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Assessment practices and student learning in the School of Mechanical, Industrial and Aeronautical Engineering: a case study at the University of the Witwatersrand

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ABSTRACT

Assessment practices have the potential to influence the way students learn. Learning-oriented and student-centred assessment theories provide guidelines for improving assessment practices, but it is not well understood how the principles that underpin these theories are interpreted and used in an engineering context. This study explores students' and lecturers' assessment practices in an engineering school where student success rates are frequently lower than expected. The purpose of the study is to gain insights into the School's assessment practices and how these shape student approaches to learning. Data were collected using a student survey, ten lecturer interviews and four student focus groups. The findings are presented using descriptive statistics and descriptive narratives that provide a rich picture of the current state of assessment and learning in the School. The findings confirm that assessment practices determine the planning and prioritisation of study efforts, the content that is covered when studying and the learning strategies that students use. The intention of students when choosing learning strategies is strongly influenced by their perceptions of the assessment environment, with students often exhibiting surface approaches to learning. The purpose of assessment in the School is predominantly viewed as a means of determining student competence leading to practices that align with an assessment *of* learning paradigm. Due to a poorly developed teaching and learning culture in the School, there is a lack of a holistic approach which leads to misalignment between assessment, learning and degree outcomes. As a result, assessment practices are often teacher-centred, affecting communication of expectations, criteria and feedback, leaving little space for the development of students' self-evaluative expertise. The authenticity and relevance of the curriculum and a detached social environment in the School impacts on student engagement and motivation. Findings reveal interesting phenomena related to the constructive alignment of assessment methods specifically when shifting from more traditional to project-based learning assessment. Although this study has highlighted and confirmed many findings prevalent in the literature, it has also, through the richness of the perspectives and experiences of both lecturers and students, provided a unique perspective on the complexities of context that influence assessment practices. The study revealed that what students and lecturers want to achieve is not necessarily what is being achieved and that a more collaborative teaching and learning environment is required to shift learning in a more positive direction. It also emerged that in a South African context a more collectivist approach is needed when thinking about how students learn and adapt to environments to facilitate deeper approaches to learning. This is a significant finding that can influence teaching and learning practices to improve student access and success. This study provides valuable insights that can be used to transform assessment practices, providing a better structure for student success in the School and more broadly in other engineering higher education contexts.

Keywords

assessment for learning; constructive alignment; approaches to learning; assessment practices; student-centred learning, project-based learning.