INTRODUCTION

Mentoring has an ancient history. In Greek mythology, Odysseus appointed his friend, Mentor, to serve as role model, advisor and guardian to his only son, Telemachus. Today, first-year students or mentees, can benefit from the experience of senior students or mentors. For example, mentees may need to know where they must go in order to resolve a specific problem or they need to be informed about specific policies, procedures or methods from which they may benefit during their tertiary education. Mentors, on the other hand, may provide a listening ear in terms of providing emotional support when mentees face tragedy or provide guidance when mentees experience frustration or anxiety during the course of their studies. Mentors and mentees can both benefit from such mentoring.

The development of student peer mentoring programmes (SPMP) in higher education (HE) was primarily aimed at reducing the large numbers of students who continue to drop out of university due to various factors [1]. For example, only 53.5% of students who had enrolled for three- and four-year programmes in 2009 had graduated in 2014 in South Africa (SA) [2]. A similar situation exists at the Central University of Technology (CUT) in SA, where only 26.6% of the 2014 student cohort had graduated by March 2017, while 22.7% of those students were still completing their qualification. This means that 50.7% of the 2014 cohort had dropped out of their original study programmes, but not necessarily out of CUT [3]. Moreover, engineering programmes tend to have lower drop-out rates than other fields [4] that requires more academic student support or specific interventions to mitigate this concern. Indeed, evidence supports the idea that academic student support for engineering students is more imperative than for other students in HE [5].

It could be argued that first-year engineering students may particularly benefit from mentorship programmes, since they often face a steep learning curve during transition from high school to the university environment [6]. They have to contend with new curricula, new lecturers, new surroundings, new friends, new ways of learning and new responsibilities. It has been stated that students deciding on a major course of study do not consider engineering to be a possibility, as they have had little to no exposure of engineering in their schooling career [7]. So, when students do enroll for engineering courses for whatever reasons they have, they should be given more academic student support than usual. Numerous programmes have been established in engineering to attain this goal, including supplementary instruction [8], peer mentoring [6], writing centers and social media support [9].

Kaul et al completed a study on leveraging peer mentoring among American students [6]. They stated that future studies could focus on investigating the effect of mentorship on a large and diverse group of students. This study aims to add to
this investigation by presenting student perspectives of the challenges and benefits of a SPMP that was introduced at CUT in 2013, so as to validate its viability for African students. Two key research questions were posed; namely, what are the primary benefits and challenges of such a programme for first-year and senior students; and which factors would help mitigate any identified challenges? The article firstly considers the theoretical framework of the study followed by key benefits and challenges as identified in the literature. The context of the SPMP at CUT is then reviewed, which is followed by the methodology used in this study. Qualitative results are then presented.

THEORETICAL FRAMEWORK

Bandura offers a sound theoretical framework for mentorship in the social learning theory [10]. Social learning theory posits that virtually all learning phenomena can occur vicariously by observing other people. It further states that most displayed behaviours are learned (intentionally or unintentionally) through the influence of example. Most often than not, a good example serves as a far better teacher than learning from the consequences of unguided action. Social learning theory can thus be used to explain how mentors can teach mentees through leading by example. Furthermore, the concept of advisor and guardian has become synonymous with mentoring, which also has a long tradition in education. Although peer mentoring spans many centuries, it has undergone significant changes in the last 35 years [11]. However, it has been realised that a peer relationship is quantitatively different from a student-teacher relationship, and this has led to the appointment of mentors whose capabilities are closer to those of the mentees. At CUT, peer mentorship is defined as: …A developmental relationship in which peer mentors with more experience help mentees to develop skills, maximise their potential, and become the persons they want to be [12].

KEY BENEFITS AND CHALLENGES OF STUDENT PEER MENTORSHIP PROGRAMMES

Peer mentoring has had a positive impact on students’ learning and understanding [13]. It was found that peer-mentored students are less likely to drop out of university compared to their non-peer-mentored counterparts (see Table 2 for a list of benefits). It is believed that this is due to the fact that peer mentoring helps students to better adapt to HE [1], which is important in the context of SA, where many students from different cultural backgrounds leave their communities to reside in large cities during the course of their university studies. Adaptation to city life, as well as to HE, often prove challenging to those students, as they need to adapt to a new routine, to new peers and to new stressors or anxieties. Peer mentoring has resulted in perceived social support for these students, by introducing new students to one another, and helping them to feel at ease in a strange environment. It has been reported that non-peer-mentored students’ self-esteem decrease significantly in the first ten weeks at university, whilst peer-mentored students’ self-esteem remain stable [1]. As many first-year students leave their close friends and families behind in rural communities to reside close to a university campus, a good social support system is essential for maintaining a positive outlook.

Skaniakos et al report that not only mentees, but also mentors, benefit from SPMPs [14]. Mentors experience an increased level of activity as a student, whilst also acquiring good, professional attributes and interpersonal skills. Such attributes include teamwork, communication, citizenship, global leadership and community engagement. Overall, SPMPs turn out to be a positive working experience for mentors, as they engage with diverse students from different rural communities. This is notable in SA, where 11 official languages exist with its own unique link to a specific culture, to a specific history, and to specific cognitive and emotional feelings. Understanding different cultures and their emotional make-up leads to more tolerance and less friction, which are conducive to providing a relatively safe and secure environment for students in which to study. It further assists mentors to prepare for the workforce, where they may also encounter diverse colleagues, whom they will need to treat in a respectful and dignified way.

Due to the far-reaching effects of peer mentoring, it should be acknowledged as a critical part of academic student support. However, challenges do exist with regard to peer mentoring that includes the need for more support of mentors [14] and the fact that many first-year students stop contacting their mentors after a few weeks into the programme [1].

THE STUDENT PEER MENTORSHIP PROGRAMME AT CUT

The SPMP at CUT aims to provide quality social innovations and events to help develop and support first-year students to become successful and equipped lifelong learners. The primary objectives of the programme are to:

<table>
<thead>
<tr>
<th>Benefits of SPMP</th>
<th>Challenges of SPMP</th>
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<tbody>
<tr>
<td>Positive impact on learning and understanding</td>
<td>Difficult to compare different institutions’ programmes</td>
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<tr>
<td>Lower drop-out rate</td>
<td>Lack of support by mentors</td>
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<td>Better adaption to HE</td>
<td>Lack of support by academic staff</td>
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<tr>
<td>Social support and self-esteem</td>
<td>Clearly defined responsibilities for staff</td>
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<tr>
<td>Good work experience for mentors</td>
<td>Poor attendance of mentees at planned events</td>
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<tr>
<td>Increased level of student activity</td>
<td></td>
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<tr>
<td>Acquisition of professional attributes</td>
<td></td>
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<tr>
<td>Development of interpersonal skills</td>
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</table>

Table 1: Benefits and challenges of SPMPs as derived from the literature.
Data saturation is reached when no new information is forthcoming [16] and contributes to improving internal validity.

A programme that may help validate its viability. Three focus group interviews were conducted that led to data saturation.

Some level of subjective interpretation. However, these opinions can ultimately identify useful insights on the

uncover factors influencing opinions, behaviour or motivation [15], the nature of qualitative analysis might introduce

during 2016 and who had also been mentees in 2014/15. Although focus group interviews are an effective method to

questionnaire. In this case, information was gathered from senior students who were mentors in the SPMP at CUT

Teaching provides a range of support services to students, to meet both their social and academic needs, and is primarily

Wellness Centres and the SPMP to engage in community outreach projects. The Centre for Innovation in Learning and

preparation. Whilst they are required to cover a range of compulsory topics, the mentor has the flexibility to rearrange

the sequence of topics in response to the needs of their mentees.

Mentors are also expected to be familiar with the resources that are available on campus, should there be a need to refer

mentees to a particular support structure. Mentors further provide information sessions to mentees on the ten graduate

attributes that were adopted by CUT. Mentees are also given the opportunity to attend training on a number of topics,

and are also encouraged to assist with public events and to become future mentors. Finally, mentees are assisted via the

Wellness Centres and the SPMP to engage in community outreach projects. The Centre for Innovation in Learning and

Teaching provides a range of support services to students, to meet both their social and academic needs, and is primarily

responsible for the implementation and administration of the SPMP. The methodology is presented next.

METHODOLOGY

A qualitative study was conducted. Data was collected by means of focus group interviews with a structured

questionnaire. In this case, information was gathered from senior students who were mentors in the SPMP at CUT

during 2016 and who had also been mentees in 2014/15. Although focus group interviews are an effective method to

uncover factors influencing opinions, behaviour or motivation [15], the nature of qualitative analysis might introduce

some level of subjective interpretation. However, these opinions can ultimately identify useful insights on the

programme that may help validate its viability. Three focus group interviews were conducted that led to data saturation.

Data saturation is reached when no new information is forthcoming [16] and contributes to improving internal validity.

Convenience sampling was used, as the researchers themselves selected participants who were readily available at CUT,

and who were engaged as mentors in the SPMP. These were recruited from management and engineering, as these

faculties have the largest academic staff complement [17] with a combined student enrolment of almost 70% of the

student body. In a qualitative study, it is the quality of the data, and not the quantity of the data, that determines the

sample size. Therefore, a total sample of only 25 students (between seven and ten students per focus group) was used as

data saturation occurred with the third focus group. This follows the recommendation that a focus group interview

should consist of between six and 12 participants [18]. The main home language of these participants was Sesotho,

which is a dominant language at CUT that has a bearing on the cultural background of the participants [19].

A structured questionnaire is necessary in order to guide and direct group discussions [20]. This allows all the groups to
discuss the same issues and to corroborate responses. Participants were requested to substantiate their responses to 11
open-ended questions, which were based on the literature review given in this article, with special reference to Table 1.
Thematic analysis was used to decode the responses of the participants in order to determine the main perspectives of all
the groups. Thematic analysis is the process of identifying patterns or themes within qualitative data [21], whereby the
researcher develops codes, words or phrases that serve as labels for sections of data. Different ethical procedures are
required when using patients, students or individuals from the public in research projects [22]. The required ethical
clearance for this study was obtained from the Research and Innovation Committee of the Faculty of Engineering.

RESULTS AND DISCUSSIONS

Table 2 presents a concise breakdown of the various themes that emerged from the interview responses. A common
thread that was found in many of the themes appears to be related to student assistance. This is seen in the number of
times that the word help was identified, as well as from the many benefits derived from the SPMP. The themes are
correlated to existing literature in the following discussion.
The focus group interview participants felt strongly that a primary outcome of the SPMP was to assist first-year students to adapt to HE (Question 1). This is a key benefit of such a programme, as noted by previous research, which has been condensed in Table 1. Collings et al especially note that peer-mentored students are less likely to drop out of university compared to their non-peer-mentored counterparts, as peer mentoring helps students to better adapt to HE [1]. This was also noted by Egbert at al, who mentioned that students in a similar programme (called an engineering learning community) reported an easier transition into an engineering college [23]. Similar thoughts were conveyed by Kaul et al [6]. This, therefore, should have a positive knock-on effect in mitigating drop-out rates among first-year students.

Table 2: Themed responses identified from the interviews.

<table>
<thead>
<tr>
<th>Question</th>
<th>Themes identified</th>
<th>Further notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>When you first heard of the SPMP, what did you understand its outcome to be?</td>
<td>Adapt to higher education; Provide general guidance and support; Learn from the experiences of others; Help with academic studies.</td>
</tr>
<tr>
<td>2</td>
<td>If you participated in the SPMP as a mentee, did the SPMP assist you to better understand the course for which you were enrolled?</td>
<td>Help with past examination papers; Help with information relating to the course.</td>
</tr>
<tr>
<td>3</td>
<td>If you participated in the SPMP as a mentee, did the SPMP assist you to adapt to university life?</td>
<td>Help in navigating around campus; Explaining differences between school and university life.</td>
</tr>
<tr>
<td>4</td>
<td>Did you experience any social benefits of being a mentee?</td>
<td>Help in making new friends; Help when experiencing personal problems.</td>
</tr>
<tr>
<td>5</td>
<td>If you stopped attending sessions during the year, why did that happen?</td>
<td>Unavailability of mentor due to experiential learning; Too many academic obligations.</td>
</tr>
<tr>
<td>6</td>
<td>What other benefits did you experience from the SPMP?</td>
<td>Friendship; Social skills; Academic assistance; Self-esteem.</td>
</tr>
<tr>
<td>7</td>
<td>What challenges did you encounter in your engagement with the SPMP?</td>
<td>Low mentee attendance at sessions; Lack of communication of sessions; Senior students discouraging attendance; Mentee attitude toward the mentor.</td>
</tr>
<tr>
<td>8</td>
<td>What could the SPMP staff have done to improve the sessions?</td>
<td>Make SPMP compulsory; Provide more resources; Secure buy-in from all stakeholders.</td>
</tr>
<tr>
<td>9</td>
<td>What was your most valuable learning experience in the SPMP?</td>
<td>Graduate attributes; Time management skills.</td>
</tr>
<tr>
<td>10</td>
<td>Did you experience any other support whilst participating in the SPMP?</td>
<td>Emotional support.</td>
</tr>
<tr>
<td>11</td>
<td>Why did you become a mentor?</td>
<td>Prosocial behaviour; Personal development.</td>
</tr>
</tbody>
</table>

The positive impact on learning and understanding (as noted in Table 1) was discerned by the responses of the participants (Question 2). Many reiterated that their expectations of the SPMP were realised, as it provided them with the opportunity to learn from the experiences of others, and to receive help with their academic studies. This help came primarily in the form of study groups, where they worked through previous examination papers. However, there is an inherent risk of mentees wanting more academic support than can be provided. Therefore, it may be important to
distinguish between the range of mentoring functions, in order to increase clarity for both mentors and mentees, and to increase the effectiveness of the programme [24].

Providing general guidance and support was also noted as an outcome of the SPMP. This was defined in subsequent questions (Questions 2 to 4), pointing to the following aspects: sharing information relating to the course; helping to locate classroom venues; and assistance with personal problems. McKavanagh et al found that turning to a peer may be easier than using formal services, especially when first-year students are not yet fully aware of the formal services available on campus [25]. This benefit should be added to those listed in Table 1.

Interestingly, mentees who stopped participating in the SPMP stated that either their mentor was unavailable or that they had too many academic obligations (Question 5). Reasons, such as not benefitting from the programme or losing interest in the programme, were never given. Collins et al speculate that students who continue to see their mentors throughout the year may be experiencing personal problems for which they require ongoing support [26]. They may even consider their mentor to be a friend, and thoroughly enjoy the time spent together. This point was emphasised by participants’ responses to Questions 4 and 6, where friendships was noted as a key benefit of the SPMP. This relates strongly to social support mentioned in Table 1, which would further have an impact on self-esteem.

Responses to questions on whether the SPMP provided any valuable learning experiences and/or personal benefits (Questions 9 through 11) support Goff’s evaluation on transitioning students that their success at university is based on more than just fulfilling academic criteria [27]. Respondents confirmed that they had benefited personally from the SPMP, specifically with regard to acquiring specific graduate attributes and time management skills. Furthermore, the provision and receipt of emotional support and personal development was realised. These responses support the literature summarised in Table 1, which listed social support, acquisition of professional attributes, development of interpersonal skills and good work experience as benefits of an SPMP. Furthermore, the findings support the research of Skaniakos et al in which mentees and mentors would have experienced an increased level of activity due to the various activities planned in the SPMP [14]. However, it is recommended that the advantage of acquiring graduate attributes be added to Table 1, as it does differ somewhat from professional attributes (e.g. time management skills would be a professional attribute and not a graduate attribute).

The greatest challenges faced by the SPMP are poor attendance, discouragement of attendance, attitude and lack of communication (Questions 7 and 8). In Table 1, it was noted that some mentors and academic staff do not really support the SPMP. However, this was not really reported by the participants. They instead reported on the lack of support by senior students at the University, some of whom even discouraged mentees to attend the activities of the SPMP. This is a real challenge that should be added to Table 1. The participants did not comment on the SPMP of other institutions or on the clearly defined responsibilities of academic staff who manage the programme. Respondents made recommendations towards addressing the challenges, which included making the SPMP compulsory, so as to ensure attendance and encouraging buy-in from all stakeholders. These challenges really defeat the purpose of an SPMP, which aims to mitigate drop-out rates and enrich student’s educational experiences [14]. Without it, there is an increased risk of first-year students not being able to adapt to HE, which in turn will impact on attrition rates [1].

CONCLUSIONS

The purpose of this article was to present students’ perspectives of a peer mentorship programme that was introduced at a university of technology in South Africa in 2013, so as to validate its viability for African students. The participants in three focus group interviews emphasised five key benefits which included better adaption to HE, an impact on learning and understanding, social support, acquiring graduate attributes and personal development. Two key challenges that were emphasised relate to poor attendance of the mentees and a lack of support by senior students at the University.

The results of the study are limited to African students (both management and engineering) that have unique cultural background that brings diversity to the classroom. Further limitations include that convenience sampling was used to select the participants from management and engineering. Conducting a time-lag study over a number of years may add weight to the final results. However, this was a qualitative study using a focus group interview that allows for insight into establishing the viability of the mentoring programme. This study adds value to the current literature on mentorship programmes for first-year students, as it validates established challenges and benefits from an African context. Furthermore, it adds a significant challenge, which is not readily discerned from current literature, being the lack of support by senior students towards the mentorship programme at CUT. Moreover, two noteworthy advantages were identified that were not discerned from current literature, being that the mentorship programme provides general guidance and support and helps students acquire graduate attributes.

Based on the students’ responses, it is recommended that peer mentorship programmes be incorporated into the curriculum and time table of each academic programme, and especially engineering ones as engineering students tend to require more academic support than other students. It is also recommended to make senior management aware of student perceptions of such programmes, in order to convince them to both implement and retain such programmes in the future. The essence of such programmes will continue to be the provision of support, as first-year students seek to pick the brain of their mentors, who often provide a listening ear and a prod in the right direction. This has the potential to improve student retention rates, leading to benefits for students, universities, the industry and communities.
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