MULTIPLE JEOPARDY: A RESEARCH REPORT ON INDIGENOUS FIRST-YEAR STUDENTS

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Abstract

This study investigated the demographic and academic factors associated with academic progression of Indigenous first-year students at the University of Manitoba. Student demographics and measured academic factors were highly associated with degree progression. First-year students who did not return were more likely to be male, at least 21 years of age, had not completed high school, and members of First Nations. These results have implications for policy and student supports, and universities must work closely with Indigenous stakeholders to prepare and support Indigenous leaners, remove policy barriers, and address the need for changes to university culture and curriculum.

Key words: Indigenous, First Nations, Metis, first-year, university, student transition, retention

Résumé

L'article présente une étude ayant investigué les facteurs démographiques et académiques associés au progrès des étudiant·e·s autochtones de première année à l'Université du Manitoba. La population étudiante et les facteurs académiques pris en considération étaient fortement associés au degré de progression. Les étudiant.e.s de première année qui n'ont pas continué en deuxième années étaient majoritairement des hommes d'au moins 21 ans qui n'avaient pas complété leur éducation secondaire et qui étaient membres des Premières Nations. Ces résultats sont à prendre en considération pour la mise en place de soutien aux politiques institutionnelles et aux étudiants. Les universités doivent travailler en étroite collaboration avec les parties prenantes autochtones pour élaborer et soutenir les

leaders autochtones, faire disparaître les barrières politiques, et aborder la nécessité de changement au sein de la culture et du curriculum universitaire.

Mots-clés : Autochtones, Premières Nations, Métis, première année, université, transition étudiante, rétention

In Multiple Jeopardy: Indigenous First-Year Students

Despite some sustained gains, the post-secondary attainment rates for Canadian Indigenous peoples remain significantly lower than those of the general population (Statistics Canada, 2020a and 2020b; Macintosh, 2021). It is well established that Canadian Indigenous students often face barriers to post-secondary study (e.g., racism, lack of educational opportunity, geography, financial constraints, dislocation from home communities, colonization and the legacy of residential schools that includes social and family breakdown and mistrust of colonial education systems).

The challenges and barriers faced by Indigenous university students may also be viewed as situations of multiple jeopardy (i.e., situations in which they face the danger of loss, harm, or failure). Multiple jeopardy theory was first discussed by Debra King (1988) and refers to the interdependence of multiple factors and systems of inequality such as racism, sexism and classism that have a multiplicative effect on the discrimination and oppression that person experiences. While the theory was developed as a way to view the oppression of Black women it also can be used to view the experiences of Indigenous peoples.

While there are a number of qualitative studies and policy documents on Indigenous student experiences in Canadian post-secondary education (e.g., Association of Universities and Colleges of Canada, 2013; Higher Education Quality Council of Ontario, 2010; Gaskell & Rubenson, 2004), there have been few quantitative studies in Canada or the United States that have investigated the academic progression of Indigenous first-year students, and fewer still which analyze an entire institutional population of Indigenous university students. The existing quantitative literature has little to say about the first-year academic outcomes of Indigenous students nor about the ways in which demographics relate to academic outcomes of the first-year Indigenous students. Such gaps have been noted in a number of reports such as those published by Human Resources and Skills Development Canada (2013), and the Council of Ministers of Education of Canada (2012).

In this study, we examined academic and demographic institutional data of the population of self-declared Canadian Indigenous undergraduate students at our institution in order to explore the following

question was: Which demographic and academic factors are associated with academic progression of Indigenous first-year students?

Our research team came together to examine this question because we have decades of experience developing and working in programs geared toward Indigenous student success at our institution. We wanted to inform our practice as well as programs and policy through an exploration of the quantitative data. Data were also needed to add power to our observations and impressionistic evidence about the academic choices and outcomes of Indigenous learners. If we are to press for policy changes, we need to present both of these powerful lenses.

We recognize that although Indigenous students may share similar barriers associated with the impacts of colonialism, systemic racism, and failed policies, we also need to reflect on ways in which support, though well intentioned, may in fact reinforce stereotypes or "deficit" model assumptions. We therefore recognize the critical need to present our results in ways that will help students to reach their goals, and not inflict any more damage to the community (Pyett, Waples-Crowe & Van der Sterren, 2008).

Related Literature

The barriers experienced by Canadan Indigenous students when they try to access and transition into university are often the result of racial, cultural, and economic inequalities. Many colleges and universities still retain a Eurocentric structure, culture, and curriculum. As such, they are potentially foreign to racially and culturally marginalized learners. Thus, the retention of Indigenous students may be less a function of an individual's inability to assimilate and more a function of an institution's inability to accommodate the needs of racially, culturally, and economically marginalized students (Ives & Castillo-Montoya, 2020).

Canadian universities remain colonial in their bureaucracies, curricula, and staffing, and as a result, Indigenous students rarely see themselves, their history or culture reflected in the student body or in the classroom. Stephanie Waterman (2020) and Kirkness and Barnhardt (2001), write that university policies and culture are rooted in settler-colonial systems, and when students come to the university, they are expected to adapt and socialize to that environment. When the student does not stay at the institution or does not do well, the student is held responsible.

The literature on decolonization and Indigenous learners emphasizes that while post-secondary education is a key component in building communities and contributing to the well-being of Indigenous

peoples (Stonechild, 2006), post-secondary education means that Indigenous students are subjected to further colonization as they must adapt to the mainstream values and behaviours of institutions (Gallop & Bastien, 2016). After Indigenous students arrive on campus, they often face racism, marginalization, colonizer curriculum, social isolation, financial constraints, and difficulty navigating unfamiliar university bureaucracies. Christopher Dunbar (2008) describes the experience of Indigenous students as exemplifying continued colonization: Universities control the structure, content, and process of education that consciously or unconsciously reinforce the marginalization of Indigenous knowledge systems (p. 91).

Remote, northern, and/or isolated Indigenous communities often lack adequate educational opportunities and resources (Howe, 2004; Anderson & Richards, 2016; Government of Canada, Office of the Parliamentary Budget Officer, 2016). For example, the chronic underfunding of First Nation-operated schools results in inequitable educational opportunities, especially for remote and isolated communities. Due to funding policies, they have difficulty attracting and keeping high quality teachers (Dart, 2018; Hampshire, 2016; Anderson & Richards, 2016).

The resulting academic barriers include students unable to develop a solid foundation in core subjects (Anderson & Richards, 2016). Barriers can be further compounded by the fact that only one-third of First Nations offer within-community high school programs (Manitoba Education, 2020), with the result that many First Nations students must complete high school outside their home communities, often relocating to larger urban centers. These students struggle with dislocation from family, friends, and community supports, and when these challenges are coupled with the legacy of colonialism, issues of identity, and systemic racism, barriers to university success can be insurmountable (Romanow, 2020). Additionally, Oxendine (2015) states that when students are unable to maintain their cultural connections to their home communities, their chances of academic successes are further impeded. Shotton (2020) points out that Indigenous students who grow up in their home communities have different experiences than urban students because they are closer to their culture and traditions and are situated where Indigenous people are the majority. When Indigenous students arrive on campus from their home communities, they may not have experienced the racism of an urban setting.

Adult university learners and those without high school preparation have been shown to have lower persistence and graduation rates than "traditional" students (Fredman, 2018), and post-secondary participation and graduation rates for males been falling across Canada and the United States (Statistics Canada, 2020c; National Center for Education Statistics, 2020). As previously mentioned, the percentage of Indigenous persons having attended post-secondary is significantly

lower than the rate for all other Canadians, and the percentage of First Nations persons with some postsecondary education is lower than for all other Aboriginal identity groups (Melvin, 2023; Council of Ministers of Education, 2002).

The Study

Access to institutional data is, quite reasonably, restricted, and institutions rarely publish progression data relating to Indigenous students. Therefore, the Research Ethics Board approval process was lengthy. When approval was received, an anonymized dataset of all demographic information collected by the institution for the population of self-declared Canadian Indigenous students enrolled in their initial undergraduate program 2006 to 2017 was provided to the research team. The cleaned dataset comprised 6,318 cases. In order to examine the demographics and academic outcomes of first-year Canadian Indigenous students for whom their first-year post-secondary experience was at University of Manitoba, the initial dataset was parsed to remove students who had previous post-secondary education and students who entered in a term other than Fall.

In analyzing data and interpreting results, we sought advice and feedback from Indigenous leaders, staff, and students at our institution. We met regularly with a 16-person advisory panel comprised of Indigenous directors, advisors and administrators, Indigenous student representatives, and deans and academic staff from several faculties, held three open forums for Indigenous staff and students, and had numerous sessions and workshops with staff and students involved in initiatives relating to Indigenous student success. We also discussed our project and findings with external colleagues and stakeholders (e.g., Shawane Dagosiwin Aboriginal Research Forums, Manitoba First Nations Education Resource Centre, and Brandon University). Consultations were conducted publicly and informally and were not qualitative data collection exercises.

The cleaned, coded dataset was analyzed using the following variables from the institutional database:

a) demographic: age, sex (the institution used only binary categories), year of initial registration, faculty, and admission status of "Regular" or "Mature" ("Regular" students are high school graduates having completed the required high school courses/grades; "Mature" students do not have a high school diploma or high school courses/grades required for admission and are 21 years of age or over).

b) academic outcomes: faculty, courses and credit hours enrolled, grade in each course enrolled (A-F), or withdrawal without academic penalty: Voluntary Withdrawal (VW), sessional GPA (sGPA), cumulative GPA (cGPA), and graduation date.

Contingency tables were created to determine which variables best explained the academic progression of Term 1 students. The dataset was tested for reliability using Cronbach's alpha coefficient. The sessional GPA dataset was tested for reliability using Cronbach's alpha coefficient (Cronbach,1951). The calculated alpha value indicates reliability in the sGPA data (alpha = 0.73, which is over the value considered adequate e.g., Taber, 2018).

Limitations of the Study

Institutional data posed natural limits to our ability to identify factors related to student progression (e.g., student records have limited demographic and financial information). Another issue was that self-declaration of Indigenous ancestry is voluntary, so the dataset did not include Indigenous students who chose not to self-declare as Indigenous. Additionally, as there is no cross-institutional tracking of students, and as the dataset was anonymized, there was no capacity to track students' educational journeys outside of the institution. Institutional data relating to academic progression of students by age, admission status or sex are not published, so direct comparisons were not possible. While the data provided valuable information on some factors associated with academic progression, these did not capture the socioeconomic or personal circumstances or experiences of learners. The study did not include consultations as a qualitative component, as this research was exploratory, and a qualitative follow-up was anticipated. Our objective was to investigate the "what" of students' progression because so few studies had done so, with anticipation that a follow-up study would inform the question of "why" certain outcomes and factors were affected.

Findings

Demographics and Academic Progression

The demographic profile for first-year Indigenous students across all cohorts established that a majority of students were female, Regular students, full-time, under 21 years of age, and equally likely to declare as either First Nations or Metis. (The number and proportion of Inuit students was too low for adequate analysis).

Almost 70% of first-year Indigenous students returned for Year 2 (i.e., 31% attrition). In comparison, for the same cohorts in the general first-year full-time student population, 77-80% returned for Year 2.

Table 1. Indigenous Student Demographics and Academic Progression to Year 2 and Graduation

	Regular ≤20 years		Regular >21 years		Mature	
Students	% Progressed to Year 2	% Graduated*	% Progressed to Year 2	% Graduated*	% Progressed to Year 2	% Graduated*
All Indigenous	73	37	69	36	59	21
Female Indigenous	74	38	69	37	61	26
Male Indigenous	72	34	68	34	57	11
Female, First Nations	68	23	70	33	60	26
Female, Metis	78	47	69	42	65	29
Male, First Nations	64	20	63	28	53	8
Male, Metis	77	41	73	39	67	20

*Within seven years

As Table 1 shows, students who did not return for Year 2 were more likely to be admitted without high school completion (Mature), male, and First Nations, and this pattern was exacerbated in the percentages of those students who graduated within seven years. Table 2 illustrates this pattern in terms of the ratios of entering versus Year 2 students: the ratio of Regular to Mature students changed from 3:1 in Year 1 to 4:1 in Year 2 (i.e., there were three Regular students for every Mature student in Year 1, but four Regular students to each Mature student in Year 2). Similarly, the 1:1 ratio for First Nations and Metis entering students shifted in Year 2 to 1:1.25 (i.e., for each First Nations student in Year 2, there were 1.25 Metis students who had continued. It should be noted that given the small relative proportion of entering students who are male, Mature admission, or over 21 years, and the fact that students in these groups are more likely not to return after Year 1, small differences in percentages of those at academic risk eventually translate into declining actual numbers in those groups. The results of these analyses align with the results of those conducted regarding academic risk such as cGPA and graduation.

Table 2. Demographics and Graduation: Ratios of Cohorts at Entrance, Year 2, and Graduation

Ratio	Entering Cohorts	Year 2 Cohort	Graduation Cohort
Admission Status: Regular to Mature	3:1	4:1	16: 1
Sex: Female to Male	2:1	3:1	4:1
Age at Entrance: <20 yrs. to ≥21 yrs.	3:2	2.3:1	3:1
Indigenous Identity: Metis to First Nations	1:1	1.25:1	2:1

Data on graduates are limited since several entering cohorts in our study were still in degree progress. However, for graduates who had been in their programs a minimum of six years, graduation demographics do not appear to be proportional to those of entering cohorts and reflect risk factors previously identified for students at the end of the first year. Table 2 shows that for admission status, the ratio at entry was 3:1 (three Regular students for each Mature student), but the graduation ratio was 16:1. Similarly, for students under 21 years compared to those 21 or over, the ratio at entry was 2:1 but the ratio at graduation was 5:1. Although an equal proportion of First Nations and Metis entered, for every five Metis students who graduated, only one First Nations student did so.

Academic outcomes in Term 1

The multivariate results indicated that Term 1 GPA is most closely associated academic progression (explained variance = 41%). A linear bivariate analysis was then conducted between sessional GPA (Term 1 sGPA; and cGPA to measure the strength of the relationship between the two variables.

Table 3. Relationship of First-Term GPA to Term 2 Progression

	First Term GPA					
	<1.0	1-1.99	<2.0	2-2.99	≥ 3	Row Totals N
	%	%	%	%	%	
All	25	15	40	27	33	5154
Did not progress to Term 2	45	16	34	10	6	937

As Table 3 shows, first-term GPA (sGPA) was the most important non-demographic factor associated with academic progression. The majority (92%) of the 60% students who completed their first fall term with a sGPA ≥2.0 progressed to the winter term. In contrast, only a third of students with a sGPA of <2.0 similarly progressed.

The dataset was tested for reliability using Cronbach's alpha coefficient (Cronbach,1951). The calculated alpha coefficient exceeded the value considered adequate reliability in the data (alpha = 0.73; Taber 2018). In testing for multicollinearity, using Field's test of collinearity diagnostics in SPSS of obtaining tolerance and VIF values, a check of the covariates indicated the absence of multicollinearity as all the tolerance values are greater than 0.1, while the VIF values are all less than 10. Lastly, a check of the Durbin-Watson test yields a value of 1.7. This falls into the acceptable range of 1.0 to 3.0.

Course load was also investigated to explore whether students who were either part-time or had full-time status (9 credit hours) or exceeded the minimum full-time requirements (>9 credit hours) had different academic outcomes. Course load in Term 1 was not associated

with differences in academic outcomes.

Academic outcomes of top enrolled courses.

We next analyzed the 25 most heavily enrolled undergraduate courses (all below the 2000 level, minimum N per course = 500) in which Indigenous students enrolled in any year of their program. The analysis produced a wide range of final grades, with the combined proportion of grades of A, B and C ranging from 38% to 83% per course, and several bi-modal distributions. However, in almost 80% of courses, the proportion of D, F or VW (DFW) was at least 30%, and in 75% of courses, a greater proportion of students had grades of D or F than VW. Science courses tended to have higher DFW rates compared to those in the humanities and social sciences. Subsequent comparisons with the academic outcomes of non-Indigenous students in the top enrolled first-year science courses suggest that at-risk academic outcomes for Indigenous students are consistently greater than those of non-Indigenous students: The DFW rates for non-Indigenous students in these courses ranged from 20-44%, while the DFW rates of Indigenous students in each course exceeded those by about 10% (32-53%).

We next examined Indigenous students' grades in repeated courses in which they had a D, F or VW on their first attempt. While there was some variation, we found that students' performance usually did not improve on the repeated attempt. This finding was consistent in repeated courses regardless of discipline.

Discussion and Implications

Some of our results are consistent with others who have examined first-year retention, and Indigenous learners (e.g., Kahn et al., 2019; Tinto, 2006). Our study suggests that academic persistence is strongly associated with the results of Indigenous student's first year of study, and that those admitted without having completed high school, males and First Nations students are often at academic risk. Based upon our review of the relevant literature, discussions with Indigenous staff and students, and the professional experience of the researchers with Indigenous students, we offer several observations and implications for policy and practice.

While in some ways, the demographics of first-year Indigenous students are similar to those of the general first year population, there are critical differences that ought not to be overlooked in creating a successful first year experience for Indigenous learners. For example, the language, culture, and policies of academia; lack of Indigenous instructors, administrators, support staff or even first-year students, a perceived lack of social safety and community on-campus, racism both systemic and apparent, the experience with colonizer curriculum, and

financial insecurity are all formidable barriers to a successful first term for these learners. When educational and economic challenges are coupled with the legacy of colonialism, and issues of identity and systemic racism, barriers to academic success can be insurmountable.

The falling number and proportion of Mature Indigenous students entering first year raise concerns that adult Indigenous learners may have been missed in recruitment efforts or they may not see university studies as an option. That a greater proportion of Mature Indigenous students are at academic risk at the end of their first-term, and are considerably less likely than Regular Indigenous students to graduate, suggests that a review of academic preparedness and supports and institutional barriers specifically affecting this group is in order: In general, Indigenous Mature students are in academic risk, but at particular risk are First Nations, male Mature students (68% of this latter group had cumulative GPAs below 2.0, meaning potential academic probation or suspension).

Some of the needs of Mature and/or adult Indigenous learners are different from those transitioning directly out of high school. In addition to academic preparedness challenges, these students often face barriers relating to family and work responsibilities, socioeconomic factors, and feelings of isolation on campus. A more robust first-year orientation for Indigenous Mature learners, with individualized skills assessments and academic skills-building within a culturally appropriate context (including Indigenous elders and knowledge keepers) is an option that should be explored to both build academic confidence and relationships and engagement.

It is well recognized that post-secondary participation and graduation rates have been falling for males across Canada and the United States (Statistics Canada, 2020c; National Center for Education Statistics, 2020). In that respect, our findings also reflect a general trend. However, Indigenous learners at academic risk, whether they by male, adult, or without high school completion, will require specific and culturally relevant support programs.

Universities and colleges not only wish to attract increasing numbers of Indigenous students but are also committed to them achieve academic success. While many Indigenous students do achieve academic success, it is of great concern that after we have attracted these students, a considerable proportion do not progress through to their goal of graduation. Indigenous scholars have pointed out that not only are universities settler and colonial, but Indigenous students also risk losing their Indigenous identity by integrating into them—another example of jeopardy. As one experienced Indigenous administrator remarked, "Rather than Indigenous students failing, it is the institution that is failing Indigenous students. It is incumbent upon the institution to determine what it is doing incorrectly, and then correct it. This should be

done in dialogue with Indigenous communities, scholars, and administrators" (Diedre Desmarais, in conversation with L. Wallace, 2019).

Recent research by the Center for First-Generation Student Success (2018a) has identified some common challenges that relate to institutional barriers to students' success: inconsistent, disjointed, and reactive student support; resource constraints; lack of alignment of program objectives, and lack of consistent student data. At the institutional level, recommendations include improving completion rates through intentional, holistic campus-wide programs; changing policies, processes and practices to better serve students and reduce barriers to success; bringing contacts and supports into one location; being proactive rather than reactive; bringing together all stakeholders to build and sustain community; and avoiding creating student programs that have tight timelines, limited support and minimal planning. Kaye Monk-Morgan stated, "We're sending students into environments that were not created with them in mind. We don't have to hold their hands, but we do need to walk beside them. Not because they're at a deficit, but because the institution is not nimble enough to effectively give them what they need to be successful" (Center for First-Generation Student Success, 2018 b).

Preparatory courses provide valuable academic supports for Indigenous students. However, policy for such courses often creates a situation of double jeopardy for students: such non-credit courses are not considered as part of full-time degree load and are therefore not recognized by the university nor financial sponsors when determining course loads or financial aid. The result is that students are burdened with the full financial costs of these courses as well as the issue of trying balance a heavier academic schedule than is typical for other students. Dropping the current exception of these courses for determination of full-time load and financial aid would reduce a significant barrier to Indigenous student success.

Analysis of the results of the top-enrolled first-year courses taken Indigenous students and subsequent comparisons with the outcomes of non-Indigenous students in top enrolled first-year science courses suggests that at-risk academic outcomes for Indigenous students are consistently greater than those of non-Indigenous students. (This is not to suggest however that a VW or taking a term off (stopping out) may not sometimes the healthiest decision for students, as students withdraw from courses for reasons other than academic performance (e.g., financial, family, work, health).

As to why students would remain in courses in which they were struggling academically (with the result of an F rather than a VW): Students may be unaware of the academic consequences of F grades, reluctant to go to advisors (whose offices are often in the intimidating Dean's office) or ask for help in the confusing bureaucracy. Financial sponsor-

ship policies can also have a critical impact on Indigenous students' decisions about VW. As sponsorship or financial aid usually requires that students maintain full-time enrolment status, those considering VW may face another situation of double jeopardy: In our experience, in order to keep their funding (which includes living costs as well as tuition), students may choose to remain in courses in which they should have withdrawn. As a consequence, these students fail courses, and may be put at further academic risk. Students must of course be accountable for financial support, but if policy makers could build in some latitude for first-year students regarding course load, students could more readily drop courses in their first term or year.

There is also a need to align the funding timelines of Indigenous students' home communities with university deadlines (e.g., admission, registration) so that students were not caught being unable to pay their fees on time—a need that was also recently reported by Indspire (2018). Indigenous students would be better served by stronger relationships between universities and Indigenous communities (in particular, policy makers, teachers, administrators and education counsellors), as well as increased student financial aid.

In view of the considerable proportion of Indigenous students with a D or F grade in the first course attempt whose grades did not improve in the repeat of the course, and considering that advisors sometimes encourage students to re-take these courses, we suggest that:

> a) Advisors exercise caution before recommending that students retake courses in which they have received a D/F. Students' knowledge/skill areas may require upgrading, and simply retaking a course may further increase the student's academic risk. In fact, assessing knowledge/skills areas and providing upgrading or transition programming should ideally take place before the student registers.
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> b) In courses with high DFW rates, a detailed instructional design review should be conducted of assessments (e.g., analysis of student error rates on tests, alignment with learning outcomes) and curriculum (e.g., alignment and sequencing of content, prerequisite knowledge). This would allow identification of content (knowledge/skills) areas where students may need specific help, and subsequent development of sessions and material to address these. Early identification of gaps at or prior to admission also presents an opportunity for voluntary course specific knowledge/skill development.

"Early warning" systems are often used to identify students at academic risk. However, such systems must be accompanied by trusting relationships, timely guidance, and academic development. This is critical, especially during an Indigenous student's first year. The successful model of first-year seminars for first-generation students described by

Vaughan, Parra, and Lalonde (2014) provides a good example of engagement and support.

Indigenous students often prefer to have one, trusted "go-to" academic advisor, preferably an Indigenous person, with whom they can meet in a safe environment. (Students commented that other than at the Indigenous Student Centre in Migizii Agamik - Bald Eagle Lodge, the campus had few "welcoming" spaces for students to meet and gather.) Enhancing supports as well offering these at times (e.g., by extending office hours) when Indigenous students (especially adults) can access them would assist them in a successful transition to university. As part of the first year advising process, advisors should stay in very close contact with students to follow course progress, inform students about VW deadlines and consequences, and assist with decisions to VW and/or repeat courses. Instructors can also help this decision-making process by ensuring that students receive sufficient graded feedback before the VW deadline. In designing courses, a balance is necessary between low-stakes early feedback to encourage risk-taking and feedback similar to the end-of-course assessment before the VW deadline.

While there is not one first-year experience but rather many first-year for Indigenous learners, our findings reflect factors that point to the great and urgent need for institutions to commit to decolonization and reconciliation, and address racism in every form, and provide a safe environment and culturally appropriate spaces and curriculum for Indigenous students.

Implications for future research

There has been growing recognition of the importance of expanding post-secondary education access beyond traditional academic pathways (e.g., Day & Newburger, 2002), and access programming and transition supports have been identified as central for those who come from marginalized populations (e.g., Thomas, 2002; Kuh, 2009; and Levin, 2009). The growing body of scholarship focused on decolonizing education and Indigenizing curricula has assisted universities in their efforts in these respects (e.g., Battiste, 2013; Goulet & Goulet, 2014; Aikenhead & Michell, 2011; Kanu, 2011; Kuokkanan, 2007).

The large dataset used in this study enabled statistical analysis of a limited number of variables to establish trends (the "what" in terms of numbers). However, an important next step would be for researchers to have access to institutional data on academic progression relating to the student population by age, admission status and sex to allow comparisons of Indigenous students to the rest of the student population. Finally, while the data provided valuable information on some factors associated with academic progression, these did not capture the socio-economic or personal circumstances or experiences of learners. Investi-

gating the "why" questions and the personal journeys and circumstances of students are also critically important in understanding Indigenous student success, and it is our hope that this study be followed up with a qualitative study. Further research should be conducted to investigate the effect of university and funder policies relating to student finances and required course load and other socio-economic variables as factors in Indigenous student success, and finally, the study could be replicated at other institutions, using institutional data.

Conclusion

For the economic and social well-being of our society as a whole and Indigenous peoples in particular, universities must attract greater numbers of Indigenous students, work with Indigenous communities to seek solutions on improving the academic experience for Indigenous students, and work within their institutions to improve the academic experiences and outcomes of these learners. On the whole, a collaborative, strengths-based advising and support framework that incorporates Indigenous students' experience, knowledge, skills, and relationships is needed in order to avoid "deficit" labelling. Deficits at the societal and institutional levels must be addressed at those levels; otherwise, universities do Indigenous students a disservice.

This study makes a significant contribution to the body of scholarship and programmatic knowledge regarding Indigenous university students by providing an analysis of trends as well as factors associated with academic success for these students and offering recommendations to avoid placing student success in jeopardy and thereby enhance their success. The findings will also directly inform policy and contribute to the design and delivery of programs and services for Indigenous students (e.g., providing targeted supports and interventions), all of which must be done with Indigenous peoples, fully in the spirit of reconciliation.

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