⁵⁹
- As Governments create new tax and capital incentive programs, investment in tourism attractions are expected to drive demand particularly in Toronto and Ontario over the next 10 years.⁶⁰

INDUSTRY TRENDS: HEALTH AND COMMUNITY SERVICES

Health care will always be a pressing issue for all Canadians. With an aging population there is increasing pressure on the health care system and the health care work force to develop along with it.

- With demand for health care increasing due to the rise of chronic illness and the aging population, there is a need for collaborative and comprehensive care from multiple professionals in the health industry that could lead to increased demand for interprofessional care;⁶¹
- Interprofessional care in forms such as health care teams is believed to be one way we can address the shortage of medical doctors in certain areas of the province. Currently health care teams service 16% of Ontario's nearly 13 million residents;⁶²
- Colleges and Universities are seen as the places where we can best train the workforce for interprofessional care; the challenge comes with how we can train individuals across varying healthcare professions and roles to work collaboratively with the patient and their families;⁶³
- Health Force Ontario is projecting new roles within health care not currently in the GBC portfolio such as a Post Graduate Certificate in Surgical First Assistant;
- Scope and practice of registered practical nurses is changing and expanding; market trends in the GTA indicate the increasing demand for registered practical nurses and that there is an increasing demand for them to work in non-traditional areas;

⁵⁷ Centre for Hospitality and Culinary Arts. (2010). Looking Forward. George Brown College

⁵⁸ Centre for Hospitality and Culinary Arts. (2010). Looking Forward. George Brown College

⁵⁹ Centre for Hospitality and Culinary Arts. (2010). Looking Forward. George Brown College

⁶⁰ Centre for Hospitality and Culinary Arts. (2010). Looking Forward. George Brown College

⁶¹ Ontario Ministry of Health and Long Term Care (2007). [INTERPROFESSIONAL CARE: A BLUEPRINT FOR ACTION IN ONTARIO.](#)

⁶² Health Council of Canada. (2009). [TEAMS IN ACTION: PRIMARY HEALTH CARE TEAMS FOR CANADIANS.](#) Toronto: Health Council.

⁶³ Ontario Ministry of Health and Long Term Care (2007). [INTERPROFESSIONAL CARE: A BLUEPRINT FOR ACTION IN ONTARIO.](#)

- Low demand for operating room post-graduate schooling;
- Higher demand for critical care Activation-Gerontology is facing low to moderate demand particularly since the Ministry of Health and Long Term Care is reducing financial contributions in the area of adult day program.

On the community services front, a number of opportunities have been identified:

- The Ontario government recently passed the full Day Early Learning legislation to begin rolling out full day care for 4 and 5 year olds, starting in 2010. This could lead to an increase demand for early childhood educators.⁶⁴
- GBC was recently granted permission to offer a college degree program in early childhood education.
- Increase demand for Intervener and Interpreter programs; There is a potential to develop an apprenticeship program at GBC for the significant numbers of Interveners who have not received formal training; Autism graduates will continue to be in demand.⁶⁵

⁶⁴ Florida, R., Martin, R., Ontario in the Creative Age. February 5, 2009. <http://www.martinprosperity.org/research-and-publications/publication/ontario-in-the-creative-age-project>

⁶⁵ Patricia Chorney-Rubin

4. Postsecondary Education (PSE)

"THE ILLITERATE OF THE 21ST CENTURY WILL NOT BE THOSE WHO CANNOT READ OR WRITE, BUT THOSE WHO CANNOT LEARN, UNLEARN AND RELEARN." ALVIN TOFFLER

- An estimated 65% of all jobs created over the next 5 years will require some form of post-secondary education⁶⁶
- Approximately half of all Canadians do not have any post-secondary education⁶⁷
- One of the primary obstacles to post-secondary attainment in Canada is access; qualified students are faced with increasingly higher financial barriers and not enough financial aid, awards, and scholarships⁶⁸
- Literacy skills is a pressing issue for all; over 50% of adults in Canada do not have a desirable proficiency level with English or French skills for the labour force⁶⁹

Regulation

Federal

In its *Economic Action Plan*, the federal government announced it will continue to provide enhanced support for skills, apprenticeships, and training for Canadian workers. The throne speech (2010) states the government will launch a new digital economy strategy. Ottawa will extend support for advanced research, development, and prototyping of new space-based technologies. The government will collaborate with Aboriginal communities, provinces, and territories to reform and strengthen education, and to support student success.

- The federal government will provide \$1 billion to support deferred maintenance, repair, and construction at post-secondary institutions.
- Ottawa is committing \$1.9 billion to enhance the availability of training, including \$80 million for the Apprenticeship Completion Grant and \$55 million for youth employment.
- Among its investments in research, the Federal Government has recently doubled the College and Community Innovation Program budget with an additional \$15 million per year, totaling \$30M per year for college applied research funding. This is following increasing investments in applied research in Canada's colleges from the Federal Science and Technology Strategy to Ontario provincial applied research

⁶⁶ Service Canada: Job Futures 2007

⁶⁷ Statistics Canada, 2006 Census

⁶⁸ TD Economics, *The Changing Canadian Workplace*, March 8th, 2010

⁶⁹ TD Economics' report on the literacy of immigrants in Canada

priorities. Colleges are increasingly seen by all levels of government as key partners in a public+private partnership funding model that supports the innovation ecosystem. Investing in the applied research layer of Canada enhances our overall social and economic productivity. Colleges represent a key vehicle for attracting business expenditures on research and development (BERD), matching the higher education expenditures on R&D (HERD).⁷⁰ Colleges work with established basic research centres and industry partners to enhance competitiveness overall in the sectors we serve. Generally speaking, firms are not making effective use of the postsecondary research facilities we currently have. The goal of College applied research centres is to enable firms to make more effective use of public applied research facilities in support of increased BERD, which will result in increased productivity.

In 2008, Citizenship and Immigration Canada announced the new Canadian Experience Class. This program is a new Permanent Resident application class for temporary foreign workers and international students who have graduated from a recognized Canadian post-secondary educational institution. International students with knowledge of English or French who have attended a postsecondary education institution and have at least one year of full-time (or equivalent) skilled work experience in Canada may apply.

Provincial

The *Open Ontario Plan* as outlined in the 2010 budget, the Ontario government will invest \$310 million to add 20,000 new spaces to colleges and universities this year. The government aims to improve students' ability to navigate the province's PSE system by providing additional resources to support the implementation of a credit transfer system. It also plans to raise the province's **post-secondary attainment rate to 70% from 62%** and aggressively promote its post-secondary institutions abroad, by increasing international enrolment by 50% over the next five years while maintaining spaces for Ontario students.

- The Higher Education Quality Council of Ontario (HEQCO) has been actively collaborating with the MTCU to assist in the development of a new Multi-Year Accountability Agreement (MYAA – see Figure, below) framework for the PSE system that could include:
 - System Accountability: to ensure that system-wide objectives are met. There are four steps in designing an accountability component for the PSE system: 1. Define broad objectives for the PSE system, 2. Choose appropriate indicators and targets, 3. Devise a process for evaluating performance against those targets, 4.

⁷⁰ Canada is second in the OECD for HERD; 15th for BERD. Realigning this imbalance and encouraging more private R&D investment is seen by many as one way to increase productivity.

Develop a procedure for reporting to the public in a clear and transparent fashion.

- Institutional Accountability: to support an appropriate degree of monitoring of colleges and universities.
- Planning: to provide clear direction of how change, where required, is to be achieved.
- Ontario’s Second Career Program was first launched in 2008 as a \$355-million, 3-year initiative to help laid-off workers upgrade their skills. The Program was so popular that in October 2009 the province put another \$78 million into the program.
- Financial Assistance: The Ontario government is providing \$81 million in additional financial support for college and university students. These changes will improve assistance for about 188,000 students. Since 2003-04, there has been a 51% increase in the number of Ontario college and university students receiving financial support through OSAP.

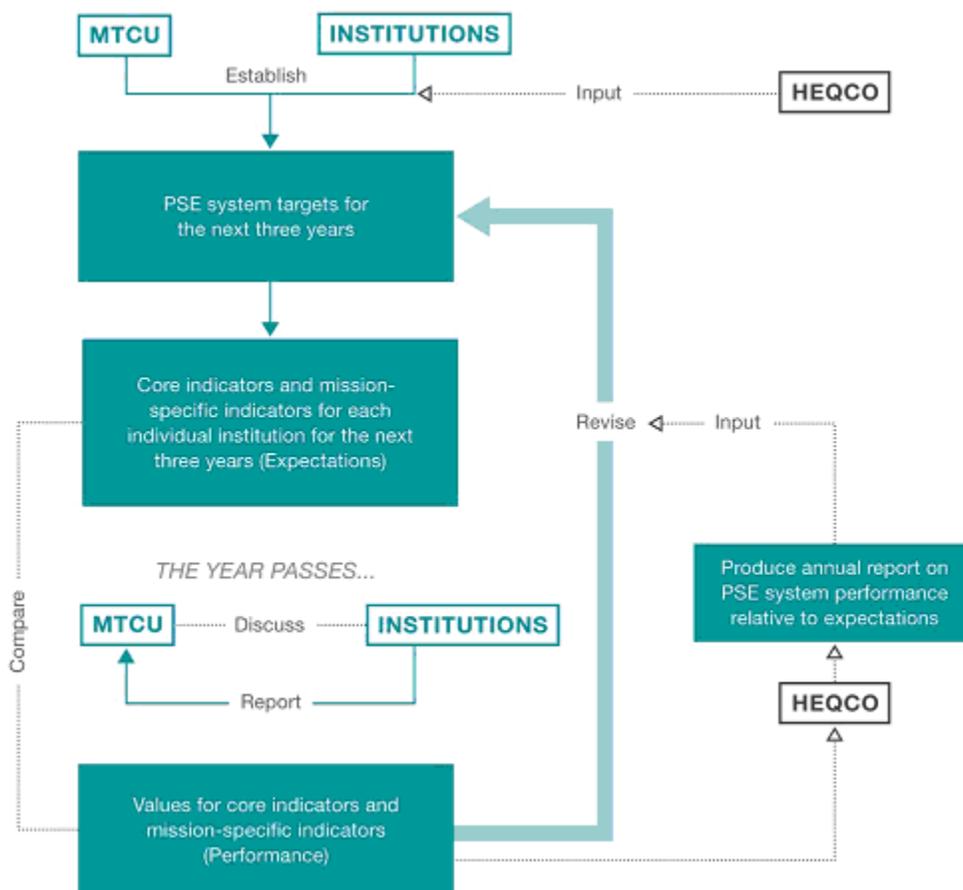


Figure 3: Proposed MYAA Process

Postsecondary Education Trends (PSE)

- PSE institution differentiation⁷¹
- Increase in services for under-prepared students
- Internationalization:
 - Increased international recruitment efforts
 - Increased number of partnerships with Chinese and Indian PSE institutions
- Technology: flexible delivery, social media, learning ‘anywhere/anytime’, technical and digital literacy, ‘edutainment’ (used of gaming to deliver educational material)
- Credential recognition, articulation and transfer systems:
 - The Alberta Council on Articulation and Transfer (ACAT⁷²): Alberta has an extensively developed articulation system which enables students transfer between programs at any of the post secondary institutions. To ensure a continued high standard for credentials awarded by post secondary facilities, the Alberta Ministry of Advanced Education established the Campus Alberta Quality Council with membership in the International Network for Quality Assurance Agencies in Higher Education.

CISCO’s Internet Business Solution Group (2007) identified trends in higher education for 2008-2009, some of which are presented below for their relevance to GBC’s environment⁷³:

- **Evergreen students** – young adults (18-26) are typically the first to adopt new technology (‘evergreen’) and expect their institutions to have the infrastructure to support these technologies, such as Web 2.0 and social networking such as blogs and wikis, as well as new online video repository and delivery websites such as YouTube, iTunes U, and Big Think. Smartphones, such as the iPhone, and other such devices have enhanced mobile learning (‘m-learning’). The adoption of virtual reality websites such as Second Life has also provided higher-education institutions with new venues for class gatherings and learning.
- **Globalization** – Demand for higher education is expected to continue to grow, with institutions expanding their presence abroad. “The learning model varies by country and institution, ranging from replicating the home campus, to building local capacity, to participating in faculty exchanges. These global learning environments give students an opportunity to expand their portfolios to include experience that is valued in today’s

⁷¹ University of Toronto

<http://www.publicpolicy.utoronto.ca/FacultyandContacts/IanClarkWebPageatUofT/AcademicTransformation/Academic%20Transformation%20Background%20Documents/Promoting%20Differentiation%20in%20University%20Missions%20-%20Three%20Suggestions%20for%20U%20of%20T.pdf>

⁷² <http://www.acat.gov.ab.ca/>

⁷³ Accessed June 2010

http://www.cisco.com/web/about/ac79/docs/wp/21st_Century_Top_Trends_POV_0811.pdf

workforce.” p 2 At GBC, we’re seeing some initiatives and programs that foster these exchanges e.g. Study abroad and volunteer opportunities for students, graduates and faculty from Early Childhood; Culinary Arts-Italian program.

- **Technical and information literacy** – Institutions will continue to take steps to enhance students’ technical literacy and encourage faculty to use computers, smart devices, and other innovative tools in their curricula.
- **Pedagogical centers and innovative campus commons** - Higher Education institutions are redefining and transforming public spaces in their institutions to create areas called campus commons “High-traffic areas such as the campus library or computer lab typically are the starting point for developing campus commons... many universities are transforming their libraries into campus commons by building food courts, creating social gathering and computer gaming areas, and adding collaborative seating arrangements” p 6. Seneca College is an example of how it has repurposed common areas into campus commons.
- **Edutainment** – “Higher-education content and entertainment (edutainment) are becoming more intertwined.” p 8. Professors are using a combination of iTunes and YouTube to deliver course content. Computer gaming is also emerging as a tool to enhance teaching and learning in a more engaging environment. Cisco estimated that more than 120 schools in the U.S. had a presence in Second Life in 2008, using these virtual spaces for socializing, teaching, learning, and branding.

Innovation

The Conference Board of Canada called for action from educational institutions to support the innovation agenda in a report entitled, 'Solving Canada's Innovation Conundrum: How Public Education Can Help'.⁷⁴ The authors note that “how students develop their innovation skills depends on the nature of their educational experience... Ultimately innovative processes, tools, and techniques generate students with higher levels of skills for innovation”. One of the three strategic approaches identified to make innovation a priority is the development of relevant institutional capacity. The Conference Board's call to action consists of four 'pillars':

- i. Develop a pan-Canadian framework for promoting innovation skills;
- ii. Recognize and credential innovation skills;
- iii. Strengthen links among education, business and communities; and,
- iv. Increase innovation training in pre-service and in-service programs for educators.

Top Employability Skills⁷⁵

Communication:

- Understand and speak the languages in which business is conducted

⁷⁴ Solving Canada's Innovation Conundrum: How Public Education Can Help, July 2003, The Conference Board of Canada

⁷⁵ The Conference Board of Canada Employability Skills http://calsca.com/conference_board.htm

- Listen to understand and learn
- Read, comprehend and use written materials, including graphs, charts and displays
- Write effectively in the languages in which business is conducted

Think:

- Think critically and act logically to evaluate situations, solve problems and make decisions
- Understand and solve problems using mathematics and use the results

Technology:

- Use technology, instruments, tools, and information systems effectively
- Access and apply specialized knowledge from various fields, (eg skilled trades, technology, physical sciences, arts and social sciences,

Learn:

- Continue to learn for life

Personal Management Skills:

- Positive attitude and behaviors
- Responsibility
- Team work skills

GEORGE BROWN COLLEGE

1. S.W.O.T Analysis – GBC’s Board of Governors (2010)

<p>Strengths</p> <ul style="list-style-type: none"> ▪ Increasing specialization ▪ 3++ campuses ▪ Growing accountability ▪ Good relation with unions ▪ Increased diversity – move away Euro centric view of the world ▪ Programs will change faster ▪ Faster turnaround for progress ▪ More movement towards centralization to leverage capacity ▪ Accreditation demand increasing ▪ Increased reliance on technology ▪ Strengthened planning – from college to centre to school to program ▪ Strong alignment to GBC – pride of employees committed to employer ▪ More people today “newer” than those who have been here a long time result new ideas vs. old 	<p>Weaknesses</p> <ul style="list-style-type: none"> ▪ Pressure on contribution margins ▪ Resources not available – Internal competition for scarce resources including space ▪ Career development ▪ Aging staff ▪ Succession planning ▪ Not entering new sectors as quickly as sectors develop ▪ Too much to do – do we do it all well? ▪ Not prepared for increasing number of high needs students
<p>Opportunities</p> <ul style="list-style-type: none"> ▪ Labour market shortages <ul style="list-style-type: none"> ○ to grow in non post-secondary, non government funded - continuing education, international, contract training, fundraising, applied research ▪ Demand for real-time learning; rapid change in nature of work enabled by technology; how society wants learning flexible learning patterns: ▪ Wireless, internet ▪ Meet the needs of learning anytime anywhere on demand ▪ Mobility of labour force ▪ Technology advancements ▪ Increasing demand for post-secondary education ▪ Student expectations for use of technology; Constant and rapid changing expectations of students 	<p>Threats</p> <ul style="list-style-type: none"> ▪ State of public finances and competition for scarce resources ▪ Pressure on placements ▪ Shortage of applied opportunities ▪ Labour shortage ▪ Aging faculty and staff; turnover; competition for talent ▪ No more mandatory retirement (though average age of retirement is still 62) ▪ Government view of colleges; government shift in importance of college education

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| <ul style="list-style-type: none">▪ Toronto's changing demographics▪ preparing immigrants for work and preparing employers to work with immigrants▪ Shortage in corporate training▪ Creative and cost effective ways to heal government pain▪ Healthcare▪ Applied research▪ Economic downturn▪ Labour market fluctuations▪ Multi-career life▪ University and college grads as parents (college first, then university)▪ Seniors without pensions | |
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2. Competitive Analysis

Applicant Perceptions: Reason for Applying⁷⁶

The following highlights GBC's strengths and weaknesses relative to key competitor institutions as perceived by applicants.

Strengths	Weaknesses
<ul style="list-style-type: none"> ▪ Off-campus urban life ▪ Diversity of student population ▪ Academic reputation of institution ▪ Institution rankings/ guidebook ratings ▪ Part-time job opportunities/ work-study options ▪ Graduates get high-quality jobs ▪ International exchange options ▪ Relevant industry in the geographical area 	<ul style="list-style-type: none"> ▪ No campus housing/residences ▪ Lack of recreational sports/fitness facilities ▪ Lack of personal attention during application/admission process ▪ Large student population, class sizes and surrounding community

GBC'S APPLICANT AND ENROLLMENT GROWTH HAVE OUTPERFORMED OTHER GTA COLLEGES IN RECENT YEARS

- In fall 2009, approximately 33,066 people applied to GBC, placing the college in second place in the GTA after Humber College⁷⁷. Among the top 10 programs that in high demand at GBC, five are also among the top 10 ten in other GTA colleges.

Table 4: Colleges' Top 10 Programs by Number of Applications (Fall 2009)

Program Title	Number of Applications				
	Humber	Seneca	GBC	Sheridan	Centennial
POLICE FOUNDATIONS	1	3	**	1	4
PRACTICAL NURSING	2	5	1	5	2
BACHELOR OF NURSING (BN) or BACHELOR OF SCIENCE IN NURSING (BSCN)	3	2	3		1
EARLY CHILDHOOD EDUCATION	4	1	5	3	3
SOCIAL SERVICE WORKER	5	4	4	2	5

⁷⁶ Academica, 2009 University & College Applicant Study (UCAS): Key Decision Factors Report. George Brown College's Competitive set for the UCAS includes: Centennial College, Humber College, Seneca College, and Sheridan College.

⁷⁷ Institutional Research, 2009 GBC Fact Book-Highlights Report, George Brown College

Program Title	Humber	Number of Applications			
		Seneca	GBC	Sheridan	Centennial
BUSINESS ADMINISTRATION or BUSINESS/ BUSINESS ADMINISTRATION GENERAL	6			9	
BUSINESS MANAGEMENT or BUSINESS ADMINISTRATION - MANAGEMENT	7	9			
FILM AND TELEVISION PRODUCTION	8		**		
PARAMEDIC	9		**		6
CHILD AND YOUTH WORKER	10		2	6	7
ACCOUNTING AND FINANCE		6			
VETERINARY TECHNICIAN		7	**		
GENERAL ARTS AND SCIENCE		8			
ACCOUNTING		10			
DENTAL HYGIENE			6		
CULINARY SKILLS - CHEF TRAINING			7		
CULINARY MANAGEMENT			8		
DENTAL ASSISTING (LEVELS I AND II)			9		
PRE-HEALTH SCIENCE			10		
ART FUNDAMENTALS				4	
BACHELOR OF APPLIED ARTS (ANIMATION)			**	7	
MEDIA ARTS			**	8	
APPLIED PHOTOGRAPHY			**	10	
PHARMACY TECHNICIAN			**		8
AVIATION TECHNICIAN - AIRCRAFT MAINTENANCE			**		9
BRIDGING TO UNIVERSITY NURSING					10

Source: OCAS Top Programs by Enrolment Stage (RPT0011P)

** Programs in the top 10 applicant demand for GTA colleges and not currently offered at GBC

- GBC leads FTE enrolment growth in the GTA and the Province. Between 2005-06 and 2007-08, GBC's full-time equivalent enrolment (FTE) grew at an annual compound rate of 4.02%, outperforming other GTA colleges and the Province⁷⁸.

⁷⁸ Institutional Research, 2009 GBC Fact Book-Highlights Report, George Brown College

	2005-06	2006-07	2007-08	Annual Compound Growth
Centennial	9,957	9,436	9,410	-2.79
Durham	6,948	7,007	7,313	2.59
George Brown	15,679	16,213	16,964	4.02
Humber	16,195	16,412	16,671	1.46
Seneca	19,191	19,225	19,139	-0.14
Sheridan	13,932	14,053	14,409	1.70
Ontario	183,023	182,238	185,931	0.79

Source: Colleges Ontario, 2009 Environmental Scan

- The Registrar's office estimated that in the 2009 reporting year, about 73.1% of students graduated within double the length of their program of study. This rate is higher than the Ontario average of 64.6%.

3. GBC Student Profile and Outcomes

GBC STUDENT PROFILE

Overall, a GBC student is more likely to be female, in her early 20s whose pathway into GBC is not directly from high school. The average full time student has a GPA equivalent to a B-. As expected, differences in student demographics are more evident when data are broken down by division (Table 6).

Table 6: Student Characteristics by Division⁷⁹

	Preparatory & Liberal Studies	Business Arts & Design	Community Services & Health Sciences	Hospitality & Culinary Arts	Construction & Engineering Technologies	GBC
Average Age (at program entry)	22.7	22.0	25.1	21.9	22.6	23.1
Female	49%	57%	82%	57%	8%	58%
Direct from High School (19 or younger with OSSD)	37%	37%	28%	42%	44%	36%
Non-direct from High School (20 or older with OSSD)	30%	46%	39%	39%	38%	41%
Mature/other (19 and older without OSSD/ other)	21%	14%	21%	14%	12%	16%
Born outside of Canada	43%	42%	43%	40%	42%	43%
International student	3%	14%	3%	12%	8%	9%

Note: Percentages are shown as proportion of enrolment/responses within own Division

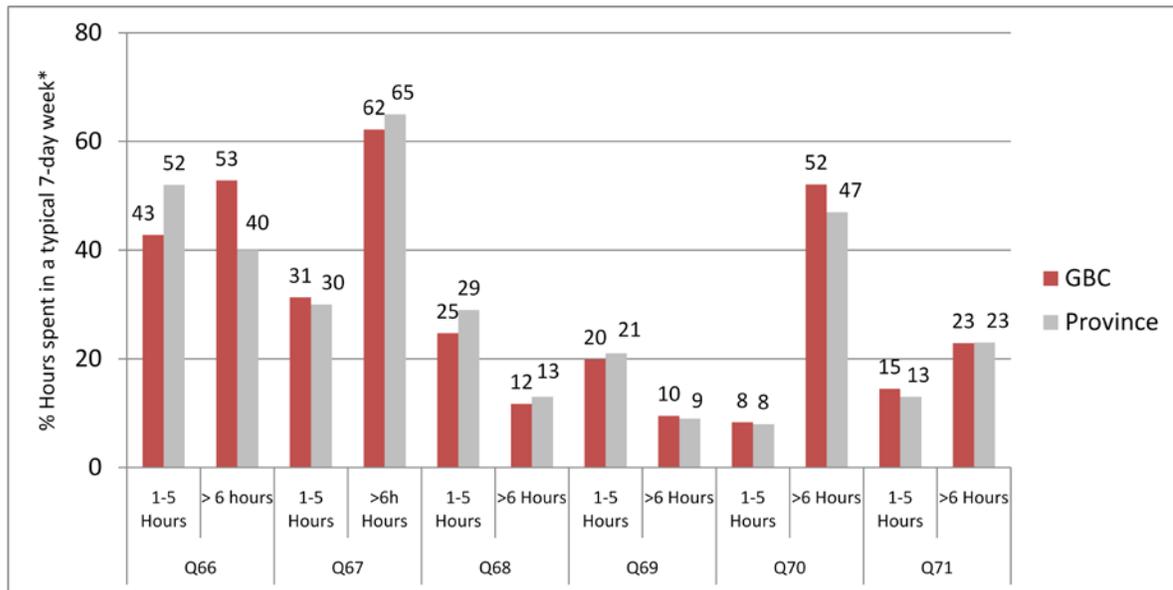
Source: Institutional Research, 2009 Fact Book Highlights Report

- In comparison to the average college student in the province, a higher proportion of GBC students spend more time travelling to and from the college and working for pay.⁸⁰

⁷⁹ Institutional Research, 2009 GBC Fact Book-Highlights Report, George Brown College

⁸⁰ 2010 Student Satisfaction KPI

Figure 4: Time Spent Outside the Classroom



Q66 – Travelling to and from the college

Q67 – Coursework outside of class

Q68 – Participating in college activities other than attending classes or labs

Q69 – Participating in volunteer activities

Q70 -- Working for pay

Q71 – Providing care for dependents (e.g., children, spouse/partner, relatives, etc.)

*at least 1 hour

GBC HAS GRADUATED OVER 24,000 STUDENTS SINCE 2003-04⁸¹

- Approximately 89% of GBC graduates (2007-08) were hired within 6 months of graduation. Of this, a higher proportion are Canadian born graduates (92% vs. 86% for foreign-born).
- In 2008-09, about 22% of all GBC graduates returned to a college or university six months after graduation. Of this, 51% returned to GBC.
- If GBC graduates were to make *one* change to their educational experience:
 - 23% would recommend maintaining the status quo
 - 19% would recommend other changes 13% would recommend improvements to the program content
 - 13% would expand the opportunities to meet potential employers
 - 10% would improve the quality of the program teaching
 - 10% would improve the quality of existing coop/internship placements
 - 7% would introduce a field/coop placement into the program

⁸¹ Institutional Research, 2009 GBC Fact Book-Highlights Report, George Brown College

- 4% would increase awareness of GBC and graduate quality among potential employers

Graduate Employer Feedback⁸²

In 2009-10, a total of 178 employers of GBC graduates responded to the question ***Are there other skills that you feel will be in demand in the future and should be included in the educational preparation of college graduates?*** (Q77 and Q78 Employer KPI). Below is an analysis of those responses.

Some common themes were uncovered in terms of “in demand skills” when verbatim answers from employers of GBC graduates were analyzed across all departments. Most employers expressed that soft skills are in demand now and will continue to be in the future.

- The importance of strong communication skills was mentioned by an overwhelming number of employers across all sectors in the marketplace. Both oral and written communication skills are highly valued in any setting as well as the ability to communicate appropriately with different audiences ie. Peers, subordinates, senior level staff and external clients.
- Employers also emphasized the importance of having strong English communication skills and ESL support while completing their education, at the same time, multilingualism is also highly valued especially knowledge of languages other than French such as Mandarin, etc.
- Professionalism is another soft skill that is greatly valued by employers as well as having a strong work ethic and well tuned time management skills. Also, diversity and ethics training were mentioned as valuable skills that can be gained in the college setting before entering the workforce. Developing problem solving, critical thinking, teamwork and leadership skills while in school were also seen as a benefit for employers.
- It was also mentioned that students should receive more support with resume writing and interviewing skills while completing their studies.

Employers mentioned the value of every student gaining basic computer skills before completing their studies no matter what the field of study may be. Some other global themes included emphasizing more practical learning rather than theory-based learning; one employer mentioned incorporating more case studies. Also, keeping up with industry trends and ensuring

⁸² Institutional Research (2010) KPI Employer Satisfaction Survey 2009/10-Feedback about Fall 2008, Summer 2008 and Winter 2009 GBC graduates

that content is fresh and current was seen as important in order for students to have the skills employers are looking for upon graduation and to have a competitive edge in the marketplace. Due to the low number of responses within each department, drawing themes at the departmental level proved to be inconclusive. However, a table containing all verbatim answers to this question divided by department was added in an appendix for your reference. Refer to Appendix A.

4. GBC Workforce

BY 2020, 326 GBC EMPLOYEES WILL BE ELIGIBLE TO RETIRE. OF THIS, 60% ARE FACULTY⁸³

At George Brown, 32% of Administration, 42% of Faculty, and 16% of Support will be in a position to retire in 2020 (full time employees who will be 65+). Overall, that makes for 29% of the College (or nearly one in three full time employees). Full-time faculty comprises 38% of the current faculty complement at the College, compared to 62% of non-full time (GBC Human Resources, as of Jan 1, 2010). Non-full time faculty is younger with only about 23% in a position to retire by 2020. Community Services and Health Sciences are highly dependent on non-full time faculty as shown in the following table:

Table 6: Number of Non-Full Time Contracts issued from Sept. 1st, 2009 to Dec. 31st, 2009

Division	Non-Full Time Contracts	
	#	%
Non Academic:		
Academic Excellence	1	0.1
Educational Resources	11	1.1
Student Affairs	3	0.3
Academic:		
Business, Arts, and Design	148	14.9
Construction and Engineering Technologies	135	13.6
International and Immigrant Education	82	8.3
Centre for Continuous Learning	2	0.2
Community Services and Health Sciences	358	36.1
Hospitality and Culinary Arts	122	12.3
Preparatory and Liberal Studies	118	11.9
Unspecified	12	1.2
Grand Total	992	100.0

Source: Institutional Research, Special tabulations using Non Full Time Faculty list.

⁸³ Institutional Research, 2009 GBC Fact Book-Highlights Report, George Brown College