



JIPTEK: Jurnal Ilmiah Pendidikan Teknik dan Kejuruan

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Why Students Fail, And How They Can Succeed – A Case Study Focusing On Repeating Students In A Module On Technology Management

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ABSTRACT

Students in higher education are allowed to exceed the allotted time of a given qualification by a set value as stipulated by an institution. This accounts for repetition where a student may fail a compulsory subject or module and must then re-register for it during the following semester or calendar year. The purpose of this article is to explore why electrical engineering students failed a compulsory second-year module in a BEngTech qualification, and what contributed to their academic success during their second (or even fourth) attempt. An exploratory case study is used focusing on a single module, called Technology Management III, offered at the Central University of Technology, Free State in South Africa. The results indicate that in 2024, one student was repeating the module for the fourth time, while 21 students were attempting it for a second time. A semi-structured interview was used which focused on three specific questions. Firstly, many of the students indicated that they had originally failed the module because they did not attend class or had faced personal challenges or did not understand how to answer the theory-based questions. Secondly, many students then noted that their current success could be attributed to dedicating more time to the module, attending class and joining a study group. Finally, many students provided the following advice to future students: Attend, participate and take notes in class and then dedicate time to the module through self-reflection. It is recommended to share the results of this study with future students as part of vital academic student support.

Keywords: repeaters, senior students, academic success,

JIPTEK: Jurnal Ilmiah Pendidikan Teknik dan Kejuruan
Vol 18 Issue 2 2025
DOI: <https://doi.org/10.20961/jiptek.v18i2.98945>
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INTRODUCTION

“Twice and thrice over, as they say, good is it to repeat and review what is good” (Brainy Quote, 2025). These words, by a Greek philosopher of the 4th century BC, well sum up the importance of repetition. Repetition, or regular revision, of

important theoretical concepts is good as it can help students to improve their memory. On the other hand, if students fail a course or module, then they would need to repeat it at a later stage, which is not beneficial as it incurs extra costs and delays graduation. Students who repeat courses experience loss of anticipated income, and additional expenses associated with extending their time at a university (Lewis, 2024), which includes extra tuition and accommodation fees.

The maximum time (which usually does not exceed 150% of the course length) allowed for students to complete a course at satisfactory progress is often stated as a requirement in higher education (Robb, 2024). For example, students are allowed to take up to 4.5 years to complete a 3-year qualification, which accounts for module repetition.

Repeating students are required to retake only the module they failed (Souza & Bittencourt, 2021), and not repeat all the modules from a given semester. Studies have focused on interventions that can help students to complete their studies within the allotted time, thereby mitigating the need for repetition and for paying extra tuition and accommodation fees. For example, Swart (2024) advocated the need of consistent and early engagement by students in engineering to enable academic success within the allotted time. Learning that is creative and fun can also help students to succeed in learning (Mubarak et al., 2024) while support services organized by lecturers or administrators are also important interventions (e.g. tutoring and mentoring) (Brück-Hübner & Nierste, 2024).

Research has noted that anecdotal evidence exists that lecturers often do not know who their repeating students are and that these students do not receive additional support (Snead, Walker, & Loch, 2022). This support may include sharing the lived experiences of students who previously repeated a module. These student voices can offer practical advice as to what to avoid and what to embrace in the pursuit of academic success. Student voices are powerful because they are authentic (Pack, 2021), as they represent the lived stories of real

students who experienced the ups and downs of a given module or semester.

The purpose of this article is to explore why electrical engineering students failed a compulsory second-year module in a BEngTech qualification, and what contributed to their academic success during their second (or even fourth) attempt. Incorporating student voices into the dialogue on how to mitigate repetition is a contribution to the current literature. The article firstly reviews the impact of repeating students and then provides the context for this study. The methodology, results and conclusions follow.

THE IMPACT OF REPEATING STUDENTS

Repeating students can have an impact on a number of factors, including logistics, university funding, family income and self-development.

Repetition raises the number of students in the class, impacts the number of students who would have been admitted, and calls for the need to increase resources available for the class (Adeleke & Emunemu, 2024). The space in a classroom taken by a repeating student could be filled by a new student who may now be denied entry into a given qualification. This relates to logistics.

Universities in South Africa receive funding from government based on an outcome-based funding (OBF) model, which is also called a block grant (Segooa & Kalema, 2024). In the South African perspective, OBF focuses on four priority areas, namely, teaching input, which is linked to enrolments the university makes each

year; teaching output, which is linked to the graduation of students; research output, which is linked to publications and doctoral qualifications; as well as the institutional factor, which is linked to full-time enrolments of disadvantaged students. The teaching output grant depends on the graduation of students within the allotted time for a given qualification. Repeating students who take longer to complete the qualification reduce the potential teaching output grant. For example, if 100 students enroll for a 4-year degree and only 50 students complete it within 4 years, then only 50% of the potential teaching output grant will be awarded to the university.

Repeating students take a longer time to enter the workforce, which may impact on the quality of their life and that of their family who may depend on them as future breadwinners. One's employment status can impact family income (Farid et al., 2023) and if there is no employment then the impact will be greater.

Repeating students may be academically weaker and that might increase their inaccuracy (Guest & Riegler, 2022). Furthermore, there is a high possibility of repeating students developing poor self-concept (Erhun, Jegede, & Ojelabi, 2022). The impact of repeating students is almost always negative, with no real positive effects that come therefrom. These negative effects are especially linked to compulsory modules which all students need to pass if they are to graduate.

STUDY CONTEXT

The study context is limited to a compulsory second year module, called

Technology Management III, which forms part of a 3-year BEngTech degree in Electrical Engineering. This degree is an NQF (National Qualifications Framework) Level 7 qualification that requires students to obtain a minimum of 360 credits (equates to 3600 notional hours over three years). Approximately 150 undergraduate students register for this 14-credit module during the second semester of a calendar year (July through October). The syllabus covers seven specific units focussing on innovation strategies, entrepreneurship, ergonomics and four types of management (quality, operations, human resource, and project).

The module features five compulsory online self-assessments that cover the first five units and contribute 25% to the course mark of the students. Course content is delivered using face-to-face lectures featuring PPT presentations and active learning sessions involving case studies. These focus on true life stories of entrepreneurs, human resource departments and quality and operations managers. Lessons learned from these case studies include recipes for success and practices that can lead to disaster.

Five compulsory practical assignments need to be completed by a student which focus on two main graduate attributes, being Engineering Professionalism and Engineering Management (A. J. Swart, 2023). Students have to score a minimum of 50% for each attribute to gain access to the final examination at the end of the semester. These five assignments contribute 35% to the course mark of a student.

The main assessment (40% contribution to the course mark) is usually scheduled during week 9 of the 13-week semester, with the final

examination planned during weeks 15-18. The final grade of the students is calculated using 50% of the examination mark and 50% of the course mark. Students need to obtain at least 50% for their final grade to successfully complete this module.

RESEARCH METHODS

Exploratory case studies are ideal when the research seeks to answer “how” or “why” questions in a real-world context where the boundaries between the phenomenon and its context may be blurred (Creswell & Poth, 2016). In this study, the real-world context is students registered for Technology Management III, and the phenomenon relates to students who fail this module. The study seeks to understand why some students failed the module and how they eventually succeeded in passing it.

A semi-structured interview was used that allows for a free flow of conversation which is well suited for exploring perceptions and opinions of interviewees, especially for complex or sometimes sensitive topics (Rivas, 2021). Failing a module is a sensitive topic, which may cause embarrassment to some and anxiety to others. Discussing it openly can prove challenging, especially when perceptions as to why it happened are sought. However, in this case, all the repeating students successfully passed the module, which was mentioned by the researcher at the outset of the interview. This helped to relieve anxiety and put the students at ease.

35 students were invited to the office of the researcher a few days after they had completed their final examination. Separate

invitations were sent to each student using the “messaging” tool in Blackboard™ ULTRA, the learning management system of the University (A.J. Swart, 2015). 29 students honored the invitation, with 1 student declining participation. Informed and voluntary consent was obtained from the remaining 28 students. This requires clear communication about what data is being collected and how it is being used (Petik, 2024). Students were informed at the outset that they were invited to the office as they may be repeating the module and that the researcher was seeking to understand why they initially failed it and how they succeeded in eventually passing it. The gathered data would be combined into a single narrative that could be shared with future students to enable them to learn from the past experiences of students, and thus not to repeat the same mistakes. The students then confirmed that they were repeating the module and consented to being asked three questions. No personal student details or information was captured and therefore required no special ethical clearance.

Thematic analysis was used to synthesize findings from the data. Repeating thoughts are categorized along with the number of students who noted them.

RESULTS OF RESEARCH AND DISCUSSION

Figure 1 shows the number of repeating students who attended the interview in 2024 along with the number of times that they attempted the module. Six (6) students were busy with their third attempt, while one student was doing the module for the fourth time.

Table 1 presents a breakdown of the responses as to why students may have failed the module on their first attempt. The total sum of these responses equals 37, as some of the students noted more than one reason during their interview. The two dominating factors were “personal challenges” and “not attending class”.

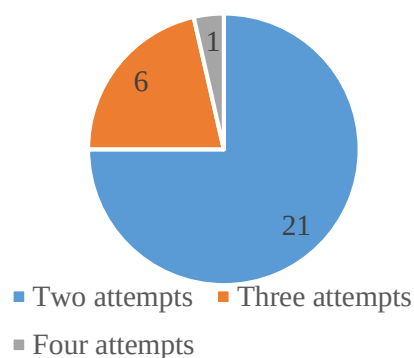


Figure 1. Number of repeaters in 2024 who participated in this study

Table 1. Responses as to why students may have failed previously

Responses	Number of students noting this
No support network	1
The workload was too heavy	2
Crammed at the last minute	4
No reviews done	4
Low course mark	4
Did not understand how to answer the questions	6
Personal challenges	8
Did not attend class	8

Individual students face personal challenges with illness or a family situation that sometimes makes it difficult for them to come to campus for their courses (Heath & Shine, 2021). The personal challenges faced by these students could therefore have a knock-on effect in that it prevented them from attending class. A double

blow therefore exists, which seriously impacts on the academic success of these students.

Six (6) students noted that they did not know how to answer the questions in the final examination. This links back to not attending class, where the lecturer prepared the students on how to answer specific questions. This module uses many case studies, which require reading and comprehension, to teach important principles and lessons relating to various forms of management. The simple recall of facts is not promoted, but rather the use of facts to draw conclusions about a specific case. Students therefore need to substantiate or provide reasons for a given answer by citing specific words or terms from the case study which links to specific facts connected to the type of management being considered. Most students struggle to answer questions that require higher-order thinking skills (Fitriani & Kirana, 2022), that involve verbs such as substantiate, judge, evaluate or conclude.

Cramming is a common result of procrastination; this is when students devote the bulk of their time to studying right before a due date, rather than spreading it out over the course of the semester (Pacursa & Alip, 2023). This was noted by four students, which remains an ineffective method of learning. Again, higher-order thinking questions are asked in the module, which requires advanced preparation and self-reflection which does not come with cramming sessions. No reviews, or self-reflection, of the course content was noted by four students, as well as the fact that some had a low course mark. Consistent engagement by means of reflection with the course content over an extended period

of time has been shown to improve the academic success of engineering students (A. J. Swart, 2024)

The least noted responses relate to a heavy workload and having no support network. This is noteworthy, as the third most noted reason for eventually achieving success relates to joining a study group (see Table 2). Emotional support is a key benefit in joining a study group as it creates an avenue for emotional balance for academic success and social networking (Boateng, Attiogbe, & Kunbour, 2022). This is especially needed when facing higher-order questions that require students to think for themselves. Sharing ideas in a group helps to facilitate thinking and exposes students to the thought processes of others that can help one to correctly construct one's own thinking.

Table 2 highlights two other key reasons, noted by the students during their interview, that may have led to their academic success during their second (or fourth) attempt. Dedicating more time to the module, as opposed to cramming, and attending class regularly were the top two reasons given by the repeating students which may have helped them to succeed this time round. Class attendance remains a vital component for assessing students' participation (or engagement) in the learning process (Lasisi et al., 2021), while consistent engagement over an extended period of time can lead to academic success (A. J. Swart, 2024).

The sum of these responses equals 28, which equals the number of students who attended the interview. Each student therefore provided one key response or reason for their current academic success.

Table 2. Responses as to why students may have successfully completed the module

Responses	Number of students noting this
Did more reviews	1
Joined a study group	6
Attended class regularly	8
Dedicated more time to the module	9

The responses in Table 2 also formed the advice that these students would give to future students who enroll for this module. Noteworthy is that 11 of the 28 students advised that future students need to regularly attend class, while 21% of them recommended that future students should dedicate more time to studying this module if they are to be successful with their first attempt. Many of the students also recommended active participation in the class by asking questions when invited to do so by the lecturer. Passive attendance is therefore discouraged, as it does not contribute to academic success.

CONCLUSIONS AND SUGGESTIONS

The purpose of this article was to explore why electrical engineering students failed a compulsory second-year module in a BEngTech qualification, and what contributed to their academic success during their second (or even fourth) attempt. Many of the students indicated that they had originally failed the module because they did not attend class or had faced personal challenges or did not understand how to answer the questions in the final examination. Secondly, many students then noted that their current academic success could be attributed to dedicating more time to the module, attending class and joining a study group. Finally, many

students provided the following advice to future students: Attend, participate and take notes in class and then dedicate time to the module through self-reflection.

This study is limited to one compulsory second-year module at a university of technology in South Africa. However, this case study provides significant results in terms of the lived experiences of students and the advice that they may give to future students. Student voices will always remain a critical component of improving teaching and learning in all forms of education. It is recommended to share the results of this study with future students who may learn from the bitter experience of previous students and thereby evade any nagging regrets about repeating a module.

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