Student engagement in higher education: Examining Mozambican students' first-year experience and perceptions

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Abstract

Improving the student learning experience in higher education requires an overarching approach towards integrating academic activities that are deemed relevant in promoting a high-quality experience and student success. No less important is improving our understanding of what it is like to be a student. Underpinned by the student engagement framework, we conducted a survey of 293 undergraduate first-year students from a university in Mozambique to examine the different ways in which students perceive and experience social and academic integration during the first year of their studies. In particular, the study measures students' levels of engagement and educational outcomes. It also seeks to understand the students' perceptions of the quality of the social and learning environment and their respective satisfaction with their experience. The findings indicate both low and moderate levels of engagement in the selected benchmarks of effective educational practices. Outcome measures such as departure intention and student satisfaction are also highlighted. The students in our study experienced a rather supportive learning environment with good relationships with teachers, peers, and administrative personnel. However, the typical challenges of first-year students, including their academic workload, time management, and difficult assessment tasks, were also reported while they were transitioning to university studies.

Introduction

Recently, higher education institutions (HEIs) around the world have been devoting their resources to ensuring student success and retention and ensuring that students gain the most from their experience at university (Tight, 2020). The student engagement concept appears to be one measure of effective instruction and learning as well as excellence in student outcomes (Zepke, 2015). Encouraging all students to become more engaged and effective learners—thereby enhancing their academic achievements and advancement chances after graduation—is a key guiding policy and practice in higher education (Kahu & Nelson, 2018; Thomas, 2012).

However, studies applying a framework of student engagement still need to address what aspects of student engagement matter to student learning, development, and success in higher education (Zepke, 2017). The student engagement questionnaires, both from the US National Survey of Student Engagement (NSSE) and from the Australasian Survey of Student Engagement (AUSSE), and further adapted and used in

other countries, provide empirical instruments to measure students' learning experiences while considering effective educational practices (Coates, 2010). These surveys capture aspects of learning experiences and activities found in specific educational contexts with particular demographics, predominantly in Western countries. Student engagement is a crucial element determining the quality of education and plays a critical role in student success (Everett, 2017; Tadesse et al., 2017).

Although survey research on student engagement has been increasingly popular over the past 20 years in several countries, it remains a relatively new research area in some nations, including Mozambique. In particular, little is known about student engagement levels in the first year at Mozambican universities. As Krause and Coates (2008) noted, "First-year experience plays a critical role in managing transitions to tertiary study, in retaining students, and in setting up the educational foundations for academic success" (p.495). Evidence-based accounts of students' experiences and perceptions of adjustment to the university environment are important tools for assisting universities in improving educational provision and outcomes (Coates, 2010). Furthermore, cultural differences in student involvement and the related impediments highlight the need for a study to be carried out in more challenging higher education systems, such as those in the African context (Garton & Wawrzynski, 2021; Strydom et al., 2010). Thus, the purpose of the present investigation is to examine different ways in which students perceive and experience social and academic integration in the first year at a public university in Mozambique and assess the extent of the interrelatedness of the engagement levels. More specifically, the present study addresses the following research questions.

(1) How do students perceive and experience social and academic integration?

(2) How do different engagement levels interrelate?

Literature Review

Framework of Student Engagement

Higher education research, here as underpinned by a constructivist view of student engagement, operates under the assumption that students construct their own knowledge; for this purpose, institutions and staff create conditions that allow them to participate in teaching activities (Krause & Coates, 2008). As a result, student learning and success depend on the amount of time and energy students devote to educationally purposeful activities (Coates, 2007; Kuh et al., 2006). The key to educational policies and practices is to direct students' efforts towards purposeful activities (Strydom et al., 2010). According to this view, the concept of student engagement encompasses a certain perspective on the interaction between academic institutions and students (Krause & Coates, 2008).

To measure student engagement levels, benchmarks of effective educational practices have been used extensively (Tadesse, 2017). Initially developed in the US, the Student

Engagement Questionnaire (NSSE) includes five benchmarks of effective educational practices: "level of academic challenge, active and collaborative learning, student–faculty interaction, enriching educational experiences, and supportive campus environment" (Zilvinskis et al., 2017, p.882). The AUSSE version of the instrument contains six scales: "Academic challenge"; "Active and collaborative learning"; "Enriching educational experiences"; "Supportive learning environment"; and "Work integrated learning" (Coates, 2010, p.4). To ensure proper adaptation and translation to the context of this study, a student engagement instrument inspired by both NSSE and AUSSE was employed to include three out of five facets of engagement, including (1) student and staff interactions, (2) active and collaborative learning, and (3) a supportive learning environment (Coates, 2010).

The first facet measures the "level and nature of students' contact with teaching staff". Accordingly, one of the most effective ways for students to learn is through interactions with faculty members. In general, learning and growth are enhanced when students can interact with academics (Pascarella & Terenzini, 2005). More staff interactions may not always translate into improved learning outcomes, even if it is still crucial. It has been demonstrated that contact is most effective when it occurs outside of formal learning venues, when it focuses on a wider range of intellectual topics, and when it attends to the needs of each individual (Coates, 2010).

Active and collaborative learning are two separate entities. Active learning generally refers to the engagement of students in activities that require them to create new knowledge and understanding. In contrast, collaborative learning entails students gaining information through appropriately placed interactions with their peers over course-related material. These statements suggest that the concept of active learning is more expansive than that of collaborative learning. Although individual learning is possible without group learning, collaborative learning usually entails active participation (Coates & McCormick, 2014).

The third inquiry is about "feelings of legitimation within the university community" (Coate, 2010, p. 11). It is crucial to keep students in higher education, which can be accomplished by involving them in their studies and creating a welcoming environment (Richardson & Radloff, 2014). In this context, in a supportive environment, students are questioned about their experiences on campus and the quality of their relationships with other students (Kuh et al., 2011).

A new approach to measuring higher education quality also establishes a method for determining educational outcomes (Coates, 2010). The outcome measures adopted in the present study, for example, include three scales: "average overall grade"; "departure intention"; and "students' overall satisfaction with their educational experience" (Coates & McCormick, 2014, p. 56). In today's higher education system, satisfaction is one of the most widely utilised indicators of educational quality. Even if measuring satisfaction promotes a market-oriented view of university education, students may believe their experience has provided a fair return on what is frequently a sizeable personal investment (Coates, 2010).

The First-Year Experience

The first year of university is crucial for maintaining student retention, facilitating transfer to higher education, and laying the groundwork for future academic success (Krause & Coates, 2008; Trautwein & Bosse, 2017). Many students prosper and adapt, whereas many others find it difficult and think of dropping out. First-year experiences also differ significantly based on their admission pathway, level of readiness, driving forces, social networks, and engagement patterns (Kift, 2015). According to research, first-year students are not equipped to be self-directed learners when they transition to learning in a university setting. Instead, they begin to develop these skills during their first year of study; they rely on peer support to help them adjust to university life; and they are still determining how to be successful students in a university setting (Cameron & Rideout, 2020).

Students' hardship in a university setting can also be derived from their perceptions of their academic workload and ability to address time management issues (Brooker et al., 2017). Trautwein and Bosse (2017) revealed four dimensions of challenges students faced in the first year, including personal, organisational, content-related, and social challenges. The personal dimension includes difficulties related to general study skills, such as scheduling learning activities. It also discusses difficulties that come with assuming a new role as a student, such as striking a balance between study and other areas of life. The organisational dimension comprises challenges related to the university system, including unfavourable circumstances, such as tight exam schedules or low-quality teaching and supervision. The content-related dimension refers to problems related to general study skills (e.g., notetaking) and specific academic skills (e.g., academic language). In the social dimension, students encounter worries from family and friends about their decision to pursue a certain academic career or a certain study programme (Trautwein & Bosse, 2017).

Despite the challenges reported, studies have revealed that students from top higher education systems in the world are well equipped to cope with the challenges of university learning. For example, a study showed that, in Australian higher education, students are increasingly engaged in their studies, with a greater sense of readiness and knowledge about what to expect from their education and far better relationships with faculty members than they did a decade or two ago (Baik et al., 2017). Similarly, in some Asian countries, first-year experience is associated with students' high satisfaction with and preparedness for university studies. Satisfaction and sense of purpose are linked to students' perceptions of university education as a source of career opportunities. In addition, students believe that their high schools are equipped with the necessary abilities to help them successfully assimilate into the university's culture (Ang et al., 2019). In the Finnish context, although recognising stressful events, first-year students appeared to be able to handle the rigorous requirements of higher education and frequently talked about how they prevented stressful academic feelings by using organisational skills and self-regulated learning methods (Perander et al., 2020).

Given the challenges faced by some students, studies have suggested that engagement in the first year can be fostered through specific pedagogical strategies and a supportive

learning and social environment on campus. First-year students' levels of interest and engagement are stimulated by a variety of teaching and learning strategies (Everett, 2017; Meehan & Howells, 2018; Ginty & Boland, 2016). For example, one of the most important factors in increasing motivation and engagement levels is making learning experiences personally relevant and meaningful (Everett, 2017). Moreover, creating conditions in the informal setting for first-year students to connect with more senior students from the same degree programme can have a positive impact on personal and social levels. Although they are in their later school years, students learn what to do next and how to handle a variety of problems that arise when they transition to the third level (Ginty & Boland, 2016). At this stage, students start building a strong sense of belonging as university students through studying and socialising with peers (Briggs et al. 2012; Naude et al., 2016; Van der Zanden et al., 2018).

Mozambican higher education context

Higher education in Mozambique has expanded markedly in the last decades. In response to the labour market, political, economic, and educational market dynamics, Mozambique's rapid expansion has been broken up and reorganized since 1995 (Langa, 2017). The whole Mozambican higher education system has been compelled to modify curricula in response to new market needs, and these concepts are key forces behind the curricular reforms currently taking place at Universities, thus responding to a variety of conflicting pressures from various organizations in addition to the state's expectations (Miguel et al., 2022).

This supply and demand boom unavoidably created issues with the higher education system's reputation and quality. Difficulties encountered by many African universities are the result of a combination of inadequate finances and expanding student enrollment. The majority of higher education authorities, whose job it is to ensure quality, are more concerned with standard-setting than with creativity (Mireku & Bervell, 2024; Mulenga, 2020).

Methodology

Research Design

The current study applies cross-sectional survey research. Survey research enables analysts to manipulate more factors and variables and generalise to a wide target population. According to Cohen et al., "A cross-sectional study is one that produces a 'snapshot' of a population at one particular point in time" (2017, p. 348). The choice of cross-sectional design stems from the fact that "they are less expensive and they produce findings more quickly" (Cohen et al. 2017, p. 351). To measure student engagement and outcomes, a survey was applied. In addition, we adapted our survey to include two open-ended questions in which participants were asked to (1) discuss aspects that have positively affected students' studies in the first semester and (2) discuss challenges they faced during their first semester. Although the validity and reliability of the survey are unquestionable, issues related to sample size can affect statistical analysis (Cohen et al., 2018). One limitation of the survey employed was the

sample size, which could be considered small. The second issue has to do with the answers given by the respondents. Because respondents perceived specific answer alternatives differently, the survey question answer options somehow resulted in ambiguous data. Also, some respondents seemed not motivated to give truthful, accurate responses.

Participants

The participants were volunteers recruited from the student population enrolled in the first year of 2022 from three faculties and six majors, including social sciences, education, science, and engineering. Invitations were sent to all the students, including their teachers and programme directors. The questionnaire was then offered to 410 students, of whom 293 responded (71%). The study participants were undergraduate students in their first year (N=293), and their relevant characteristics are presented in Table 1. The participants were predominantly female and in social sciences and humanities disciplines (e.g., psychology, with 79.2%; early childhood education (ECE), with 98.8%; sociology, with 80.8%; and environmental education (EE), with 70.5%). The majority of the male students were in STEM disciplines (92.9% from physics and 69.2% from engineering). Most students were between 17 and 20 years old when starting university in February 2022 (e.g. 50% in sociology, 78.6% in physics). Most students' parents did not have university degrees (65.1%), which is similar across all fields of study.

Procedures

To answer these research questions, a survey study was conducted at one university in Mozambique in July and August 2022. Formal authorisation for the present study was obtained from the deans of the selected faculties. All the faculties selected were informed about the objectives and purposes of the study, and they provided written approval. All the participants signed written consent forms verifying their willingness to participate. The study considered the whole class as a unit of analysis. Thus, the questionnaire was offered to the selected class, and the students present at the time during this procedure. We adopted purposive sampling (Cohen et al., 2017) to represent the three largest faculties of the university with their different discipline perspectives. The survey questionnaire was initially pilot tested with a different group consisting of 44 students. The item related to departure intentions was changed because of inconsistencies in the students' responses. Initially, it came with motives of departure and changed to a Yes or No question, as shown in Table 1.

	Participants' major													
	Psychology		ECE		Sociology		EE		Physics		Engineering		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
	24	8.2	55	18.8	52	17.7	44	15	28	9.6	52	17.7	293	100
Participants' gender														
Female	19	79.2	54	98.8	42	80.8	31	70.5	2	7.1	16	30.8	200	68.3
Male	5	20.8	1	1.8	10	19.2	13	29.5	26	92.9	36	69.2	93	31.7
Participants' age														
17–20	14	58.3	34	61.8	26	50.0	26	59.1	22	78.6	28	53.8	172	58.7
21–24	6	25.0	16	29.1	18	34.6	13	29.5	4	14.3	17	32.7	83	28.3
25+	4	16.7	5	9.1	8	15.4	5	11.4	2	7.1	7	13.5	38	13
Parents with university degree														
Both parents	3	12.5	4	7.3	6	11.5	7	15.9	3	10.7	6	11.8	36	12.3
Mother	1	4.2	2	3.5	3	5.8	1	2.3	2	7.1	5	9.8	17	5.8
Father	5	20.8	8	14.8	7	13.5	9	20.5	4	14.3	10	19.6	49	16.8
None	15	62.5	41	74.5	36	69.2	27	61.4	19	67.9	31	58.8	190	65.1

Table 1: Characteristics of the Study Participants

Data Analysis

The survey generated both quantitative and qualitative data. The quantitative data were analysed through the Statistical Package for Social Sciences (SPSS) version 28 software. Both descriptive and correlational analyses were performed in SPSS. The Pearson product–moment correlation coefficient was computed to assess the relationships among the observed variables. Although the correlation coefficient can be either descriptive or inferential, we use it as a descriptive statistic because it was computed for a known set of data.

Qualitative data are derived from open-ended questions. This gave the students a chance to describe what they were experiencing in their own words. The qualitative data were interpreted via thematic analysis. Following Braun and Clarke (2006), "Thematic analysis is a method for identifying, analysing and reporting patterns (themes) within data" (p.79). Themes were then generated and counted by the number of participants whose comments substantiated each theme. To ensure transparency and confirmability, the number of participants who mentioned each theme was followed by exemplary quotes from the participants (Castleberry & Nolen, 2018). The participants were identified with pseudonyms. The participants were identified by the letters "pa" followed by an order number.

Results

Descriptive Analyses of the Engagement Scales

The descriptive analysis revealed that the mean score of the student engagement scales was a low and modest level of engagement. The student–faculty interaction has a mean score of 1.46, whereas collaborative and active learning has a mean score of 2.17. For the supportive learning environment, the mean scores range from 3.91 to 4.49, indicating that these scores are considered moderate. These results suggest that students understand and value academic activities that involve collaborating with other students and active engagement in class more than activities involving working with staff outside the classroom. It also suggests that, in this context, low engagement in interactions with faculty is the result of a lack of recognition from the teachers' side that this type of encounter contributes to the quality of student's learning experience.

Correlational Analyses Among Observed Variables

Table 2 presents a correlation matrix of the data. Correlations were calculated for the total sample (N=293). Correlational analyses revealed that only four variables are related to one another, here with low degrees of association and both positive and negative associations. For example, collaborative and active learning is positively correlated with student–faculty interaction, r =. 238, p = < .01, n = 293. In addition, student satisfaction is weak and negatively correlated with collaborative and active learning (r =-.165, p = < .01, n = 291). A weak and negative correlation was also found between departure intention and student satisfaction (r =-.143, p = < .01, n = 291). These correlation coefficients provide very little evidence of relationships between the different engagement scales and outcome measures. This lack of significance between different sets of variables may indicate that students do not necessarily articulate their academic outcomes as the result of the types of experiences they had at university. On the contrary, students may still try to grasp the relevance of these concepts and how these have a bearing on their overall college experience. Of course, in a way, low engagement with staff may also be the result of a past negative experience, which can affect new encounters, and in turn, can affect their satisfaction and intention to depart. In addition, a contradictory effect of those experiences by doing the opposite cannot be ruled out.

	Variables	*M*	SD	1	2	3	4	5	6	7
1	Student–faculty interaction	1.463	0.388	1						
2	Collaborative and active learning	2.17	0.404	.238**	1					
3	Relationships with teaching staff	4.49	1.103	0.047	0.045	1				
4	Relationships with administrative personnel	3.91	1.309	-0.006	0.029	0.080	1			
5	Relationships with other students	4.09	0.668	-0.080	0.029	0.109	0.064	1		
6	Student satisfaction	2.34	0.750	-0.066	-.165**	0.022	-0.067	-0.012	1	
7	Departure intention	1.82	0.382	0.070	0.084	-0.05	0.043	-0.011	-.143*	1

*** Correlation is significant at the 0.01 level.*

Table 2: Correlations among observed variables

Student Engagement Scales: Item Levels

Following the results of AUSSE reports (Coates, 2010), data on engagement scales are presented at the item level. Appendix 1 reports the results for five items in the student–staff interaction scale for first-year students.

In general, most participants had "never" contacted their teaching staff outside the classroom. Moreover, the response "never" is the highest of all the items. For instance, 89.4% of the participants reported that they had never worked with teaching staff other than for coursework. In contrast, for those who had ever interacted with staff, the most common motive is the item "Discussed your grades or assignments with teaching staff", with 44.4% of participants reporting "sometimes". This is followed by "Received prompt written or oral feedback from teachers/tutors on your academic performance", and again, "sometimes" with 42.7%.

Among the "Active and collaborative learning scale" (Appendix 2), the two items with the highest percentage of "never" responses include "Participated in a community-based project (e.g., volunteering) as part of your study" and "Tutored or taught other university students (paid or voluntary)", with 85% and 59%, respectively. The most common item is "Asked questions or contributed to discussions in class or online" (56%). Even more importantly, "Worked with other students on projects during class" is cited as "often" and "very often" by 35.8% and 35.2% of the participants, respectively. For first-year students, having very low engagement in community-based projects and paid work is understandable considering the lack of opportunities at this stage of their studies, and is likely to occur in the coming years. On the other hand, group work is the most commonly assigned task related to course participation requirements (seminars) and assessment tasks at university.

In general, the participants had positive relationships with all the key actors who make up the campus social environment with which the students had been in contact (Appendix 3). For example, teaching staff were mostly viewed as "available" (41.3%) and

helpful (30.7%). Students also characterised administrative personnel as helpful (31.7%) and considerate (25.9%), though a significant number of students considered them inconsiderate (17.1%). A large majority of the participants considered their relationships with other students to be friendly (75.8%). These findings suggest that students are more inclined to seek support from their peers than from other stakeholders. It seems natural that students would feel encouraged by their peers, given their close proximity in terms of social status. However, friendship itself could also be interpreted as a source of emotional support rather than a source of academic support. The former accounts for only 13.0% of the respondents who reported peers as supportive regarding academic support.

Qualitative Analyses: First-Year Experience

To answer the second question, "How do first-year students interpret the quality of their educational experience?" 24 (40%) of the 60 participants who provided valid and relevant responses to the open-ended questions were analysed (Table 3). Because the data generated are part of the survey, the quantitative data were compared with the qualitative data to provide an in-depth explanation and, at the same time, add richness to the results.

Although the quantitative data revealed a low degree of student engagement compared with other studies, the qualitative data were able to provide more nuanced views, understandings, and explanations for the quantitative data. In the context of the present study and for the first-year experience, several conditions and situations were mentioned. These conditions can either facilitate or prevent students from engaging in relevant education practices. In our study, five themes have emerged from the aspects of students' experiences in the first year: (1) academic workload and time management; (2) interactions with peers; (3) interactions with teachers; (4) course content and assessment tasks; and (5) adjustment to the university environment (Table 3).

Theme	Number of participants substantiating positive experience	Number of participants substantiating negative experience	Quotes from the participants
Academic workload and time management		13x	"I felt overwhelmed with multiple assignments from different courses" (pa.1). "There were a lot of assignments and the teachers (…) were not aware that I have other courses" (pa. 34).
Interactions with peers (socialisation and collaboration)	3x	3x	"I learned to socialise with other colleagues" (pa. 28). "Lack of responsibility on the part of some teachers, colleagues who do not help with group work" (pa. 14).
Interactions with teachers	11x	7x	"I had some good interactions with teachers in terms of asking questions and giving suggestions" (pa. 31). "I notice lack of seriousness on the part of some teachers, it was difficult to adapt to the environment of this university" (pa. 9).
Course content and Assessment tasks	11x	13x	"It is difficult to understand the questions that teachers ask in the tests; I would like teachers to be more objective in the questions and to put forward aspects that they want me to answer" (pa. 33). "Difficulty in adapting to new subject matter, new disciplines …" (pa. 27). "I have passed all courses" (pa. 22). "Delay in publishing results and teachers are not available to discuss grade" (pa. 23)
Adjustment to university social and learning environment	11x	13x	"It was difficult to live in university halls and deal with cultural differences" (pa. 17). "I managed to fit into the university environment" (pa. 4). "I learnt from other people's cultures" (pa. 36). "It was difficult to work with peers and do presentations because of my shyness" (pa. 29). "Difficulty communicating in class because of shyness" (pa. 32).

Table 3: The First-Year Experience

Theme 1: Academic Workload and Time Management

Whereas quantitative data have revealed that the participants were satisfied with their experience (44.4%) and would not change to another institution (79.9%), the hardship of becoming a university student was unavoidable and stressful for some. All the participants identified key challenges they faced during the first semester of their inception into academic work regarding expectations and requirements to succeed (Table 6). As key challenges, academic workload and time management were often expressed explicitly or implicitly in their words. This aspect was substantiated by 13 participants. The source of distress came from multiple assignments, pressure from teachers and the requirement of readings and preparing for multiple courses at the same time.

Theme 2: Interactions with Peers

Academic collaboration and social interaction are two important components associated with educational experience at universities. These can manifest in the form of collaborative learning (Table 3) and socialisation with peers. However, most of the participants rated their relationships with peers as friends (75.8%). In this theme, the participants reported both positive experiences and poor experiences with peers. For example, some students found it difficult to work with peers because they believed that not all members of groups took their group work seriously. On the other hand, the students reported that they took this opportunity to further their friendship network and learn from each other; thus, it was considered a positive experience.

Theme 3: Interactions with Teachers

In addition to peers, another great source of academic support required for students to obtain the most out of their first-year experience was teachers. This theme was mentioned by participants mostly in a positive way. Although the participants mentioned that they had positive experiences because their interactions with teachers were "good", they were unable to elaborate on the nature of those experiences. For example, one student noted that "there were some good interactions with teachers in terms of asking questions and giving suggestions" (pa.31). Another student was critical in relation to some teachers' behaviour: "I notice lack of seriousness on the part of some teachers" (pa.9).

Theme 4: Course Content and Assessment Task

The participants mentioned that they struggled with the course content and the nature of the tests. For example, the participants mentioned that there were some courses that they were not expecting in social sciences programmes, such as statistics. Because most courses were completely new compared with the ones they had in high school, the students struggled to understand the content of the course itself. Because they found it difficult to understand the course content, the assessment tasks were viewed as posing even more challenges. For example, one student reported that "it is difficult to understand the questions that teachers ask in the tests", which is probably the result of

not understanding the course content. Students not understanding the course content and the purpose of the assessment may be derived from both teachers' and students' abilities. The other group of students who had good experiences with the courses associated this fact with their academic achievement, such as good grades and passing all courses.

Theme 5: Adjustment to the University Environment

Participants mentioned ways in which their experiences were negatively impacted by the social environment on campus, such as cultural differences and certain personality traits. Struggles to adapt to new environments are very common because most of these students came from disadvantaged communities, and some had to move from the countryside to the city to study at university. Even more difficult was how to communicate with new people regarding being an introverted student. For example, some participants mentioned that they had a hard time talking in front of the whole class while presenting and working with peers because of shyness (pa.29; pa.32). However, other students managed to easily adapt to the new environment because they approached cultural differences as something to learn from (p. 28), they were able to navigate through all academic requirements, and hence, they successfully transitioned to university.

Discussion

The aim of the present study was to examine the different ways in which students perceive and experience social and academic integration in their first year. Our study provides insights into three main aspects of students' experiences and perceptions in the first year: (1) the levels of student engagement in effective educational practices, (2) the levels of educational outcomes that students report and (3) student perceptions of the quality of the social environment on campus along with their perceptions of the transition to learning in a university context. All of these aspects are intertwined in some way and provide answers to the research questions. The quantitative analysis revealed that the levels of engagement are inconsistent, which is the result of a lack of clear understanding of each item or problems of adaptation in the context of this study. However, the qualitative data enlightened some problematic aspects of quantitative data related to engagement scales by discussing issues related to the quality of relationships with teachers and the type of experiences, in the eyes of students, that were viewed as the most impactful and directly affected their learning outcomes.

Although students' interactions with staff have been reported to provide vital educational benefits for student learning and high-quality student outcomes (Coates, 2010; Xerri et al., 2018), our findings indicate low levels of student–staff interactions (*M*=1.46). These findings are also consistent with a study conducted in a South African context where the levels of interaction between students and staff were consistently low (Strydom & Mentz, 2014). However, these findings differ from those results reported in Ethiopia, with a mean score of 2.35 (Tadesse et al., 2017), and China, with a mean score of 2.40 (Chong & Soo, 2021), which is considered a relatively modest level

of engagement. A closer examination of the five items in the student–staff interaction scale revealed that 65.9% of first-year students reported "never" talking about career plans with teaching staff. Similar findings were reported at the item level by Coates in the Australasian context (2010), where 60.8% of first-year students reported "never" talking about career plans with teaching staff. In the same study, 81.7% of first-year students reported that they had never worked with teaching staff on activities other than coursework. In our study, this number was even greater (89.4%). Nevertheless, discussing grades with teaching staff is the most common type of student–staff interaction. One possible explanation for the low frequency of contacts and emphasis on discussing grade-type motives is that students tend to focus too much on doing well on assessment tasks and having good grades.

Furthermore, the students in our study reported a moderate degree of engagement with active and collaborative learning activities, with a mean score of 2.17. This finding is in agreement with the study by Tippin (2014) in New Zealand, where similar levels of engagement were found. Previous research highlights that active learning strategies are an important feature of an effective learner in the first year at university (Cameron & Rideout, 2020). In our study, numerous students reported discussing ideas derived from readings or classes with other students. However, the data from the open-ended questions suggest that the students valued collaboration and that some students wanted to actively learn by themselves without collaboration.

The participants from our study rated the quality of their relationships with teaching staff and administrative personnel as moderately positive (helpful, available, and considerate). Unlike the Mozambican context, in the Australian context, a study showed that 75.2% of students rated the quality of their relationship with teaching staff as very poor (Richardson & Radloff, 2014). Furthermore, the participants in our study felt far more positively predisposed towards other students and rated their relationships as "friendly". Students engage in the academic (study group, mentorship), personal and social aspects (e.g. friendships) of university life in a more intricate way (Krause & Coates, 2008). Because student-staff interaction is still an area of concern, an appropriate trust relationship with academic staff and an ongoing dialogue with them are advisable (Zepke, 2015). The quality of relationships is one of the indicators of the learning environment on campus. More importantly, the positive impact of interactions with teaching staff on student learning has been well documented (Pascarella & Terenzini, 2005; Tinto, 2012). In general, a supportive learning environment is more prone to instigating students' deep engagement with learning activities. In contrast, "students who feel that teaching staff are unavailable, unhelpful and unsympathetic are also more likely to be dissatisfied with their overall educational experience" (Richardson & Radloff, 2014, p. 609).

The challenges reported by the participants were mostly related to academic workload, time management, and multiple assignments. Many students in the first year of university face difficulties while integrating into the academic environment (Brooker et al., 2017). Academic staff play an important role in facilitating this transition, both formally in how they approach teaching and learning and informally in how they interact with students. Research has used a wide range of terms to describe this moment in

students' lives. Trautwein and Bosse (2017) reported that adjustment to student life involves personal challenges and self-management. Naude et al. described this phenomenon as "the difficulty of transitioning into higher education" (2016, p. 46), which is associated with managing time, study methods, and high workload. Students' adjustment to the university environment is a cause for concern because it can lead to a "negative attitude towards university and a low level of motivation" (Özen and Yılmaz, 2019, p. 120).

In addition to time management and academic workload, our results have indicated that the quality of interactions with teachers and peers could be double-edged. For example, the perceptions of difficulty or rigidity of course content and assessment tasks are usually associated with the performance and personality of teachers. In this case, when positive experiences, such as having good grades at the same time were reported, students portrayed relationships with teachers as good and vice versa. In the education evaluation literature, this phenomenon is known as "lenient grading", where increasing the grade of a student is related to higher evaluations of the instructors (Berezvai et al., 2021). Another facilitator or hindrance of adjustment into one's academic life is interaction with peers. Previous studies have shown that "social networks with peers can lead to greater engagement in active and collaborative learning and that facilitates the sharing of knowledge to meet academic challenges" (Matthews et al., 2011, p. 115). Although group work can be a good place for socialising and bonding with peers, the differences in inclination and commitment among students can make this moment less enjoyable for some students.

Finally, our findings have shown that some background characteristics of the students contributed to smooth or difficult adaptation to a university environment. For example, there was evidence suggesting that introverted students, particularly females, felt isolated from other members of the student body and not as well integrated into university student life, including in the classroom and student residence hall. This is very common among minority ethnic groups in Australia and New Zealand (Tippin, 2014) and black African students in South Africa (Strydom & Mentz, 2014). Cultural and social differences separate groups of students from each other, and first-year students in particular are very sensitive in this respect. Given that, in our study, the majority of the students in our cohort were of a low socioeconomic status, one cannot rule out the possibility that some of these self-reported hardships also stemmed from their backgrounds. Finally, academic staff members are crucial in helping this shift in both the formal ways in which they approach teaching and learning and informal ways in which they engage with students (Jones, 2018). In this situation, educators can support students' needs to feel involved in their education, exhibit empathy in their actions and attitudes, and personally care about their achievement.

Conclusion and Implications

Given the emphasis on effective educational practices in HEs worldwide, one might expect that the students in the present study would report high levels of engagement in those practices. However, the current study demonstrated that this was not the case. Rather, a low to moderate degree of engagement was found. At the same time, given

the emphasis of institutions on students spending more time on academics, more support for academic success and supportive relationships among students and academic staff should be provided, which was not always the case in the context of the present study.

The focus of the experience of first-year students is even more complex because of the limited information they have regarding the value of those effective educational practices along with facing the challenges of becoming a university academic student. Many students focus on academic activities that are directly connected with assessment tasks because they are unable to manage time for other important activities, such as discussing career plans or course readings with teachers outside the classroom.

The fact that the correlations among the engagement scales and outcomes were found to be non-existent, low or moderate in strength may indicate some weakness in the validity and credibility of self-reported data. One of the problems could be the inability of the respondents to provide accurate information in response to a question (Kuh, 2001). Another aspect has to do with the fact that students simply may not have enough experience with the institution to render a precise judgement or may not understand the question (Coates, 2010). Moreover, the discrepancy among the items of the engagement scales deserves particular attention for future research in the sense of understanding why students emphasise certain activities to the detriment of others (Carle et al., 2009).

The hope is that a study such as this one goes beyond providing empirical data for practice and quality enhancement. The aim of the present study is to initiate the debate about the importance of engaging students in high-quality learning in countries that are still in the stage of developing their higher education systems. Moreover, surveys of student engagement in Portuguese-speaking countries such as Mozambique require better adaptation because certain academic lexicons used are not familiar, even with proper language translation.

Declarations

Acknowledgements

This work was supported by the Swedish International Development Cooperation Agency (SIDA).

Conflicts of interest/Competing interests

The authors have no conflicts of interest that are relevant to the content of this article.

Availability of data and material

The data applied for the manuscript are available and were collected at Eduardo Mondlane University in Mozambique.

Authors' contributions

The four authors contributed to the conception and design of the study. Material preparation, data collection, and analysis were performed by Francisco De Carvalho as a PhD candidate and reviewed by Lars Geschwind as a supervisor and Maria Weurlander and Marta Mendonça as cosupervisors. The first draft of the manuscript was written by Francisco De Carvalho, and all the authors read, revised, and approved the final manuscript.

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Appendix 1: Student and staff interactions scale

	Never		Sometimes		Often		Very often		Total	
	N	%	N	%	N	%	N	%	N	%
Discussed your grades or assignments with teaching staff	141	48.1	130	44.4	15	5.1	5	1.7	291	99.3
Talked about your career plans with teaching staff or advisors	193	65.9	73	24.9	14	4.8	9	3.1	289	98.6
Discussed ideas from your readings or classes with teaching staff outside class	199	67.9	70	23.9	9	3.1	15	5.1	293	100.0
Received prompt written or oral feedback from teachers/tutors on your academic performance	133	45.4	125	42.7	14	4.8	13	4.4	285	97.3
Worked with teaching staff on activities other than coursework	262	89.4	24	8.2	4	1.4	3	1.0	293	100.0

Appendix 2: Active and collaborative learning scale

	Never		Sometimes		Often		Very often		Total	
	N	%	N	%	N	%	N	%	N	%
Made a class or online presentation	167	57.0	103	35.2	10	3.4	13	4.4	293	100.0
Asked questions or contributed to discussions in class or online	40	13.7	164	56.0	48	16.4	41	14.0	293	100.0
Worked with other students on projects during class	11	3.8	73	24.9	105	35.8	103	35.2	292	99.7
Worked with other students outside class to prepare assignments	21	7.2	76	25.9	98	33.4	97	33.1	292	99.7
Tutored or taught other university students (paid or voluntary)	173	59.0	95	32.4	16	5.5	7	2.4	291	99.3
Participated in a community-based project (e.g. volunteering) as part of your study	249	85.0	34	11.6	3	1.0	6	2.0	292	99.7
Discussed ideas from your readings or classes with others outside class	14	4.8	139	47.4	71	24.2	67	22.9	291	99.3

Appendix 3: Supportive learning environment scale

	Unavailable		Unhelpful		Unsympathetic		Available		Helpful		Sympathetic		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Relationships with teaching staff	11	3.8	3	1.0	12	4.1	121	41.3	90	30.7	52	17.7	289	98.6
	Unhelpful		Inconsiderate		Rigid		Helpful		Considerate		Flexible		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Relationships with administrative personnel	8	2.7	50	17.1	35	11.9	93	31.7	76	25.9	29	9.9	291	99.3
	Unfriendly		Unsupportive		Sense of alienation		Friendly		Supportive		Sense of belonging		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Relationships with other students	1	0.3	8	2.7	13	4.4	222	75.8	38	13.0	10	3.4	292	99.7