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Technology-mediated advising for student success: Exploring self-mediated academic support for undergraduate students using AutoScholar Advisor System

Abstract

This article explores the use of the AutoScholar Advisor System (Auto-Ad) to provide useful learning support analytics for self-mediated student academic support. The study is part of a pilot project for enhancing student success in a four-year undergraduate degree (BEd) programme. Adopting students' self-authorship as an organising framework and using the Auto-Ad implemented on the learning management platform, the study involved 200 high-performing undergraduate students (cum laude or summa cum laude trajectory) in a School of Education at one university. A mixed-methods approach was used to collect and analyse the data. Quantitative data were analysed based on the students' interaction with the Auto-Ad as academic learning support tool to enhance their performance through automated advising. Qualitative open-ended comments allowing in-depth insight into the students' perceptions of their performance were also analysed. The students considered knowledge, self, and relationship to be important for achieving high performance and success. The strongest correlated factors were choice of degree, motivation, study habits, family, and relationships. Implications of these findings within the current student support systems at South African universities are discussed.

1. Introduction

Digital technology applications create possibilities for supporting students beyond traditional learning support boundaries. Learning support involves using resources and appropriate strategies to aid student learning. Support practices, including academic support, can shift to acknowledge increasingly students' active agency in their learning. Academic support refers broadly to strategies educational institutions use to increase student academic achievement, particularly for those who are at risk of poor performance (Peterson, O'Connor & Strawhun, 2014). To inform this shift in learning support and to understand and

enhance student success better, there is a need for the adoption of multi-modal (Blikstein & Worsley, 2016) and academic (Schumacher & Ifenthaler, 2018; Ifenthaler, 2017; 2015; Siemens & Long, 2011) learning analytics by the university. However, there is a need for caution in implementing learning analytics data in higher education (Larrabee Sønderlund, Hughes & Smith, 2019). The notion of student success in higher education is complex (Kuh *et al*., 2006; Scott, 2018; Tinto, 2012; Tiroyabone & Strydom, 2021; Kahu & Nelson, 2018), and therefore context-nuanced academic support strategies are needed to target outcomes in student success metrics better, namely self-efficacy, academic performance, persistence, retention, and completion (Soika, 2021).

In South Africa, universities face significant shortfalls in achieving student success (Mabokela & Mlambo, 2017). There is, therefore, a growing emphasis nationally (Bokana & Tewari, 2014) and within individual institutions on understanding the context and complexity of the student success problem, to support student experiences, and to enhance student success in their programmes of study (Tiroyabone & Strydom, 2021; Fataar, 2018; USAf, 2018; Dhunpath & Subbaye, 2018; Strydom, Kuh & Mentz, 2010). In addition, the issues of inclusion (Kruss, 2017) and equity gaps in students' education, experiences, and outcomes need to be addressed (Cosser, 2018; Notshulwana, 2011). The view of student success in the current study is informed by the position of the Council on Higher Education (CHE) as it involves enhancement of student learning to increase the "number of graduates that are personally, professionally, and socially valuable" (CHE, 2014: 1).

In this article, we approach student success from the perspective of academic support and aim to assess in order to understand how students engage and the positive outcomes of such engagement (Soika, 2021). Two definitions were proposed for the study. Initially, cum laude and summa cum laude students were identified. These are students in the programme who have completed at least their first year and have not failed any examination or failed to achieve progression requirements, while maintaining a cumulative aggregate of at least 75% in all registered modules. Then, because this definition delimits a relatively small group of students, it evolved to include improvement in the credit weighted average (CRW) of students' module results.

The first section of this article reviews student success in higher education to problematise approaches to supporting student success at South African universities. Further, it identifies reasons why a new lens for exploring success is needed and the usefulness of technology-mediated advising to evidence-informed learning support within the context of the study. Next, self-authorship (Baxter Magolda, 2008; Perez, 2019), the underpinning theoretical framework guiding the research, is discussed. The following section describes the methodology, explaining how the participants were identified by means of performance tracking using the AutoScholar Advisor System (Auto-Ad.). The Auto-Ad was used in this study since it is a system "designed to automate and optimise … higher education process toward increased graduation rate" (Modern Scholarship, 2023). The next section illustrates the data generated using the Auto-Ad, which is specifically designed around the project methods to analyse the quantitative research survey, and then analyses qualitative comments on success factors. The last section elaborates on the implications of the findings, reflects on the limitations, offers recommendations for further research, and concludes with a summary of the key findings.

2. Student success in higher education

Globally, student success continues to interest higher education researchers, practitioners, and institutions. This is because of its importance to the student experience (Raaper, Brown & Llewellyn 2022), student outcomes (Guo *et al*., 2022), and institutional sustainability (Sanches *et al*., 2022), among other considerations. Wood and Breyer (2017: 3) identify three stakeholders for success in higher education, namely the individual, the institution, and national and global stakeholders. These are attributed success factors and tend to overlap (Wood & Breyer, 2017).

Attempts to define student success have recently emphasised a greater need for positioning the students as an important stakeholder at the centre of their learning (Bloch *et al*., 2022). There is a shift from a fundamental definition viewing student success as access to and completion of higher education qualifications (Wood & Breyer, 2017) to looking beyond graduation. In addition to completion of the qualification requirements (Kuh *et al*., 2006), other facets of student success have been emphasised, including career aspirations (Atkins & Ebdon, 2014), quality of student experiences and engagement (Kinzie & Kuh, 2017). The role that context plays in shaping students' educational experiences matters (Henderson & Cunningham, 2023). Therefore, an expanded definition of student success does not only account for qualification attainment, but also includes other outcomes and aspects of educational experiences (Alyahyan & Düştegör, 2020).

An expanded definition of student success is necessary to provide insight into what contributes to graduation or completion and into the actions that can improve student performance, progression, and success. Hence, a measure of student success in higher education includes a combination of engagement, retention, progression, attainment, and completion indicators (Alyahyan & Düştegör, 2020). In the present study, we operationalise student success in terms of student academic support as indicated in the measure of how students engage, and the positive outcomes of that engagement (Soika, 2021).

Discussion on student success in higher education needs to consider the students' backgrounds. It must address equity issues as well as other imperatives influencing the desired students' educational outcomes (McNair *et al*., 2022). In South Africa, a sizeable population of university students come from educational and social environments that are still marginalised (McGhie, 2012). Even though some of these students receive government funding for their education, primarily through the National Students Financial Aid Scheme (NSFAS), their socio-economic circumstances limit the effectiveness of this support in promoting retention, persistence, and success, and in preventing dropouts (Masutha, 2022). Students experience university differently (Fataar, 2018), and for some, vulnerabilities may be supported by the deficit model of student support and reinforced by speculative rather than insightful guided academic advising (NACADA, 2003). There is a risk of downplaying intersecting exclusionary structures (Masutha, 2022) and cultural factors that block opportunities for student learning.

Lemmens and Henn (2016) suggest that data analytics are necessary to support evidence-informed practices in South African higher education. One use of data analytics could be to enable insight into students' perceptions of the positive factors that influence their success and enable a better understanding of their mindsets (Pride, 2014). Data analytics can also lead to positioning students as crucial agents in their learning, motivating them to aim for high performance and success (Talbi & Ouared, 2022; Ifenthaler & Yau, 2020).

3. A critical overview of the approach to supporting student success within a South African university context

Students at South African universities have differing educational experiences (Fataar, 2018). Coming from stratified social, economic and schooling backgrounds, they continue along different pathways in higher education (Cosser, 2018). The academic support system tends to be normative, prioritising pre-1997 student deficit concepts of academic development (Volbrecht & Boughey, 2004). This undermines the development of student agency (Nnadozie & Khumalo, 2023). While various approaches have been implemented to improve student success (Scott, 2018), what these have in common is the pursuit of helping students to pass by dealing with disadvantages through financial and remedial support. Perhaps what is lacking is an approach to support that focuses on students' experiences of normalising success in 'being' and 'doing' by themselves.

An approach to understanding and supporting students' success needs to be empowering, allowing them to recognise and draw on their strengths, to understand their support needs, and to enact agency for meeting such needs. Various scholars (Blair, Campbell & Duffy, 2017; Menkor *et al*., 2021; Strayhorn, 2018) suggest that multi-pronged strategies allow for a holistic view of success, including experiences of academic success, student well-being, and a sense of belonging. Such strategies require data-driven methods to inform an understanding of the influences on students' success and supporting student success.

4. Reimagining the approach to supporting student success

There is a call for a change in the discourse on improving student success in higher education. Thus, for example, Wood and Breyer (2017) see the move to discussing success and retention rather than failure and attrition as an aspect of this change. Van den Bogaard and Zijlstra (2016: 7) advocate applying meaningful ways by developing "new methods and a new discourse to understand the complex issues of student success". They argue that there is a need to look beyond one-size-fits-all 'best practices' to adopt a solution for specific situations using emergent practices that emphasise co-creative solutions (Van den Bogaard & Zijlstra, 2016). Citing Dorst (2015), they also suggest that a new discourse of student success in higher education should allow for reframing to study "'student success' and the related concepts such as … what does 'success' mean, … what other solutions and approaches can we think of when we do not consider our fixed ideas …" (Van den Bogaard & Zijlstra, 2016: 7). Such calls for reframing the discourse of student success have prompted the use of the lens of performance and strength in the present study, as opposed to the dominant approach focusing on failure and deficit.

5. Technology-mediated learning support for student success

Increasingly, it has been shown that the integration of technology with innovation in the educational process involves the student taking on a central role in learning (Jokhan *et al*., 2022). Research in South Africa (Cele, 2021) highlights the relevance of data-driven student support mechanisms at universities. Data-driven student academic support using automated advising mediation can elicit active engagement of the student. In exploring meditation as a pedagogical practice, Riofrío-Calderón and Ramírez-Montoya (2022: 2) cite Tobon *et al*. (2018) to explain mediation as a "process of supporting another person, team, or community

to solve problems … through continuous feedback". The Auto-Ad facilitates student optimal performance and success through mediation within the social learning environment in engagements with peers, advisors and lecturers.

6. Students' role and enhancing their success at university

The ability of individual students to navigate their learning at university is critical for success. Yang and Li (2020) note that students play a greater role in their success than any other stakeholders. Korobova and Starobin (2015) explain that students contribute to their success through engagement. Students' ability to navigate their learning as major role players can change their educational outcomes.

Support that recognises the student's active agency as an important contributor to success entails drawing on their strengths and their positive attitudes regarding their own success and that of peers. According to Pizzolato and Ozaki (2007: 197), self-authorship can be useful as a lens to explore student success, because it allows for an understanding consistent with the socially constructed nature of knowledge (cognitive), own beliefs, values, and goals (intrapersonal), and the belief of others (interpersonal).

7. Theoretical framework: Self-authorship

Self-authorship enables the use of social, emotional, and cognitive dimensions for understanding students' agency. Citing Magolda (1998), Johnson (2013: 4) defines self-authorship as "the ability to collect, interpret, and analyse information and reflect on one's own beliefs in order to form judgments". Baxter Magolda (2004) further expounds on the cognitive, intrapersonal, and interpersonal dimensions of self-authorship in terms of the stages of its development. Thus, the student's agency in balancing social factors with a strong sense of self-knowledge underpins their positive attitude.

The cognitive, intrapersonal, and interpersonal stages of the development of student self-authorship start first with the cognitive dissonance that occurs as students find themselves beginning to seek acceptance while at the same time trying to balance their own beliefs with societal expectations (Strayhorn, 2014). In the second stage, students begin to develop as the authors of their lives (Pizzolato & Ozaki, 2007), moving away from normative ways of thinking and doing. The last stage involves the acquisition of the internal foundations (Baxter Magolda, 2008) which guide individual actions through an established set of internally derived principles. Self-authorship implies that the student develops a certain agency to act. There is recognition of self, strength, and capability of action. Self-authorship also entails learning to become the author of one's own life, enabling change through the development of a strong internal foundation to guide actions (Baxter Magolda, 2008). Students make informed choices and decisions in relation to academic performance. Hence self-authorship enables the student to navigate their identity, own beliefs, and external influences in the negotiation of their academic success.

It is possible in higher education to use context-relevant support initiatives to enhance the student self-authorship, allowing them to enable the development of a strong internal foundation to guide their actions. At South African universities, with high attrition and low completion rates (Cosser, 2018), support initiatives can be most important means to encourage students to draw on their experiences and strengths to self-motivate engagement (Kinzie & Kuh, 2017), improve performance, and aim for a positive outcome (Soika, 2021).

8. Study site/project background

The study was conducted in the School of Education at a public university in South Africa as a project entitled 'Student academic success: enhancing potential cum laude and summa cum laude students' self-authorship', a sub-project of the main project, "What are the factors that influence student success with the university?"

Khoza (2020) suggests that student poor academic performance and disengagement from programme of study at South African universities is linked to a lack of adequate academic support. However, even where support is available, deficit discourses, diminishing a meaningful focus on students' strengths, still permeate institutionally structured support systems. To improve the students' support experiences and enhance their success, the Auto-Ad predictive (Yang *et al*., 2020) and visualisation analytics features (Ifenthaler & Yau, 2020) include online curriculum mapping, academic progress tracking, and automated advising.

9. Methodology

Online invitations to participate in the study were sent to 842 potential cum laude and summa cum laude undergraduate students in the BEd programme. The students were identified by means of analysis of students' records from the university's Institutional Intelligence and comprised 382 students in their second year of study, 265 in the third year, and 191 in the fourth year. The representative population had completed their first year of study. This means that they would have developed attributes in their learning and would also have understood the nature of success enablers and barriers. Because the population came from differing levels of study and diverse backgrounds, the heterogenous purposive sampling method (Etikan, Musa & Alkassim, 2016) was utilised to select the 200 respondents in the study. This is appropriate for ensuring that participants represent the diverse composition for maximal variation (Creswell & Clark, 2017) and data variability. The data were collected via the Auto-Ad (see Figure 5 below). The questionnaire yielded a response rate of 23.7% of the distributed questionnaire population. The results were analysed using the Auto-Ad (see Figures 6 and 7 below). The Pollster analysis feature of the Auto-Ad was used to correlate the student performance data (student average pass rate, mean) with each of the questionnaire responses. The data analysis is based on the Pearson R coefficient value, where the R-value was calculated between the Extent of Agreement for a given statement and the student CRW. A value closer to 1 or -1 indicates a relatively high correlation between the agreement with a statement and student performance. All information relating to the participant identity was anonymised in compliance with the ethical approval for the study.

10. Data analysis and interpretation of results

10.1 Tracking and advising cum laude trajectory students

In the tracking process, the Auto-Ad enabled four views represented here as Views A-D in Figures 1, 2, 3 and 4 below. The Auto-Ad automated advising view, shown in Figure 4, was embedded within the university Student Central portal. In A, the Specifications View, as Figure 1 shows, a user may specify the criteria for cum laude and summa cum laude, with respect to the broader institution policy as well as the individual programme-specific rules, for example, performance in capstone modules. Once the specification is complete, it becomes possible for the system to determine whether students are on track for a particular class of degree. In the figures below, student names and numbers are encrypted by applying anonymisation hashing in compliance with the privacy of information protocols.

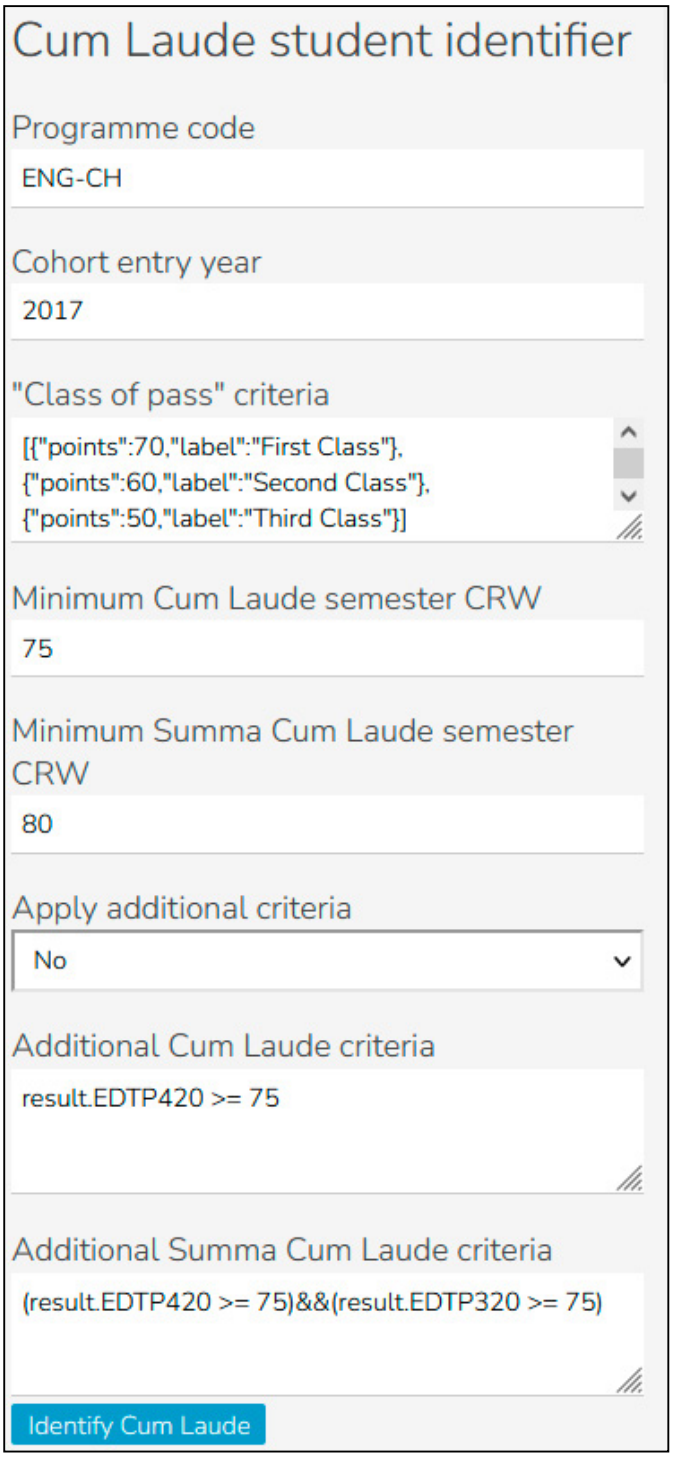

Figure 1: Cum laude specifications View: A

In B, the Cum Laude Identification View, illustrated in Figure 2, the Auto-Ad provides a report that shows the number of students in the categories summa/cum laude/completed/not completed. It also shows each semester's CRW for each student and compliance with cum laude criteria, with specific reasons for the classification. The class of pass is also shown.

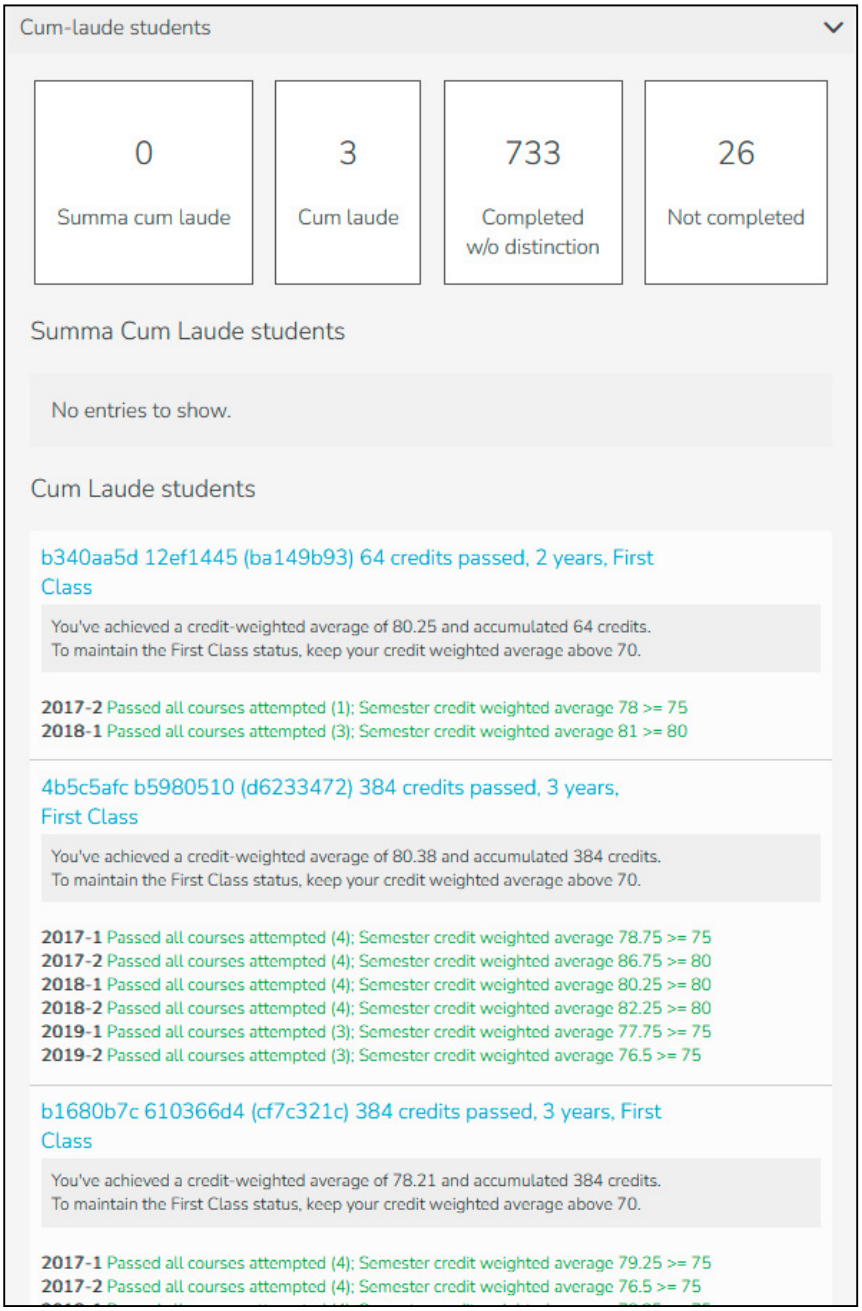

Figure 2: Cum laude identification View: B

In C, the Student Potential View, the Auto-Ad focuses on the class of degree for students who have already missed the cum laude classification. In contrast to the cum laude requirements, the class of degree (e.g. first class, upper second class) can improve when student performance improves. For example, a student who underperforms in an earlier year of study is on track to graduate with a third-class degree; if the student's performance improves in subsequent years, this may improve to second or even first class. The Student Potential View indicates which class of degree the student will currently earn and what CRW should be achieved to attain a better class at the final graduation.

Unfortunately, most students are not aware of their current class of graduation and would not easily calculate what is required to improve on this. By making students aware at each stage of the current status and the requirements for improving, the Auto-Ad motivates them to make stronger efforts.

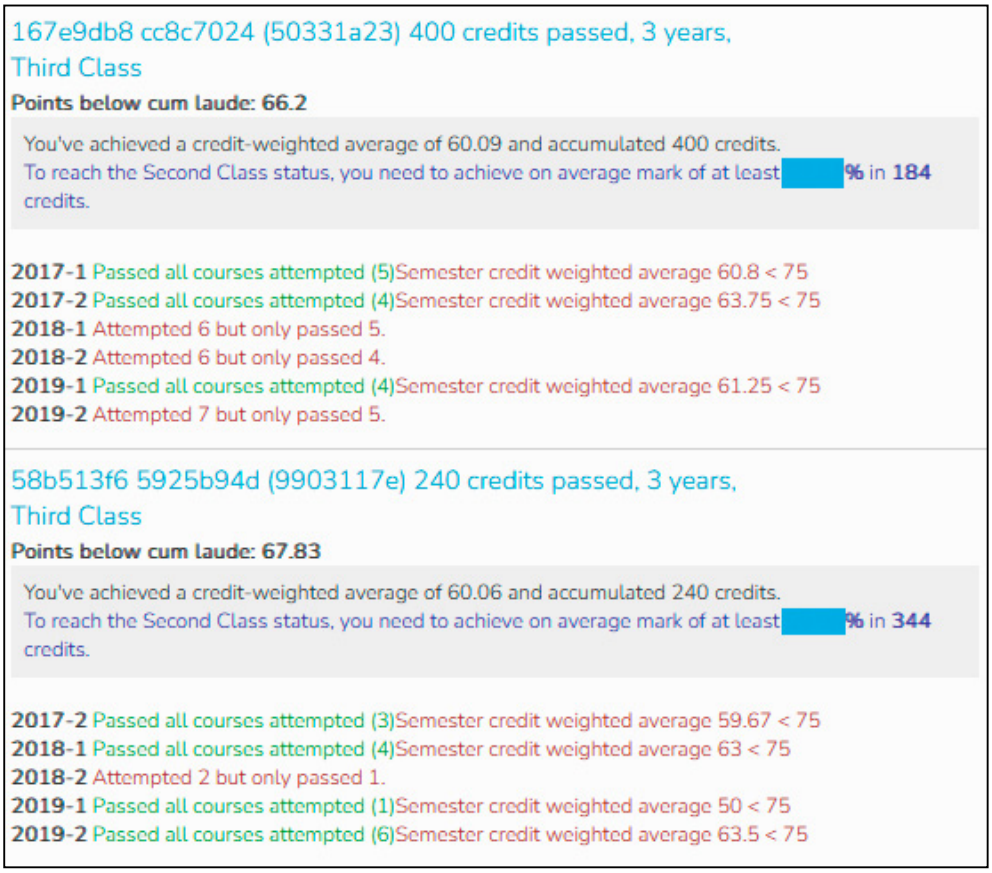

Figure 3: Cum Laude Student Potential View: C

The Student Nudging View (View D) coordinates with the Student Potential View (View C) to give a student more specific advice. Although View C gives broad performance improvement advice, it may not be specific enough to direct student activity. In View D, however, the Auto-Ad calculates the requirement in each of the student's current modules to determine what

performance must be achieved in the remaining assessments. Since certain assessments in the modules in the current semester have already been completed, the remaining assessments will have to earn above a certain minimum level if the student wants to graduate with a higher class of degree. This level will differ from module to module, based on what the student has achieved in the assessments.

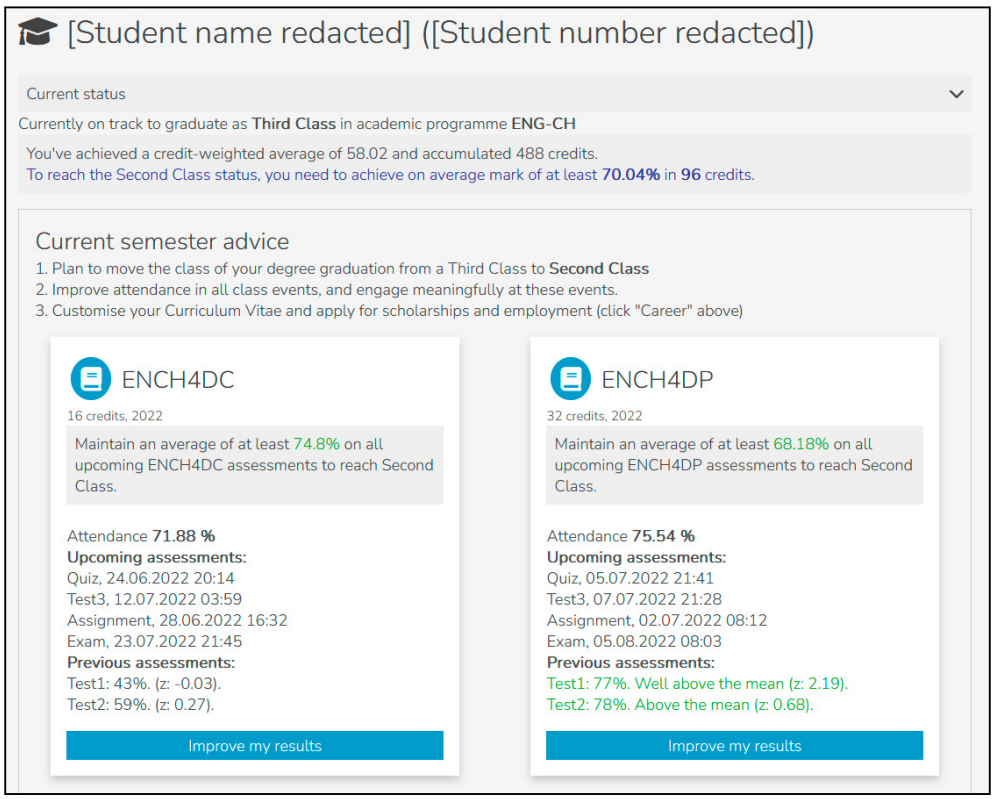

Figure 4: Student Nudging View; View D

The Student Nudging View, as shown in Figure 4 above, gives the student a clearer view of what is needed to achieve a higher class of pass.

To further understand what supports their high performance and success, and with a view to enhancing their performance at full potential, an online survey questionnaire was administered to the students at the end of Semester One of 2022. The questionnaire instrument included close and open-ended questions as Figure 5 below shows (see link to questionnaire: https://modernscholarship.org/CumLaudeQuestionnaire/).

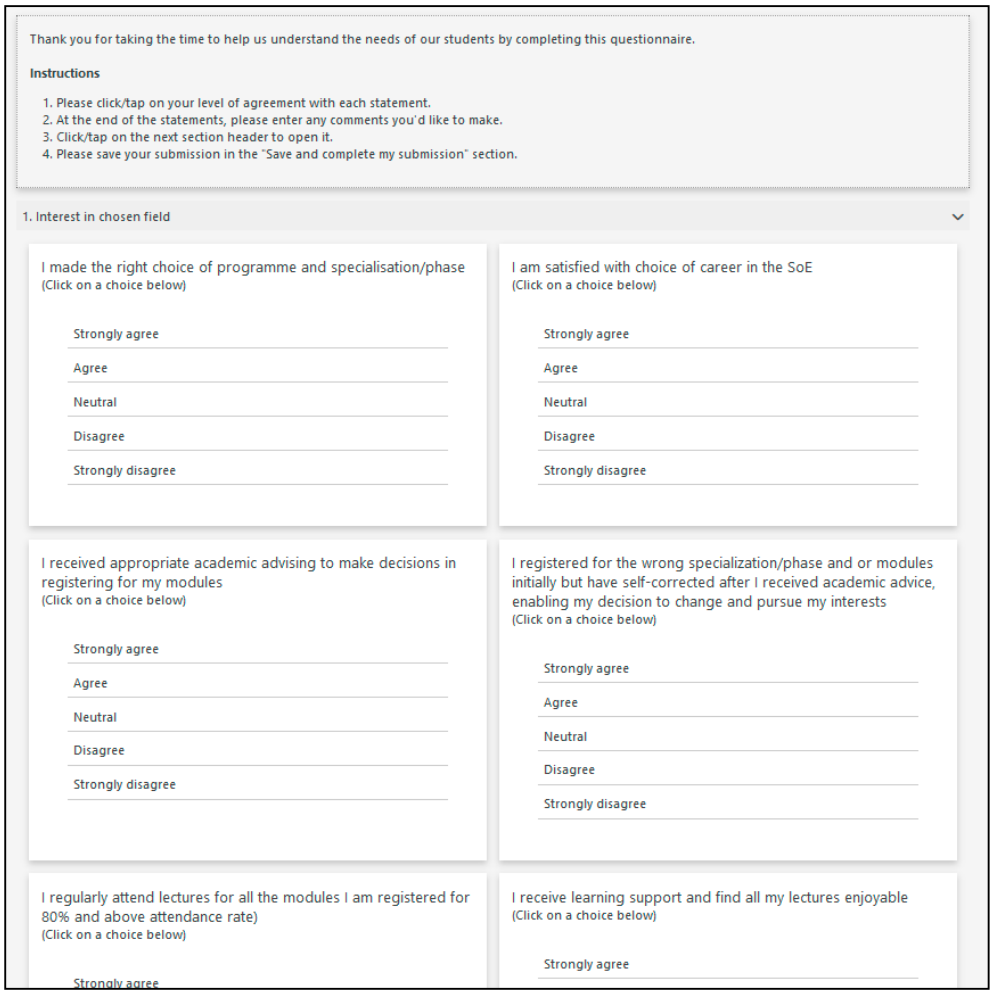

Figure 5: Cum laude and summa cum laude trajectory questionnaire

11. Results and findings

Figure 6 below shows the strongest most positively correlated factors are (a) choice of study and degree of motivation (b) study habits.

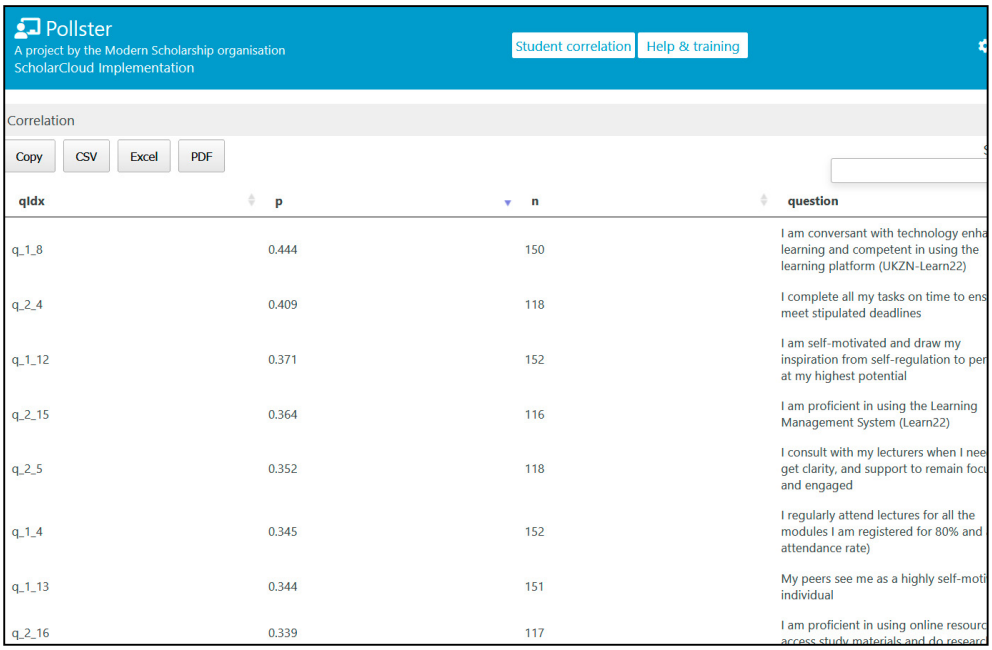

Figure 6: Most positively correlated factors to cum laude and summa cum laude students' high performance and success

The open-ended questions further interrogated the students' responses regarding influencing factors. The most positively correlated comments are presented verbatim in examples shown in Figure 7 below.

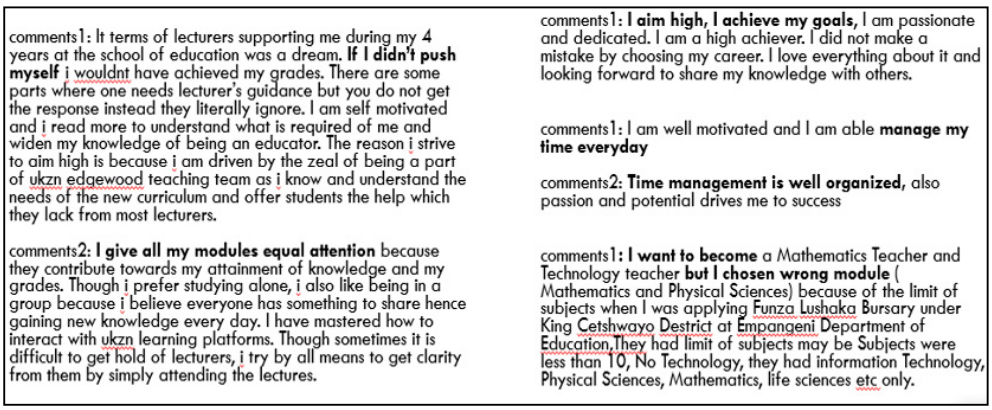

Figure 7: Most positively correlated comments on cum laude and summa cum laude students' high performance and success

As illustrated in Figure 8 below, the strongest most negatively correlated factors are shown as home environment and relationship. What did not appear include (a) institution-related factors, (b) financial stress, (c) involvement in extra-mural activities, and (d) friends.

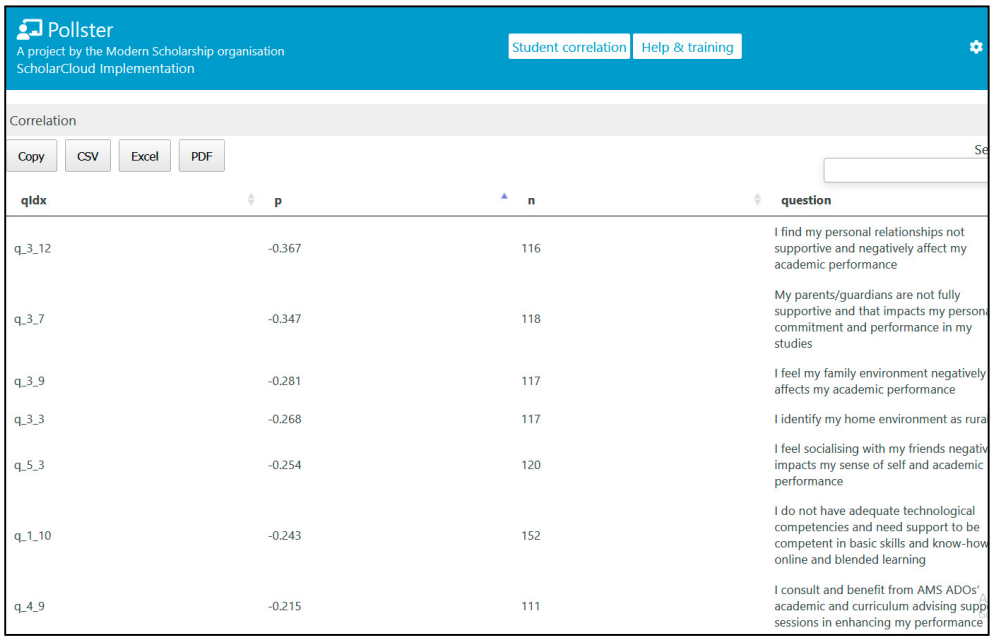

Figure 8: Most negatively correlated factors to cum laude and summa cum laude students' high performance and success

The most negatively correlated comments on cum laude and summa cum laude students' high performance and success are presented verbatim in the examples shown in Figure 9 below.

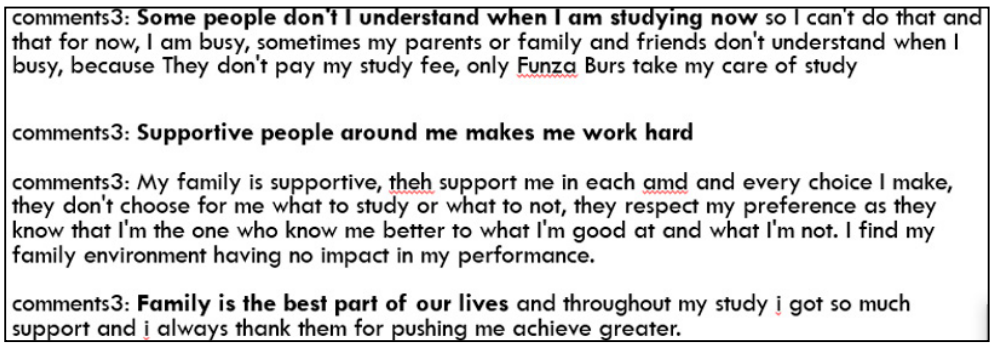

Figure 9: Most negatively correlated comments on cum laude and summa cum laude students' high performance and success

12. Discussion

The narrative comments correlate the students' performance and reflect their experiences in terms of the way in which they tend to see themselves, their role in their learning, and their sense of agency in engaging. In showing agency, the students demonstrated a tendency to self-authoring abilities (Van der Lecq, 2016) and reliance on their own ability to self-regulate (Henderson & Cunningham, 2023) and make important decisions, which the Auto-Ad encourages and reinforces. Drawing on the experiences of the students, as the correlated comments (see Figures 7 and 9 above) show, the assumptions about what they considered as important to high performance and success can be summed up as knowledge, self, and relationship, as Figure 10 below shows.

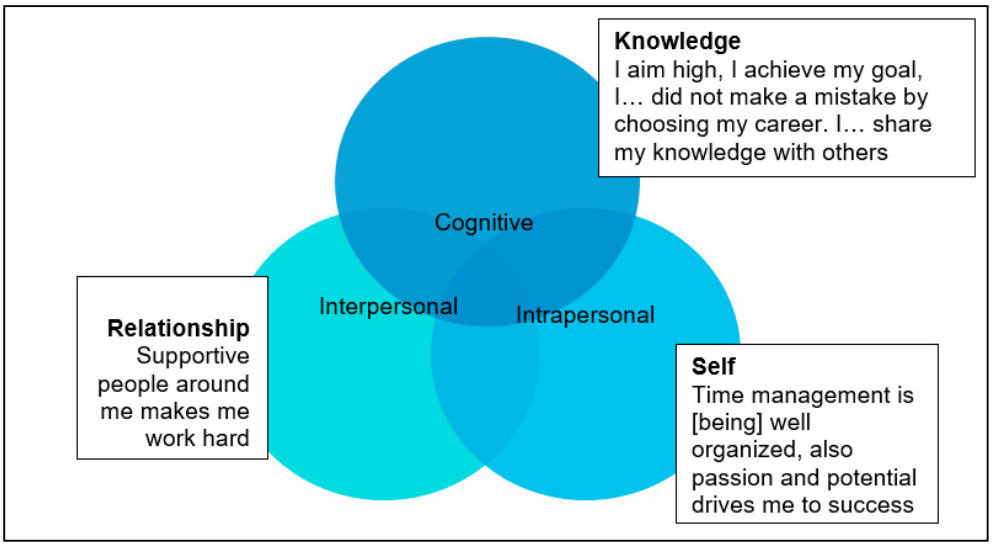

Figure 10: The meld of cognitive, intrapersonal, interpersonal dimensions in high performing students' assumptions of their self-authoring abilities

Luo, Yang and Zuo (2019) aver that students affirm their agency in the ways they self-regulate in mediating their own academic progress. The comments by the students (see Figures 7 and 9) suggest that they have a strong sense of self and self-belief in their ability to self-motivate for high performance. While Mintz (2019) observes that data-informed proactive advising is one of the eight steps institutions must take to improve their students' success, it should also be recognised that students themselves have knowledge of the factors they perceive as affecting their success at university. Students could mediate support experiences on an interactive platform to improve performance. Consolidated support views (see Figures 1-4) could allow students broader interactions in the support experience to develop their role in enhancing their success. In this way, the students optimise their development of the student self-authorship and the associated behavioural competencies (Baxter Magolda, 2008; Perez, 2019) needed for self-directed learning (Olivier & Wentworth, 2021).

The strongest factors influencing the study participants' success were choice of degree, motivation, study habits, family, and relationships. Mondisa and Adams (2022) and Tomlinson and Jackson (2021) affirm the link between high performance and better motivation and

self-authorship. The current study suggests that the high-performing students' sense of self-direction could be reinforced using automated advising. By the provision of timely and useful analytics information with feedback that prompts them to set goals and keep on track, students could be motivated to perform at optimal potential (Ifenthaler & Yau, 2020; Talbi & Ouared, 2022).

13. Reflective statistics can be used for student nudging

The Auto-Ad made it possible to use student data analytics to support students' decision-making in their learning, enabling a view of the performance trajectory each semester for each student, namely the semester CRW and compliance with cum laude criteria. Importantly, it also specified reasons and proffered the advising necessary for each student's success. Advising support staff had access to the automated mediation, resulting in the integration of support experiences.

The Auto-Ad facilitated this in following ways.

1. Cum laude specifications

The Auto-Ad identified students on track to graduate cum laude by facilitating the capture of the class ("Class of pass") that a student was on track to graduate with. Importantly, by evaluating the performance of the students in each semester, it provided each of them with the incentives and advice they needed to make important decisions on their performance.

2. Cum laude student reporting

In typical cum-laude student reports generated by the Auto-Ad, the summary view specified the number of students on track to graduate in the cum laude category. It further specified, for each semester, the reasons for the student still being on track to graduate cum laude or summa cum laude. Furthermore, it showed the student what CRW value was necessary to retain the status of cum laude or summa cum laude.

3. Class of graduation

If the criterion for the cum-laude classification is not achieved in any semester, it is then no longer possible for the student to graduate cum laude. For example, where a CRW of 80% is required for cum laude graduation and, if a CRW of 75% is achieved in any semester, the student cannot graduate cum laude. To counteract potential demotivation in this situation, the Auto-Ad reported on the student's potential to increase the class of pass. For instance, when the overall CRW is used to calculate the "class of pass", a student may be able to raise this in subsequent semesters (see Figure 2 above). This information was provided in addition to the anticipated class of pass at graduation. It is evident in Figure 4 above that, while the student was on track to graduate with just a third-class pass, a better class could be achieved by increasing the outcomes in the remaining credits.

The Auto-Ad not only indicated the CRW needed for the remaining credits, but also considered the modules the student was currently enrolled in and the exams already passed in those modules. It then determined the outcomes necessary for the forthcoming exams to obtain the CRW required for a higher class. A link labelled "Improve my results" was integrated into the user interface to allow students to assess their own performance, identify their own reasons for underperformance, and take action to improve their performance either by working with academic advisors or other student support services or by engaging in

self-directed learning. The examiners for the entire academic programme could access this report. Students could also access a report of this sort via the Student Central section of the Auto-Ad (see Figure 5).

4. Integration

The Auto-Ad supported integration with student results, using its poll method to integrate with student records. It also allowed the use of questionnaire response mapping to compute the student pass rate, mean and standard deviation in order to correlate the questionnaire response against the mean. By enabling a prompt clearer understanding of the student performance trend for student and staff, the Auto-Ad proved useful to the academic support mechanism. It is significant that even basic reflective statistics can be used for nudging students in ways that validate their performance and indicate their full potential.

14. Implications of the study

Furthermore, in contrast to being fixated on underperformance, the Auto-Ad-mediated student academic support process opens up the student to the potential they can draw on to make a change. It supports the student to develop as self-directed learner (Tekkol & Demirel, 2018; Van der Lecq, 2016), improve performance and achieve positive outcomes through engaging (Soika, 2021).

We recommend scaling up the project to a university-wide intervention involving students in other programmes and from other colleges. Given the higher education inequalities in South Africa (Wilson-Strydom, 2017) that affect access to success capacities, we also recommend the development of a corpus of studies on how students at other South African universities invest in their personal capacities, draw on their strengths to motivate performance.

15. Limitations of the study

Limitations include the study design, which originally focused on cum laude and summa cum laude trajectory students. This flaw was mitigated as the project evolved and a way was developed also to motivate those students who had already fallen out of this bracket. Another limitation could be the assumption that all students have the competencies necessary to use technology-mediated learning support systems. Scholars, including Reddy Moonasamy and Naidoo (2022) and Nnadozie *et al.* (2020), highlight the challenges in using technology to support learning at South African universities.

16. Conclusion

This study demonstrated a way of academic advising at South African universities to make undergraduate students aware of their current graduation class and specifically how to improve it. The Auto-Ad analytics increase students' awareness of the potential to improve their performance by means of encouraging self-reflection on barriers and gaps and the advising to boost their CRW. Self-mediated academic support experiences in this context can position students to develop self-authorship (Baxter Magolda, 1998) in asserting responsibility for and, importantly, self-directing their learning (Olivier & Wentworth, 2021). The students can optimise their development of self-authorship and the associated behavioural competencies (Baxter Magolda, 2008; Perez, 2019) to improve engagement and positive outcomes (Soika, 2021).

The findings affirm Ifenthaler's (2020) assertion that data analytics contribute towards successful learning. While there is a need for caution in implementing interventions based on evidence drawn from data analytics (Larrabee Sønderlund *et al.*, 2019), the researchers believe that institutional student academic support mechanisms cannot draw from notional premises either. Academic support systems need to leverage what Van der Lecq (2016: 84), citing Baxter Magolda and King (2004), described as learning to dance in the "space between guidance and empowerment", to champion strategies that position students in strength and to enhance their success at university.

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