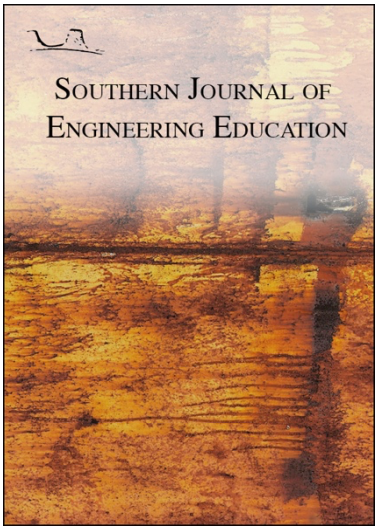

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Refinement of the Student Success Reflection (SSR) module: enhancing academic support through informed interventions

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Refinement of the Student Success Reflection (SSR) module: enhancing academic support through informed interventions

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This paper explores the strategic refinement of the Student Success Reflection (SSR) module and its impact on at-risk students in the Faculty of Engineering, Built Environment, and Information Technology at the University of Pretoria. Following a 2023 pilot, the module was refined in 2024 based on a root cause analysis questionnaire to address foundational academic challenges faced by students at risk of academic exclusion. The SSR module, with its mandatory participation, provides structured support to students struggling with foundational courses, particularly calculus. The study examines how this strategic intervention through academic advisory frameworks addresses key themes related to academic resilience, such as time management, university workload adjustment, and escalating mental health challenges. The refined SSR module contributes to improved student success by promoting a culture of support, offering practical resources, and encouraging student engagement with academic advisory services.

Keywords: Academic resilience; academic advising; holistic support strategies; self-regulation in education; student well-being

Introduction

This research was conducted at a leading university in South Africa, where the challenges of supporting at-risk students are becoming increasingly complex. In engineering disciplines, the transition to higher education is particularly tough due to the socio-economic disparities in the Global South (De Klerk, 2021; Tiroyabone & Strydom, 2021). Although South Africa is classified as an upper-middle income country (World Bank, 2018), its high levels of inequality, reflected in its Gini coefficient (OECD, n.d.), intensify the educational barriers many students face, underscoring the need for tailored interventions.

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These students, particularly those struggling with foundational courses such as calculus, face significant barriers to academic progression and success. Five Faculty of Engineering, Built Environment, and Information Technology (EBIT) academic advisors, known as Academic Success Coaches (ASCs) at the University of Pretoria (UP), recognising these challenges, developed a mandatory online Student Success Reflection (SSR) module to provide structured support for such students. The SSR module, piloted in 2023, encompasses a range of topics essential for student success, including time management, study techniques, test-taking skills, mental well-being, and resilience training. Delivered through user-friendly, video-based content, this module seeks to address the specific needs of at-risk students in a comprehensive manner.

The need for targeted academic interventions is especially acute in South Africa, where socio-economic disparities contribute to educational risks (Auerbach et al., 2018; Bailey & Phillips, 2016). The COVID-19 pandemic exacerbated these disparities, causing significant disruptions to traditional classroom-based learning (Doe, 2021). As a result, academic advising has become a critical component in enhancing student success, with a notable shift towards mandatory participation in intervention programmes as a strategy to engage at-risk students more effectively.

Literature review

In the evolving landscape of higher education, especially within the Global South, out-of-class learning experiences have become increasingly critical in shaping the academic journey of students. A socio-ecological perspective, guided by Bronfenbrenner's ecological systems theory, provides a useful framework for understanding the complex interplay between individual, relational, and environmental factors that influence students' educational experiences (Mapaling, 2023). This perspective aligns with the multifaceted nature of student development and underscores the importance of examining out-of-class learning from a holistic angle. The framework considers multiple levels of influence – micro-, meso-, exo-, and macrosystems – that impact student outcomes, suggesting that interventions should be equally comprehensive.

Strategic resource allocation, professional development, and policy formulation are crucial components for supporting educational initiatives that focus on out-of-class learning. Global studies emphasise the significance of merging conceptual frameworks with practical applications

to foster effective out-of-class learning experiences (Troxel, 2019). Institutional support and recognition are fundamental for these initiatives to thrive. Universities must create environments that not only value out-of-class learning but also integrate it into the broader educational ecosystem to foster a more comprehensive approach to student development (Tiroyabone & Strydom, 2021). This comprehensive approach aims to enhance academic success while contributing to the personal and social development of students, promoting a more equitable and accessible higher education system (Van Der Merwe & Maharaj, 2018).

Additionally, the integration of psychosocial and mental health challenges into the discussion of student success reveals the intricate relationships between internal psychological states, behavioural responses, and the broader social environment (Martikainen et al., 2002; D'Andrea & Heckman, 2008; Patel et al., 2007). Addressing these concerns in higher education involves tackling issues such as academic and enrolment planning, quality assurance, and funding, which have been persistent challenges (StatsSA, 2019). Despite numerous strategic plans and interventions, high student drop-out rates, low completion rates, and limited participation in class activities remain significant hurdles.

The Department of Higher Education and Training (DHET) in South Africa has outlined key medium-term outcomes to address these challenges, including expanded access to post-school education, improved success and efficiency of the system, and enhanced quality of provision (DHET, 2020). However, South African universities continue to face the problem of managing high enrolment rates while also retaining and graduating these large numbers of students (Tiroyabone & Strydom, 2021). Although various funding schemes are intended to increase access to university, graduation rates remain low. According to Statistics South Africa (2019), only 29% of undergraduate degree students who enrolled in 2011 graduated within the required period, and another 29% took between four and six years to complete. This indicates that more than 40% of students either drop out or are still trying to complete their studies after six years.

This broader perspective, informed by a detailed exploration of student psychosocial experiences, highlights the need for educational institutions to adopt holistic support strategies that address both academic and psychosocial challenges to improve student success and well-being. An effective support framework requires a combination of academic advising, mentorship, and

psychosocial interventions tailored to the diverse needs of students. This holistic approach aims to create a conducive learning environment that promotes both academic achievement and personal growth, ultimately contributing to a more equitable and accessible higher education system.

Sample and data collection

On 1 February 2023, there were 1514 first-time first-year EBIT students registered at the university. This initial cohort forms the basis of our study, providing a comprehensive representation of the demographic and academic dynamics within the faculty. As of 1 March 2024, following the processing of all appeals, the status of these students was categorised as follows: 961 were active, 129 had been readmitted, 89 transferred to other institutions, 199 were dismissed, and 136 discontinued their studies. Consequently, the overall throughput rate for this cohort is calculated at 78%. This figure represents the portion of the sample population that either continued their education or successfully completed the first year of their programme, providing a baseline for our study's demographic analysis.

Data collection was executed via an online root cause analysis (RCA) questionnaire disseminated to these first-year engineering students at the University of Pretoria. The survey targeted students who had sought academic advising due to academic exclusion, defined as failing to pass 70% of their credits. Featuring open-ended queries, the survey aimed to garner detailed perspectives on out-of-class factors affecting academic resilience. Utilising a digital platform allowed for extensive participation, with 300 students approached and 137 completing the questionnaire. This method ensured a varied collection of student experiences and enhanced the study's depth and breadth of understanding, providing a representative sample of the population in question.

Ethical considerations

Ethical clearance was obtained from the institutional review board to ensure compliance with ethical standards. Participants provided informed consent, were briefed on the research objectives, and assured of confidentiality, anonymity, and the right to withdraw without consequence. Data

security was a priority, with access to survey data restricted to the research team, ensuring participant privacy (Resnik, 2011).

Results

The RCA questionnaire provided a detailed understanding of the factors shaping academic resilience among first-year engineering students at the University of Pretoria. Through thematic analysis, responses were examined and coded to identify key ideas, which were then organised into overarching themes that highlight the challenges students face, particularly within the Global South context. These themes reveal the complex interplay of academic, personal, and social factors that impact student success. The findings underscore the need for targeted interventions to address these challenges and enhance academic resilience. By addressing these interconnected issues, universities can implement more effective strategies to support student achievement and well-being.

Theme 1: mastering time management in higher education

Time management emerged as a predominant theme, with students frequently struggling to organise and utilise their time effectively. University-level learning, particularly within engineering disciplines, demands a high degree of autonomy, and students often face difficulties adjusting to this self-directed environment. The findings highlight that organisational skills and self-regulation significantly influence academic performance. The need for enhanced time management strategies became evident, especially as students transition from the more structured learning environment of secondary school to the autonomy of university life.

Subtheme 1.1: organisational skills for advanced time management.

A significant gap in students' organisational abilities was revealed as a prominent challenge. Many struggled with effectively prioritising their academic responsibilities, following study schedules, and managing the balance between coursework and social activities. This inability to plan and organise efficiently often resulted in poor study habits and heightened stress levels. These findings highlight the critical need for structured time management workshops and support systems that

can equip students with the necessary skills to thrive in the more self-directed learning environment of university life. This is shown by the following quotes:

> I find it really hard to stay on top of all my assignments. In high school, we had a set schedule, but now I'm responsible for planning everything, and it's overwhelming.

> I create study timetables, but sticking to them is a whole different story. Things come up, and I always fall behind.

Subtheme 1.2: developing self-discipline for effective time management.

Self-discipline, or the ability to manage one's actions to achieve goals, emerged as a key concern. Many students pointed to procrastination and low motivation as major barriers to effective time management, making it difficult to stay focused and maintain discipline, which in turn affected their academic performance. The independence of university life often exacerbates these issues, as students struggle to balance academic responsibilities with social activities without the structured guidance of school. Practical interventions, such as goal-setting and self-regulation training, could help students reduce procrastination and stay motivated. Research by Zimmerman & Moylan (2009) highlights the role of self-regulation in academic success, suggesting that targeted strategies could improve students' ability to manage their workloads effectively. This is illustrated by the following quotes:

> University life is so different from school. There's no one checking up on me, and I need to manage my own time.

> I get distracted so easily. I'll sit down to study, but then I end up scrolling through my phone for hours.

> Some days, I just don't feel motivated to study at all.

Theme 2. Unpreparedness of university workload adjustments

Many students expressed a sense of unpreparedness when faced with the academic workload and social integration challenges at university. This theme emphasises the steep learning curve students encounter as they transition from the structured environment of high school to the more demanding and independent nature of higher education. This adjustment is especially difficult for students

from socio-economically disadvantaged backgrounds, who may lack prior exposure to the rigours of tertiary education.

Subtheme 2.1: academic skills for successful university transition.

Adapting to the academic demands of university is a significant hurdle for many students. The shift from high school, where guidance and structure are more prevalent, to the autonomy required in higher education, often leaves students feeling overwhelmed. Many reported struggling with the increased workload and the higher academic expectations, particularly within rigorous programmes such as engineering. This lack of preparedness resulted in difficulties managing time, understanding course content, and maintaining academic performance. This is illustrated by the following quotes:

> The workload in university is so much more intense than in high school. I didn't expect it to be this overwhelming.

> I knew engineering would be challenging, but the level of work is insane.

Subtheme 2.2: social skills for successful university integration.

Alongside academic challenges, students also reported difficulties with social integration. This was especially true for those not living in university accommodation, who found it harder to connect with peers and engage in campus life. Many felt isolated or hesitant to approach new people, making it difficult to form support networks. These challenges highlight the importance of social skills in navigating university life and the need for universities to offer programmes like peer mentoring and social events to help students integrate into the academic community.

> I don't live on campus, and I'm too scared to approach new people, so I haven't made many friends in class.

> I feel isolated most of the time.

These subthemes reveal the dual challenge of adapting to both academic and social demands in university, underscoring the need for targeted support in both areas to ease students' transition and promote success.

Theme 3: escalating mental health issues and their effect on academic success

The data highlighted a strong connection between academic pressure and declining mental health. Many students reported that the stress of meeting academic expectations contributed to heightened anxiety and depression, which in turn made it difficult to concentrate and stay on top of their coursework. This vicious cycle between poor mental health and academic performance underscores the need for universities to adopt a holistic approach, integrating mental health interventions with academic support services. This is illustrated by the following student quotes:

> The pressure to keep up with my studies is rough. When I get a bad mark all I can think about is how I am going to disappoint my family.

> I've been struggling with stress and depression because of my workload. It feels like no matter how hard I try, I'm always falling behind.

Implementation and enhancement of the SSR module

The SSR module's design targeted at-risk students to mitigate academic exclusion. The module's mandatory nature ensured consistent engagement, particularly among those who might not voluntarily seek help. Following the RCA findings, the 2024 curriculum was adapted to address pressing challenges, including enhanced time management strategies and support for mental well-being.

To illustrate the practical application of these enhancements, the module incorporated a series of videos showcasing its activities and interactive content, designed to engage and motivate students. This strategy aimed to demonstrate the tangible benefits of the module's offerings, fostering student involvement.

Discussion and recommendations

The adaptation of the SSR module's curriculum represents a strategic approach to addressing the root causes of academic exclusion. By focusing on the predominant factors identified through RCA, the module is better positioned to support at-risk students in a challenging educational environment. This approach contributes to improved academic outcomes and student well-being.

Despite various student interventions in higher education, a gap persists between these interventions and students' actual needs. RCA can bridge this gap by revealing common challenges, such as the need for better organisational skills and self-regulation capabilities. Additionally, barriers to academic success include the reluctance to seek help due to a "misplaced sense of self-reliance" (Ryan et al., 2001). To address these challenges, several tailored recommendations are proposed.

To support students more effectively, it is essential to refine existing programmes and implement new strategies that address both academic and mental health needs holistically.

Refine time management workshops. Time management workshops should place greater emphasis on enhancing organisational skills, focusing specifically on cognitive and behavioural strategies for self-regulation. By equipping students with practical tools to prioritise tasks, adhere to schedules, and manage distractions, these workshops can empower students to take control of their academic responsibilities more effectively.

Expand and diversify mental health support. A comprehensive approach to mental health support is critical. Universities should collaborate with their counselling units to broaden and diversify the services available to students. This can be achieved through targeted workshops on stress management, coping skills, and mindfulness, as well as the development of peer support groups that foster shared experiences and offer emotional support. Additionally, reducing the stigma surrounding mental health is essential. Universities must actively engage in awareness campaigns and educational initiatives that normalise help-seeking behaviours, ensuring students feel comfortable accessing services without fear of judgement. Creating an inclusive, supportive campus environment will not only enhance students' mental well-being but also contribute to their overall academic success.

Promote social integration through structured learning communities. To combat feelings of isolation, especially among students not residing on campus, universities should implement structured learning communities that foster social integration. These programmes can provide a sense of belonging, encouraging students to build connections, participate in collaborative learning, and form peer support networks. This focus on social integration will help students feel more connected to the university community, promoting both personal and academic growth.

By addressing time management, mental health, and social integration in a coordinated manner, these recommendations aim to create a more supportive and resilient learning environment for students.

Conclusion

The strategic refinement of the Student Success Reflection (SSR) module represents a pivotal advancement in supporting at-risk students in the Faculty of Engineering, Built Environment, and Information Technology at the University of Pretoria. The SSR module's compulsory participation, following RCA and other data-driven approaches, has proven effective in addressing the root causes of academic struggles. This focused approach has provided students with the necessary tools to overcome challenges and improve academic resilience.

The evolution of this module, from its pilot phase in 2023 to the refined 2024 curriculum, underscores the potential of strategic academic interventions in higher education. By incorporating comprehensive topics such as time management, study techniques, test-taking skills, mental well-being, and resilience, the SSR module engages at-risk students in a meaningful way, fostering both academic and personal growth.

Despite this progress, higher education still faces a gap between intervention efforts and the actual needs of students. RCA has been instrumental in identifying common challenges, particularly those related to organisational skills and self-regulation capabilities. Additionally, the reluctance to seek help due to a 'misplaced sense of self-reliance' remains a barrier to academic success (Ryan et al., 2001). The SSR module addresses these issues by promoting a culture of support and providing practical resources that encourage students to engage with academic advisory services.

The recommendations outlined in this paper aim to further enhance student success. These include refining time management workshops, expanding mental health support, and developing structured learning communities to combat feelings of isolation. By implementing these strategies, universities can create a more inclusive and supportive educational environment.

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