

From Student Satisfaction to Impact: Approaching Impact Evaluation in the Context of Methodological Constraints. *A Practice Report*

Rhonda Leece, Caroline Rueckert and Daniel Madden

Queensland University of Technology, Australia

Abstract

This study investigated the impact of Queensland University of Technology (QUT) student engagement with co-curricular services in 2020. With limited institutional data, it is often not possible to gauge the cumulative impact of all retention and teaching activities, and while any one support activity cannot carry the weight of improving student outcomes, it is important to consider the impact of each as a contributing factor. We asked ourselves: How exactly do we determine how students' connection to services is impacting learning? How do they connect to wider university expectations such as widening participation initiatives or retention activities? And how do we use evaluative strategies productively to mature our service design so that we can move beyond "satisfaction" to "impact"? Despite methodological constraints, converging lines of evidence indicate that engagement with services in 2020 had a small, but statistically significant, positive impact on grade point average (GPA), progression, and retention.

Keywords: Student engagement; progression and retention; relationships; multidimensional support.

Introduction

Universities in Australia are facing a plethora of new and unique challenges, causing them to rethink how they navigate the complexities of student success. They are navigating sector challenges such as the introduction of performance-based funding – and the subsequent need to find effective ways to measure performance, and new forms of educational delivery, particularly in the digital space. As well, there is increased competition between traditional and emerging new providers for students. Labour market forces, which look to higher education to produce “job-ready” workers and students who value higher education largely for the labour market advantage it can provide, are at play. Changing student expectations around an enhanced student experience, access and flexibility; the increasing need to widen participation to include people from low socioeconomic (SES), regional or remote backgrounds and other under-represented groups such as Aboriginal and Torres Strait Islander (ATSI) people; are also at play. Furthermore, student success is very much a public debate, with considerable discussion in the media about the future of higher education, blueprints for “transformation” and panicked articles about how the future of the universities is under threat (EY, 2021b). This confluence of challenges has meant that student attrition and success in higher education is a significant concern for government, policymakers, universities, students and the communities they belong to (Kahu & Nelson 2018) and this has only increased as a result of the pressures of COVID-19.

Universities have responded to these challenges in part by rethinking – and in some cases transforming – their approaches to the student experience. In doing so, Australian universities have looked to commercial sectors, for guidance on how to reimagine the “customer service” that they provide students and adopted models that are rooted in concepts of “putting the customer first” and in “customer satisfaction” (KPMG, 2020). There has been a shift towards the idea of “one stop shops” for students, a place where students can have all their needs met under a single umbrella. These new service models have allowed for a range of improvements to student support including streamlining student enquiries from enrolment through to graduation, maximising opportunity and choice and ensuring more student-centred service models. Improving the speed and timeliness of



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service creating a more accessible, integrative approach and breaking down traditional departmental silos as well as offering greater personalisation and flexibility of service are by-products of the commercial focus on continuous service improvement (EY, 2021a).

Traditionally, student engagement has been evaluated through two core aspects: the students' involvement with activities and conditions likely to generate learning (Coates, 2005) as well as on the policies and practices institutions use to induce students to take part in these activities (Kuh, 2003). With the introduction of these new service models, new metrics were added, that are based on the customer service model of support. Such measures include the speed of service delivery, the level of personalisation, how integrated and "seamless" the experience of receiving support is; the number of student touchpoints; and – in true customer service style – evaluations of "customer (student) satisfaction." These are being added to traditional measures to support national comparisons and league tables on how well universities are delivering a "quality student experience" (DESE, 2020a).

However, although these models might work well in the context of actual customer service, they are limited when applied to the context of universities. In the enthusiasm for collecting new kinds of data, there has been considerably less focus on how these new service models relate to concepts such as student success, learning, learner progression, and student attrition and retention. In other words, how exactly do we determine how students' connection to these services is impacting their learning? How do they connect to wider university expectations such as widening participation initiatives or retention activities? And how do we use evaluative strategies productively to mature our service design so that we can move beyond "satisfaction" to "impact"?

In 2018, a new Student Success Group (SSG) was formed at the Queensland University of Technology (QUT) to transform the student experience. Its purpose was to challenge the traditional boundaries around teaching, learning and support to create a new partnership model of support that would meet students where they're at. It took advantage of the tiered service model and the "one stop shop" but also aligned support services to the curriculum to create a new ecology of support model of shared responsibility for student success that transcended traditional departmental silos, shifted from a reactive to a proactive approach to student support, and took account of the multidimensional nature of learning, within the classroom and beyond. This new model embraced the idea that student engagement is best conceptualised as a joint venture between the student and the institution (Zepke, 2017) and took seriously the concept that, as Kahu and Nelson affirm, "Learning is a partnership" influenced "as much by the student as it is by the institution. The ongoing task of both the student and institution is to facilitate working in the interface in order to learn from each other and to draw on the strengths of both" (Kahu & Nelson, 2018, p. 68). SSG intentionally established the building blocks of a model created to be evidence-based and agile to the emerging needs of an ever-changing student population.

As part of this transformation, QUT also developed a new, comprehensive model for evaluating its ecology of supports. This new evaluative framework moved beyond the evaluation of individual programs based on customer service metrics, to holistically evaluating the entire "service ecology," in order to gauge the cumulative impact of supports on student outcomes such as progression and retention. Specifically, we investigated the impact of QUT student engagement with co-curricular services in 2020. The following sections aim to demonstrate that even in the context of some common methodological challenges, steps can be taken towards evaluation of impact on student outcomes.

Methods

Sampling

The dataset comprised QUT Coursework students studying in 2020. This set was divided into two separate (and partially overlapping) student cohorts for analyses: The **Semester 1 Cohort** included all students who were actively enrolled in at least one unit as at the census date in Semester 1, 2020 (or other teaching periods in the first half of the year); the **Semester 2 Cohort** included all students who were actively enrolled in at least one unit as at the census date in Semester 2, 2020 (or other teaching periods in the second half of the year). Students with missing data or multiple course outcomes within a semester were excluded from analyses.

Measures

Outcome Measures. Students were classified as having either a positive or negative *Course Outcome* based on their course status as at Semester 1, 2021. If a student was not actively enrolled in 2021 (and had not previously completed their course), this was considered a negative outcome. If the student was actively enrolled, or had completed their course, this was considered

a positive outcome. For the *Semester 1 Cohort*, these 1-year outcomes could be interpreted in terms of retention. For the *Semester 2 Cohort*, these next-semester outcomes could be interpreted in terms of progression. *Grade Point Average (GPA)* was also used as a measure of student success for each semester.

Key Predictors. Three key predictors indicated whether students engaged with SSG services during the semester of interest. These included *Workshops*, *Drop-In Activities*, and *Appointments*. A control group was also established as a basis for comparison with appointment attendance. The control group included students who booked one or more Appointments during the semester but did not attend any.

Control variables. Demographic and enrolment factors were used as control variables in the analyses. These included *Course Stage* (Commencing or Continuing), *Course Load* (full-time or part-time), *Previous Unit Attempts*, *First-in-Family Status (FiF)*, and *ATSI Status* (identifying as Aboriginal or Torres Strait Islander background). *Previous Unit Attempts* indicated the percentage of enrolled units that a student had previously attempted at least once, as opposed to units being attempted for the first time in that semester. A student was classified as *FiF* if no listed parent or guardian held a recognised post-school qualification.

Statistical Analyses

Grade Point Average. Standard multiple regression analyses were conducted for each cohort to investigate the effects of engagement with SSG services on GPA, after controlling for demographic and enrolment factors. Models were assessed against test assumptions and a square root transformation was applied to reduce negative skew in Semester 2 GPA.

Course Outcome. Preliminary analyses showed that engagement with Drop-In Activities was not significantly associated with course outcomes for either cohort ($p > .05$), so this was not included as a predictor in the analyses. Binary logistic regression analyses were conducted for each cohort to assess the effects of engagement with SSG Workshops and Appointments on the likelihood of a negative Course Outcome, after controlling for demographic and enrolment factors. Random under-sampling of the positive outcome class was used to create a balanced set ($N = 5,504$ for Semester 1 Cohort: $N = 5,309$ for Semester 2 cohort). The cut-off for classifying a negative course outcome was accordingly set to .5. The model was tested against assumptions of logistic regression. Fisher's Exact test was used to compare Appointment Attendees with the Appointment Absentees control group in each cohort.

Results

Semester 1 Cohort

Course Outcome. Both Workshop and Appointment participation were significant predictors after controlling for all other variables in the analysis. The odds of a negative course outcome were 1.9 times greater for students who did not attend SSG Workshops ($N = 5,093$) than for those who did ($N = 411$), Wald $\chi^2 = 32.42$, $p < .001$. By contrast, the odds of a negative course outcome were 1.88 times greater for students who required SSG Appointments ($N = 107$) than for those who did not ($N = 5,397$), Wald $\chi^2 = 8.63$, $p = .003$.

Four of the five control variables were significant predictors. After controlling for all other predictors, the odds of a negative course outcome were 3.45 times greater for commencing students ($N = 1,993$) than for continuing students ($N = 3,511$, Wald $\chi^2 = 400.21$, $p < .001$), 1.62 times greater for part-time students ($N = 558$) than for full-time students ($N = 4,946$, Wald $\chi^2 = 24.52$, $p < .001$), 1.62 times greater for students who were first in family ($N = 535$) compared to those who were not ($N = 4,969$, Wald $\chi^2 = 24.54$, $p < .001$), and 3.16 times greater for students who had attempted their units at least once before, compared with students who were attempting their units for the first time (Wald $\chi^2 = 121.88$, $p < .001$). ATSI was not a significant predictor after controlling for the other variables in the model (Wald $\chi^2 = 3.29$, $p = .070$).

The logistic regression was statistically significant, $\chi^2(7) = 577.62$, $p < .001$, but the Hosmer and Lemeshow Test indicated that the model overall did not effectively describe the data ($p < .05$) and the model had low predictive power. Only 13% (Nagelkerke R^2) of variance was explained in the outcome variable and 64% of cases were correctly classified. Sensitivity was 59%, specificity was 70%, positive predictive value was 67%, negative predictive value was 63%. The area under the ROC curve (.682) indicated poor discrimination. The overall model is therefore inadequate for the purposes of prediction of individual course outcomes and was not validated against a test set.

To further investigate the negative association between Appointments and course outcome, students who attended appointments (attendees) were compared only to students who had booked appointments but did not attend (absentees). There

was a significant association between Appointment attendance and course outcomes, as assessed by Fisher's exact test, $p < .05$. There were 459 students included in the analysis. Of the 48 who booked appointments in Semester 1 2020 but did not attend, 33.3% (16) had a negative course outcome in Semester 1, 2021. Of the 411 who did attend appointments, only 20.2% (83) had a negative outcome. No such comparison could be made to further investigate any effects of attending Drop-Ins.

Semester 1 GPA. A standard multiple regression analysis was conducted with Semester 1 GPA as the criterion ($N = 20,099$). Preliminary analyses showed that Commencing status was not significantly associated with GPA ($r_{pb} < .01$, $p > .05$). All remaining control variables showed a significant association and were included in the regression. Predictors included engagement with Workshops, Drop-In Activities, and Appointments, as well as students' Course Load, Unit Attempts, FiF status, and ATSI status. After controlling for all other variables, a significantly higher GPA was predicted based on participation in SSG Workshops ($N = 1,880$, $\beta = .05$, $p < .001$) and Drop-In activities ($N = 322$, $\beta = .02$, $p = .014$). A significantly lower GPA was predicted for students requiring appointments ($N = 332$, $\beta = -.03$, $p < .001$). A lower GPA was also predicted for students with a full-time course load ($N = 18,968$, $\beta = -.04$, $p < .001$), students enrolled in a higher percentage of previously attempted units ($M = 10.58\%$, $\beta = -.14$, $p < .001$), students first in their family to attend university ($N = 1,702$, $\beta = -.02$, $p = .016$), and students identified as ATSI ($N = 285$, $\beta = -.03$, $p < .001$). Together, the predictors significantly explained only 3% of variance in Semester 1 GPA, $F(7, 20091) = 77.50$, $p < .001$.

Further investigation using point-biserial correlation showed no significant association between Semester 1 GPA and appointment attendance, when attendees were compared only to students who booked an appointment and did not attend, $r_{pb}(378) = .09$, $p = .088$.

Course Load. Fisher's Exact test was used to investigate whether students from Equity groups were more likely to be studying part-time in Semester 1. There was a significant association between ATSI Status and Course Load, $p < .001$. Of the 355 identified as ATSI students, 14.9% (53) had a part-time Course Load in Semester 1. Of the 22514 students who did not identify as ATSI, only 8% (1798) were part-time. There was also a significant association between FiF Status and Course Load, $p < .001$. Of the 2033 students identified as ff to attend university, 14.7% (299) had a part-time Course Load in Semester 1. Of the 20974 students who were not FiF, only 7.9% (1657) were part-time.

Semester 2 Cohort

Course Outcome. As with the Semester 1 Cohort, both Workshop and Appointment participation were significant predictors after controlling for all other variables. The odds of a negative course outcome were 1.27 times greater for students who did not attend SSG Workshops ($N = 4,964$) than for those who did ($N = 345$, Wald $\chi^2 = 4.20$, $p = .040$) and 1.91 times greater for students who required SSG Appointments ($N = 123$) than for those who did not ($N = 5,186$, Wald $\chi^2 = 10.91$, $p < .001$).

Three control variables were significant predictors. After controlling for all other variables, the odds of a negative course outcome were 2.20 times greater for commencing students ($N = 2,475$) than for continuing students ($N = 2,834$, Wald $\chi^2 = 181.39$, $p < .001$), 1.95 times greater for part-time students ($N = 725$) than for full-time students ($N = 4,584$, Wald $\chi^2 = 61.31$, $p < .001$), and 2.84 times greater for students who had previously attempted their units at least once, compared with students who were attempting their units for the first time (Wald $\chi^2 = 111.73$, $p < .001$). There was no significant effect of identifying as ATSI (Wald $\chi^2 = 0.12$, $p = .726$) or FiF (Wald $\chi^2 = 0.34$, $p = .559$) after controlling for the other variables.

The logistic regression was statistically significant, $\chi^2(5) = 355.47$, $p < .001$, but as with the Semester 1 Cohort, the Hosmer and Lemeshow Test indicated that the model overall did not effectively describe the data ($p < .05$) and the model had low predictive power. Only 9% (Nagelkerke R^2) of variance was explained in the outcome variable and 61% of cases were correctly classified. Sensitivity was 64%, specificity was 59%, positive predictive value was 59%, negative predictive value was 63%. The area under the ROC curve (.648) indicated poor discrimination. The overall model is therefore inadequate for the purposes of prediction of individual course outcomes and was not validated against a test set.

To further investigate the negative association between and course outcome, students who attended appointments were compared only to students who had booked appointments but did not attend. There was a significant association between Appointment attendance and course outcomes, as assessed by Fisher's exact test, $p < .05$. There were 604 students included in the analysis. Of the 69 who booked appointments in Semester 1 2020 but did not attend, 29% (20) had a negative course outcome in Semester 1, 2021. Of the 535 who did attend appointments, only 18.1% (97) had a negative outcome. No such comparison could be made to further investigate the lack of effect for students who attended Drop-Ins.

Semester 2 GPA. A standard multiple regression analysis was conducted with the square root transformation of Semester 2 GPA as the criterion ($N = 21,062$). Predictors included engagement with SSG Workshops, Drop-In Activities, and Appointments, as well as students' Course Stage, Course Load, Unit Attempts, FiF status, and ATSI status. After controlling for all other variables, a significantly higher GPA was predicted based on participation in SSG Workshops ($N = 1,647$, $\beta = -.06$, $p < .001$) and Drop-In activities ($N = 323$, $\beta = -.02$, $p = .002$). A significantly lower GPA was predicted for students requiring appointments ($N = 429$, $\beta = .02$, $p = .022$). A lower GPA was also predicted for commencing students ($N = 775$, $\beta = .08$, $p < .001$), students with a full-time course load ($N = 19,662$, $\beta = .06$, $p < .001$), students enrolled in a higher percentage of previously attempted units ($M = 13.06\%$, $\beta = .19$, $p < .001$), students first in their family to attend university ($N = 1,774$, $\beta = .04$, $p < .001$), and students identified as ATSI ($N = 324$, $\beta = .04$, $p < .001$). Together, the predictors significantly explained only 5% of variance in Semester 2 GPA, $F(8, 21053) = 148.92$, $p < .001$.

Further investigation using point-biserial correlation showed that appointment attendance was in fact significantly associated with a higher GPA, when attendees were compared only to students who booked an appointment and did not attend, $r_{pb}(497) = .10$, $p = .022$.

Course Load. Fisher's Exact test was used to investigate whether students from Equity groups were more likely to be studying part-time in Semester 2. Unlike in Semester 1, there was no significant association between ATSI status and course load in Semester 2, $p > .05$. Of the 380 identified as ATSI students, 12.4% (47) had a part-time Course Load in Semester 2. Of the 23069 students who did not identify as ATSI, 10.5% (2413) were part-time. There was a significant association between FiF Status and Course Load, $p < .001$. Of the 2081 students identified as being first in their family to attend university, 18.2% (378) had a part-time course load in Semester 2. Of the 21644 students who were not FiF, only 10.6% (2298) were part-time.

Discussion

Overview of Findings

This study investigated the impact of student engagement with SSG services in 2020, after controlling for demographic and enrolment factors. Results overall indicate that engagement with SSG services in 2020 had a small, but significant, positive impact on GPA, progression, and retention. Converging evidence for this conclusion was presented for the Semester 1 and Semester 2 Cohorts.

Workshops. In both semesters, it was found that a higher GPA was predicted based on participation in SSG Workshops. For both cohorts, it was also found that the odds of a negative course outcome were greater for students who did not attend SSG Workshops than for those who did. For the Semester 1 Cohort, this is a 1-year outcome that can be interpreted in terms of student retention. For the Semester 2 Cohort, this is a next-semester outcome that can be interpreted in terms of student progression. Overall, these findings therefore suggest that engagement with SSG workshops was linked with higher GPA in 2020, as well as positive progression and retention outcomes in 2021.

Appointments. By contrast, a lower GPA was predicted in both semesters for students requiring SSG appointments. Likewise, for both cohorts, the odds of a negative course outcome were greater for students who required SSG appointments than for those who did not. These effects were to be expected based on the target audience of this service type. Students who book SSG appointments typically do so because they require one-on-one support with their studies, which may indicate that they are already more at risk of a lower GPA and negative course outcomes when compared with the general student population. The impact of the service itself therefore required comparison with a control group of similar students. Appointment attendees were subsequently compared only with students who booked appointments but did not attend. With this comparison, the previously identified negative effect on GPA was no longer found for Semester 1 and even reversed for the Semester 2 Cohort, such that appointment attendance was associated with a higher Semester 2 GPA. The negative effects on course outcome were also reversed with this comparison. For both cohorts, appointment attendance was associated with a lower percentage of negative outcomes when compared to students who booked appointments and did not attend.

Drop-Ins. In both semesters, it was found that a higher GPA was predicted based on engagement with Drop-In activities. This suggests that SSG Drop-In services may have a beneficial effect for students in the semester of study. However, this effect did not appear to extend to course outcomes in 2021. There was no visible link between Drop-In participation and course outcomes for either cohort. Though the current finding did not provide evidence for the impact of Drop-In activities on later course outcomes, several factors could explain this null result.

While it is possible that the impact of Drop-Ins was simply not sufficient to affect course outcomes in the following year, this may not be the most likely interpretation based on the current findings and limitations in the dataset. Drop-Ins showed a positive effect on semester GPA. Based on the pattern of effects observed for workshops and appointments, this would be expected to extend to later course outcomes. Due to the COVID-19 pandemic, there was a higher than usual number of student withdrawals throughout 2020. So, while Drop-Ins may have contributed to a higher GPA, withdrawal due to unrelated factors could have reduced any mediating effect of improved GPA on later progression and retention outcomes¹. This would have similarly reduced the apparent effects of engagement with other SSG services; this possibility is discussed further in the limitations section. Since other SSG services still showed significant results, something more may account for the null result found for Drop-Ins.

It is possible that there are contrasting effects for different subgroups of student attendees. For instance, qualitative data suggests that students engage with a service for different reasons. Varying effects might be observable if students could be segmented according to their reasons for engagement (e.g., struggling with class material; developing peer connections; expanding on solid foundations to improve an already high GPA, etc.). Based on available data however, it is not possible to segment students according to their reason for attending a Drop-In service.

Evaluating the impact of Drop-ins might also be limited by the same issue as discussed when assessing the impact of Appointments. It makes sense that students who require Appointments in the first place would have shown more negative course outcomes than the general student population. Comparing Appointment attendees with an appropriate control group of Appointment booking absentees indicated that the Appointment itself was beneficial for this subgroup of students. Students more at risk of negative course outcomes may similarly seek out Drop-In services. The nature of a Drop-In service means that there are usually no bookings. It is therefore not possible to identify a comparable control group of students who booked and did not attend. So, while the current finding did not provide support for the impact of Drop-In activities on later course outcomes, it cannot be concluded based on current data that the benefit of Drop-Ins does not extend beyond improved semester GPA.

Demographic and Enrolment Factors. For both cohorts, the odds of a negative course outcome were greater for commencing students than for continuing students. A lower GPA was predicted for commencing students in Semester 2, but this was not found for the Semester 1 Cohort. For both cohorts, the odds of a negative course outcome were greater for part-time students than for full-time students. A lower GPA was also predicted each semester for students with a full-time course load. While the odds of a negative course outcome were greater in the Semester 1 Cohort for students who were FiF, there was no difference for the Semester 2 Cohort. A lower GPA was predicted for these students in both semesters. Finally, a lower GPA was predicted for ATSI students in both cohorts, but there was no difference in course outcomes for ATSI students in either cohort after controlling for other factors.

Supplementary analyses showed that both equity groups were more likely to be studying part-time. A higher proportion of ATSI students had a part-time course load in Semester 1 (15%) than did non-ATSI students (8%). However, this difference was not significant in Semester 2. For both cohorts, there was a higher proportion with a part-time Course Load among FiF students (15% in Semester 1; 18% in Semester 2) than for students who were not first in their family to attend university (8% in Semester 1; 11% in Semester 2).

Application of Findings at QUT

Based on the findings, we identified five key elements of the student experience for review and attention at QUT.

Firstly, SSG Appointment attendees were more likely to achieve positive course outcomes compared with students who booked appointments but did not attend. This suggests that participation is a stronger indicator of success, than intention to participate. At QUT, greater attention to the promotion, reinforcement of intention and milestone relevance of the service ecology has therefore been adopted during 2021 and 2022. A focus on positive help-seeking skills has been embedded in student success communications.

Negative course outcomes were greater for students who did not attend SSG Workshops than for those who did. This suggests that students who are not actively engaged with intentional support for learning activities are more likely to encounter progression challenges than students who are actively engaged with co-curricular supports. Consequently, we have adopted a

¹ Mediation was not assessed as part of the current investigation.

programmatic approach to the promotion and scheduling of activities under an umbrella label *Your Advantage*; simplified access to the service ecology; and introduced value propositions which are delivering increased and more targeted promotion of the benefits of participation to students.

Negative course outcomes were also greater for commencing students than for continuing students, and for part-time students than for full-time students. We have therefore increased focus on first year transitions using value propositions during Orientation and early semester, as well as building-out curricular support strategies for all commencing students to align with co-curricular support; and we explicitly consider the complexities of the life load of all students by engaging them in early diagnostics to identify needs for support. We have increased monitoring and support for part-time students, many of whom, who are identified as belonging to an equity group.

Finally, odds of a negative course outcome were greater for students who had previously attempted units at least once, compared with students attempting units for the first time. This aligns with the behavioural perspective that previous failure increases the risk of future failures. With the introduction of the Australian government's "Job-ready graduates package" of regulations (DESE, 2020b), we have introduced specific monitoring and intervention for students failing and then repeating units of failure as soon as the first failure is recorded in an attempt to preserve their course progression.

While confirming what has come before in the literature, this is the first time since the introduction of the SSG that analysis has been available to validate the impact of co-curricular support for learning.

This has simultaneously created an increased level of interest in the wider university community which is critical to the sustainability of student-centric services during periods of disruptive change and to highlight the data and analytic constraints which exist in the higher education sector.

Conclusion

The new evaluative framework, introduced in 2020 has moved QUT beyond a customer service evaluation of individual programs, to an evaluation of the entire service ecology. This has focused SSG attention on the impact of curricular aligned supports on student learning, retention and progression, and not on the usual body count of participation.

Data-limitations were significant, in part due to the emerging data framework but also to the changed transactional behaviours of students during the COVID pandemic which resulted in incomplete datasets for some activities. These constraints, however, should not discourage the use of similar analyses going forward. Two key learnings from this work were to 1) Work with what you've got, and 2) Context is important.

Work with what you've got. The constraints of data quality and access to institutional data, is common to many institutions but should not preclude institutions from undertaking similar analyses. In our first experience, while significant predictor effects were demonstrated consistently across semesters, overall models showed poor discrimination and were inadequate for accurate prediction of individual GPA and Course Outcomes. There was limited availability of quality data for historical enrolment factors or equity data that could have accounted for a higher proportion of variance in the outcome measures; and fields with many missing values or other data quality issues needed to be excluded from analyses. These constraints forced us to be alert to the data limitations and to initiate institutional data conversations more broadly.

Context is important. Smaller than expected effect sizes, as well as the poor discrimination of overall models, might also be attributable to atypical progression patterns during early stages of the COVID-19 pandemic in 2020. Withdrawals due to unusual circumstances may have reduced the impact of typical predictive factors on student outcomes. As impact is being investigated for the first time with data from 2020, it was not possible to quantify the difference this made to the results. Due to the pandemic, failed units in Semester 1 were not included in students' GPA. As the majority of students who failed units were not from the group who engaged with SSG services during this period of disruption, this may also have contributed to reduced effect sizes. As a result, we developed a practical understanding that statistical methods alone are not sufficient to fully understand impact analyses and consideration of the situational context needs to be integrated into the chosen method.

References

- Coates, H. (2005). The value of student engagement for higher education quality assurance. *Quality in Higher Education*, 11(1), 25-36. <https://doi.org/10.1080/13538320500074915>
- Department of Education, Skills and Education (DESE) (2020a). Upholding quality - quality indicators for learning and teaching. <https://www.desse.gov.au/higher-education-statistics/upholding-quality-quality-indicators-learning-and-teaching>
- Department of Education, Skills and Education (DESE) (2020b). *Job-ready graduates package*. <https://www.desse.gov.au/job-ready/announcements/job-ready-graduates-package>
- EY. (2021a). *The peak of higher education – a new world for the university of the future*. https://assets.ey.com/content/dam/ey-sites/ey-com/en_au/noindex/ey-new-world-university-of-the-future.pdf
- EY. (2021b). *COVID-19 brings forward the demise of the university campus*. https://www.ey.com/en_au/news/2021/08/covid-19-brings-forward-demise-of-university-campus
- Kahu, E. R., & Nelson, K. (2018). Student engagement in the educational interface: Understanding the mechanisms of student success. *Higher Education Research & Development*, 37(1), 58-71. <https://doi.org/10.1080/07294360.2017.1344197>
- KPMG. (2020) *The future of higher education in a disruptive world*. https://assets.ey.com/content/dam/ey-sites/ey-com/en_au/noindex/ey-new-world-university-of-the-future.pdf
- Kuh, G. D. (2003). What we're learning about student engagement from NSSE: Benchmarks for effective educational practices. *Change: The Magazine of Higher Learning*, 35(2), 24-32. <https://doi.org/10.1080/00091380309604090>
- Zepke, N. (2015). Student engagement research: Thinking beyond the mainstream. *Higher Education Research & Development*, 34(6), 1311-1323. <https://doi.org/10.1080/07294360.2015.1024635>

Please cite this article as:

Leece, R., Rueckert, C., & Madden, D. (2022). From student satisfaction to impact: Approaching impact evaluation in the context of methodological constraints. A practice report. *Student Success*, 13(2), 51-58. <https://doi.org/10.5204/ssj.2339>

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