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Determining the predictors for success in engineering studies

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Abstract

There is a need to explore factors affecting student performance since the need for skilled engineering graduates is high. The problem is that the 4-year throughput rate in engineering in South Africa is 21%, and after 6 years a total of only 50% of students graduate. There is a lot of literature showing the quantitative side of this problem, but there is very little research performed using qualitative methods. The purpose of this research was to determine which factors could affect academic performance in engineering studies from the students' perspective at a South African University. This was achieved by using Glen Fisher's work as the framework. A mixed-methods approach was used, with the archive academic results and surveys yielding the quantitative results, and thematic analysis of focus groups yielding the qualitative results. The initial research population was 917 students, the survey included 411 respondents of which 353 participants chose to take part in focus groups. The final sample size for the focus groups was 35 participants. Thematic analysis showed that certain reasons for choosing the degree; the student's support system; the adjustment to university; and living far from university were factors perceived by students as affecting their performance negatively. It was also observed that studying in groups; making use of the Academic Development Unit; and attending lectures were perceived by students as affecting their academic performance positively. Some factors that appeared in literature did not emerge through the focus groups as affecting the academic performance, namely second language English; and funding.