

Holistic review in grad admissions – productivity and economic development through equity and inclusion

Andrew Kim, Director, Grad Enrolment Services, SGS

Angela Clarke, Director, Student Affairs, MI

Elizabeth Simms, Project Manager, ITS

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Agenda

- Background
- Objectives
- Methodology/approach
- Designing technology
- Discussion

Human capital development

- Human capital – knowledge, expertise, and skill one accumulates through education and training (Marimuthu et al., 2009)
- Human capital has social and economic importance; most valuable of all types of capital is the investment in human being (Becker, 1993)
- Investment in education and training results in increased learning, which in turn results in increased productivity and higher earnings and wages (Marimuthu et al., 2009)

International HE capacity-building initiatives

- China (CSC scholarships)
- Vietnam (VIED Project 911 fellowships)
- Brazil (Science without Borders)
- Libya (LNSAP)
- Indonesia (LPDP scholarship)
- Thailand (Royal Thai Government scholarship)
- Chile (Equal Opportunities Scholarship Program)
- Kazakhstan (Bolashak International Scholarship Program)
- the Philippines (COHE scholarships)
- Mexico (CONACYT)
- Ecuador (SENESCYT)
- Colombia (ICETEX)
- Saudi Arabia (KASP Scholarship Program)

Futurist view of labour market

- 42% of Canadian labour force at high risk of being automated (Lamb, 2016)
- Occupations at low risk of being automated cut across diverse fields, demand more university education, require complex problem solving/people management skills, and offer much higher income levels (Lamb, 2016)
- Impact of technology on workforce – can substitute labour in routine tasks, but increase productivity in non-routine, cognitive tasks (Autor et al., 2003)
- Improvements in productivity lowers costs and prices, increases demand, and increases the need for additional labour and individual earnings – a virtuous cycle that leads to job creation (Lamb, 2016)
- Highly skilled – cognitive and collaborative skills – occupations will command high wages and grow much quickly than the rest of the labour force; will be significant driver for Canada's future growth (Lamb, 2016)

Canadians need to 'future-proof' their careers as more jobs become automated: report



The changing workforce could open more opportunities for meaningful, high-value human work

Anna Dimoff - CBC News - Posted: Feb 28, 2018 11:16 AM PT | Last Updated: February 28, 2018



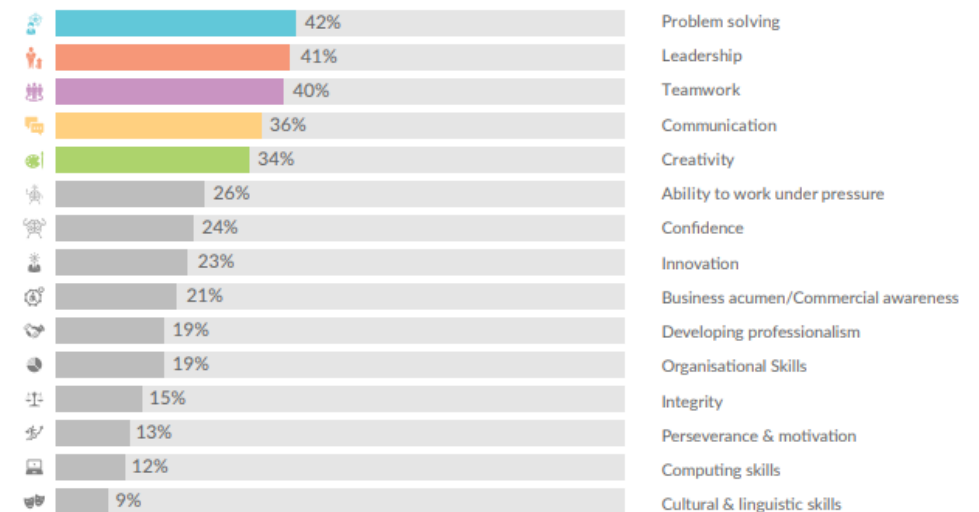
A car on a production line in Germany. Many jobs are expected to be replaced by some form of automation in the next decade, from general labour to professional services. Finding the human element in any field is essential to future-proofing careers according to a new report by Deloitte. (Tobias Schwarz/Reuters)

Source: <https://www.cbc.ca/news/canada/british-columbia/automation-workforce-canada-1.4553121>

International choice factors (QS, 2018)

- Students want to develop specific employment skills – problem solving, leadership, teamwork, communication, creativity
- Collaborative vs. technical
- Minor variations by degree and region
- Skills preference informed by discipline preference (business and engineering), but growing appreciation of collaborative competence

Most desired graduate skills by all students



Implications for the province

- “...many provinces have articulated and supported growth in graduate enrolment as an important contributor to the creation of a highly skilled workforce” (HECQO, 2015)
- Graduate students vital to long-term prosperity – capacity for abstract thinking, critical reasoning, innovation, and entrepreneurship (CAGS, 2015)
- Graduate degrees have clear employability benefits (employability, income, and relation to field of study) (StatsCan, 2015), and NL has greatest income advantage for university graduates (Conference Board, 2014; HEQCO, 2015)
- NL among lowest in Canada in terms of population with an advanced degree (only NB lower) (HEQCO, 2015) – more people need graduate degrees
- Admissions is key to increasing enrolment – strong positive relationship between funnel metrics and total enrolment ($r > 0.9$)

Graduate education at MUN

- 300% increase in graduate applications and 500% increase in international graduate applications
- MUN growth in graduate enrolment almost 5x average growth among Maritime universities (AAU, 2017)
- NL leading the nation in growth in graduate degrees awarded – 40% increase vs. 21% national average (CAGS, 2018)
- MUN ranked #1 in Canada in international student experience in support from graduate school (ISB, 2015)

Implications for MUN

- Implicit assumption in human capital development theory that there is equal access to training and education
- “...[Newfoundland and Labrador’s] overall university system performance is slightly above the Canadian average...[but]...below average on access” (HEQCO, 2015)
- Access is complex and dynamic – universities have agency and responsibility to improve access in multiple ways

Tuition cuts won't increase university access



Reducing tuition fees will do very little to close the gap between university participation rates in people from the higher and lower ends of the income distribution.

CHRIS BOLIN/CHRIS BOLIN THE GLOBE AND MAIL

STEPHEN GORDON
SPECIAL TO THE GLOBE AND MAIL
PUBLISHED FEBRUARY 1, 2012
UPDATED MAY 3, 2018

0 COMMENTS

Source: <https://www.theglobeandmail.com/report-on-business/economy/economy-lab/tuition-cuts-wont-increase-university-access/article542521/>

Implications for MUN

- MUN's admit rate of international grad applicants (18%) much lower than US average (30%) (CGS, 2018)
- MUN's admit rate of master's applicants (25%) much lower than US average (50%) (Okanhana & Zhou, 2018)
- Selectivity a measure of desirability and perceived reputation and quality
- Access and societal obligation are core to MUN's mission – remiss to not understand whether selectivity is inclusive

Holistic review

- Holistic or “whole-file” review is understood to be a process by which programs consider a broad range of characteristics when reviewing applications for admissions (CGS, 2016)
- Growing interest in how admissions considers traditional and non-traditional factors to predict success in academic programs – common in admissions for undergraduate programs and health professions schools
- Big Five personality traits (Kyllonen et al., 2005) have been linked to mental and physical health, work performance, and academic achievement – neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness
- Multiple non-cognitive factors have been considered, including motivation (Gray et al., 2016), leadership (Choi et al., 2018), self-concept/self-efficacy (Denissen et al., 2007), attitude toward learning (Virtue et al., 2017), creativity (Sternberg, 2008), persistence/perseverance (Egalite et al., 2016), self-regulation/self-control (Duckworth, 2010)

Holistic review

Canada · CBC Investigates

Why so many Canadian universities know so little about their own racial diversity



Experts say race-based data key to supporting students, addressing inequality

Jeremy McDonald, Lori Ward · CBC News · Posted: Mar 21, 2017 5:00 AM ET | Last Updated: March 21, 2017



Over the past five months, CBC News asked 76 universities from across the country to provide a breakdown of their student populations by race. Most schools couldn't provide much information. (CBC)

Source: <https://www.cbc.ca/news/canada/race-canadian-universities-1.4030537>

"If you want to really serve the population, I think you first need to know who's in your student body...And not just at an eyeballing it sort of way, actually understanding in a much more discrete way."

- Renu Mandhane
Chief Commissioner of the Ontario
Human Rights Commission

Holistic review

- In 2015, Julie Posselt's book on merit and diversity in graduate admissions raises important questions on role of privilege and equity in admissions decisions
- Council of Graduate Schools (CGS) undertook study on holistic review in graduate admissions in 2016 – called for more tools and processes to support holistic review in graduate programs
- CGS report (2016) determined holistic review is a useful strategy for improving diversity of higher ed, but limited staff and faculty time is considered the greatest barrier to performing more holistic admissions processes
- MUN implemented solution for paperless graduate admissions in 2017 – two phases: 1) faster decisions, and 2) better decisions
- In 2018, SGS/ITS/MI received funding through CARE to design and implement a pervasive system of holistic review that more fully captures and analyzes new graduate applicant metadata, include broad academic metrics, non-cognitive aspects, and identity/lived experience – to assess and support talent in a complete and inclusive way

Objectives

- To help MUN understand the many different aspects of graduate applicants that might predict future success
- To design and implement an enterprise-wide solution for holistic graduate admissions
- To help MUN better assess and select talent for graduate programs, to ultimately contribute in meaningful ways to societal and economic development
- To advance in a broad way the understanding of and practice in holistic review for US and Canadian universities

Approach

- Holistic review workshops
 - MI, SJC, and Grenfell Campus
- Site visits
 - Virginia Tech
 - University of Maryland
- Literature review

Holistic review workshops

- St. John's Campus and MI – September 27th and October 9th, 2018
- Grenfell Campus – November 23rd, 2018
- Invitees included pan-institutional representation

Breakout sessions – groups of 3

- Do you carry out holistic review for your programs? What does the practice of holistic review look like in your academic units? Has it resulted in better outcomes for your graduate students?
- What are the most important (up to three) aspects, attributes, behaviours, conditions, etc. that contributes to academic achievement among graduate students?
- What instruments do you use to assess or draw out these aspects, attributes, etc.?
- What are practical challenges that make holistic review difficult?

Holistic review workshops

- Main Themes

- Consistently strong support of the initiative.
- Examples of individuals attempting to facilitate some of the work.
- Significant concerns around the time associated with doing the work well.
- System/ process would have to “fit” different program types and disciplines.

Site visits

- Virginia Tech – December 3rd, 2018
- University of Maryland – December 5th, 2018
- Polished presentation from a marketing perspective. Noteworthy examples of communications strategy.
- Process not facilitated using an advanced technology solution.

Literature review

- Confirmed the findings of the internal and external consultations indicating that there are currently no standardized process for holistic review.
- Research has demonstrated the value in the process:
 - successfully increased diversity among students accepted into post-secondary programs, in areas such as gender, race, SES, minority status, and more (e.g., Ballejos, Rhyne, & Parkes, 2015; Gilbert, 2008; Gilbert & Johnson, 2013; Grabowski, 2018; Young & Johnson, 2004).
 - addition of non-cognitive factors to traditional academic factors when assessing post-secondary applications adds predictive validity to the determination of future academic success (e.g., Schmitt et al., 2007; Sternberg, 2006)

Literature review

- A large body of research has looked at the predictive validity of various non-cognitive factors (e.g., personality, motivation, life experiences, etc.) in determining academic success. As several of these constructs have been shown to reliably predict academic performance, non-cognitive factors serve as a promising option for use in holistic admissions programs.
- Non-cognitive factors: personality (in particular, conscientiousness), openness, achievement motivation, self-efficacy, and grit.

Personality

Five Factor Model of Personality

- *neuroticism*, which refers to levels of emotional stability vs. instability;
- *extraversion*, which refers to levels of activity, ambition, and sociability, and the intensity and amount of interpersonal interaction experienced;
- ***openness to experience*, which involves imagination, creativity, curiosity, broad-mindedness, originality, and artistic sensibility;**
- *agreeableness*, which involves liking and friendliness and refers to being flexible, trusting, cooperative, tolerant, fair, and respectful; and
- ***conscientiousness*, which refers to one's degree of dependability, persistence, will to achieve, and organization**

(Poropat, 2009; Trapmann, Hell, Hirn, & Schuler, 2007).

Achievement motivation/goals

- *Achievement motivation* refers to the tendency to strive for and achieve success, the enjoyment of overcoming challenges and finishing assigned tasks, and the avoidance of failure and its associated negative effects (Busato et al., 2000; Robbins et al., 2004).
- *Achievement goals* – also referred to as *goal orientation* – which suggests that there are different types of goals that comprise one's orientation toward achievement motivation (Dweck, 1986; Young, 2007).

Self-efficacy

- *self-efficacy* refers to one's beliefs and judgements regarding one's capability to perform a particular task and to succeed at that task (Bandura, 1997).
- *academic self-efficacy*, which relates to perceptions of academic capability, and *performance self-efficacy*, referring to perceptions of academic performance capability (Richardson et al., 2012).
- There are several concepts that are thought to be related to self-efficacy, including *effort regulation* (Richardson et al., 2012), *self-discipline* (Jung, Zhou, and Lee, 2017) and *self-concept* (Reyes, 1984).

Grit

- According to Duckworth, Peterson, Matthews, and Kelly (2007), the concept of grit refers to “perseverance and passion for long-term goals” (p. 1087).
- Those high in grit have a tendency to work hard and persist in the face of challenges and setbacks, and are capable of sticking with their interests for a long period despite any adversity (Duckworth et al., 2007; Duckworth and Quinn 2009).
- Researchers have sub-divided grit into two facets: perseverance, which refers to the tendency to work hard in the face of challenges or setbacks, and consistency of interest, which refers to a tendency to stick with the same goals for a long period of time (Crede, Tynan, & Harms, 2017).

Factors to holistic data

- Blending the Personal and Academic
- Non-Cognitive Factors
 - Self-Efficacy
 - Grit
 - Achievement Motivation
 - Conscientiousness
- Academic Profile
- Lived Experience

Proposed changes to graduate application

Personal Information

Lived Experience	Sexual Orientation
	Transgender
	Aboriginal Person
	Highest education obtained by mother
	Highest education obtained by father
	Number of dependents
	Household income
	Canadian Armed Forces service
	Describe yourself (Race/Ethnicity)

Academic Information

Self Reporting Academic Profile	Cumulative undergraduate GPA
	Undergraduate average in major area of study
	Advanced GPA (last 20 course taken)
	Cumulative graduate GPA
Lived Experience	Graduation Track/Special Circumstances (Optional)

Proposed changes to graduate application

Resume

Academic	Academic summary
Lived experience	Non-academic summary

Additional Information

Academic	Statement of purpose
Lived experience	Personal statement
Self-efficacy/Grit	Short essay questions (optional)
Achievement Motivation/ Conscientiousness/Grit	Quick takes (optional)

✓ Develop a rubric "a scoring guide" for non-cognitive skills

Proposed changes to referee forms

Reference

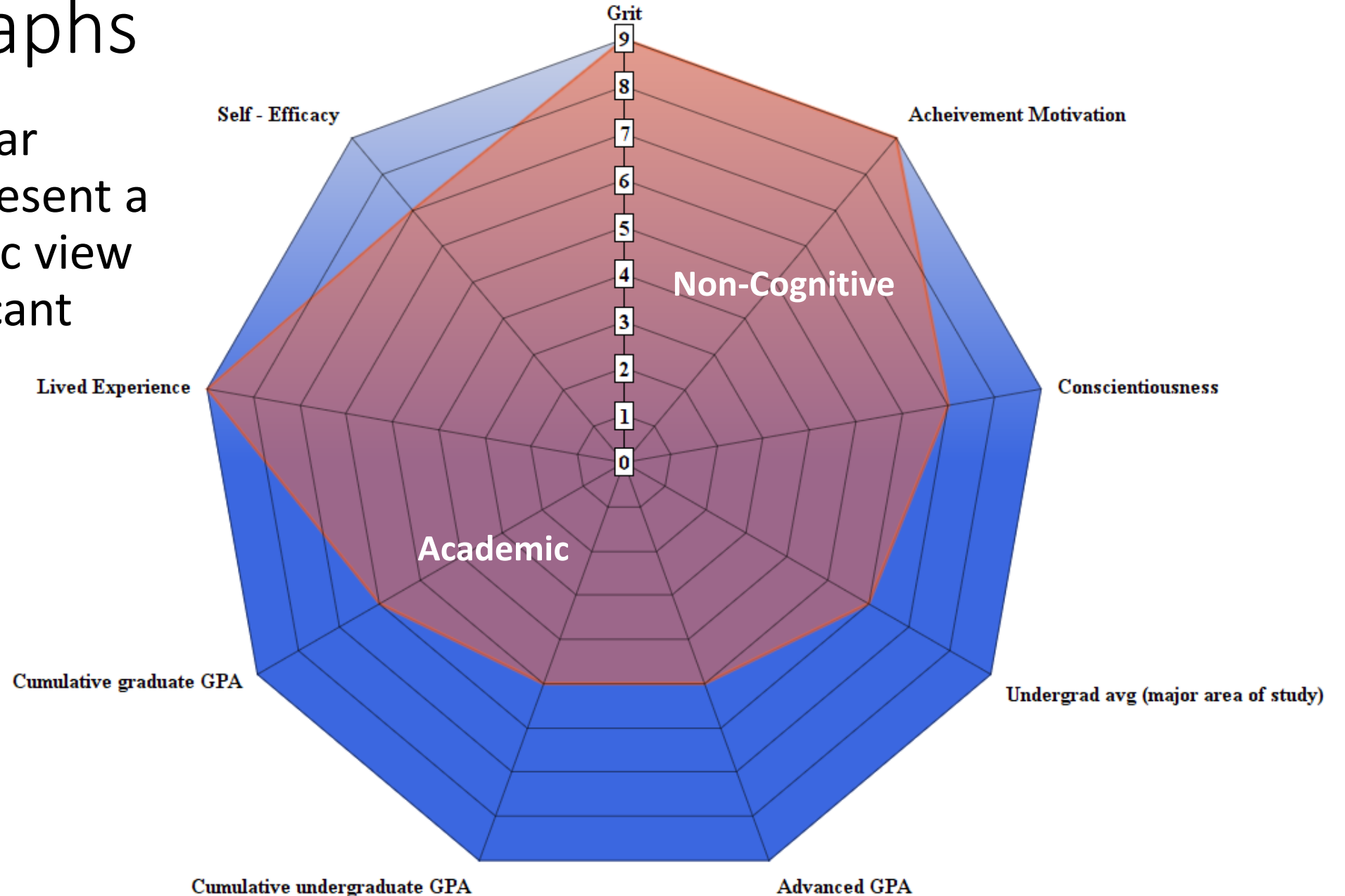
Academic	Ability to think critically (e.g., synthesizing and evaluating information)
	Ability to think analytically (e.g., solving problems quickly and effectively)
	Ability to plan and conduct research
	Academic integrity and ethical values
	Ability to work and get along with others
Grit	Perseverance/persistence during challenging times
Conscientiousness	Capacity to take initiative and work independently
	Dependability to complete tasks in a timely manner
Self-efficacy	Confidence in their own strengths and abilities
Achievement motivation	Curiosity and interest in learning

Technology approach

- Holistic data capture – Updates to student information system online application to capture new data
- Retrieval and organization of holistic data – Expand OnBase document management/workflow admissions solution to allow for retrieval and organization of new data for application review and approval
- Presentation of holistic data – Develop radar graphs to present a visual holistic view of the applicant

Radar graphs

- Develop radar graphs to present a visual holistic view of the applicant



Develop training and support

- Training for faculty and staff
 - Develop training to support holistic admissions process and technology
 - Diversity training
 - Implicit bias training
- Communication and awareness
 - Applicants need to understand why we are collecting data and how it will be used to make decisions
 - Potential secondary use of data (student success)
 - Information sessions and website

Continue consultation

- Internal stakeholders
 - Consultation with faculty and staff to validate holistic business process
 - Information Access and Privacy (IAP) Office for privacy compliance
- External stakeholders
 - Share information/approach with US and Canadian universities

Thank you! Questions/feedback?

Contacts:

- Andrew Kim (akim@mun.ca)
- Angie Clarke (angie.clarke@mi.mun.ca)
- Elizabeth Simms (elizabeth.simms@mun.ca)