International Journal of Educational Management

Student engagement and concerns on studies and future professions: exploratory research in a Palestinian higher education context

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Received 20 March 2023
Revised 24 September 2023
31 January 2024
30 May 2024
18 June 2024
Accepted 20 June 2024

Abstract

Purpose – Student engagement evaluation is considered to be connected to many aspects of the management of higher education, but outside Western higher education, research and evaluation on student engagement and experiences has been limited so far. Our study focuses on the underexplored aspects of Palestinian higher education with the aim of gaining an actionable understanding from the overall student engagement situation to enhance the management and development of local teaching and learning practices.

Design/methodology/approach – A quantitatively oriented, sequential mixed-methods design was adopted. With the applied and validated engagement measurement we collected 946 engagement questionnaire responses from Palestinian university students. Quantitative data were analysed using structural equation modelling, K-means cluster analysis and chi-squared tests. Inductive and deductive thematic analysis was employed for the open answers.

Findings – With the three validated student engagement dimensions, the applied cluster analysis allowed three different engagement profile groups to be distinguished: strongly, moderately and loosely engaged. In the subsequent statistical and qualitative thematic analyses, these three engagement clusters differ in the degree to which they had a clear vision of a future profession or in their academic engagement with their studies. Moreover, qualitative analysis brought up many shared concerns regarding theoretically oriented studies and uncertain professional and career prospects in the Palestinian higher education context.

Originality/value – This study is one of the first attempts to develop tools for student engagement management in Palestinian higher education. The study findings are particularly significant for developing micro- and meso-level management practices in Palestinian higher education institutions.

Keywords Student engagement, Engagement evaluation and management, Measurement development, Palestinian higher education

Paper type Research paper

The researchers appreciate the cooperation of all study participants and the support given for conducting the research at the local higher education institution in the Gaza Strip.

Funding: This research was supported by the Ministry of Foreign Affairs in Finland (HEI-ICI grant number HEL7MO453-68).

International Journal of Educational Management
Emerald Publishing Limited
0951-354X
DOI 10.1108/IJEM-03-2023-0132

1. Introduction

Managing the educational process and student engagement requires appropriate assessment tools that are applicable in the given context. As pluralistic organisations with multiple internal and external stakeholder groups, higher education institutions require a multi-level management approach (Hattke and Frost, 2017). In other words, governance of teaching and learning in higher education happens at the macro-, meso-, and micro-levels, which refer to the higher education system, the institution, and individual practices, respectively (Hattke and Frost, 2017). This article focuses on developing meso- and micro-level management practices in a Palestinian higher education context by exploring Palestinian students' engagement with their studies and concerns about their future careers.

Generally, the concept of student engagement has enjoyed wide application in assessing student participation and agency in higher education, with particular emphasis in Western higher education (Kuh, 2001; Coates, 2007; 2010; Miller, 2016; Kandiko Howson and Buckley, 2017). Outside the West, research and evaluation of student experiences and engagement has been more dispersed, particularly in the Middle East. There is a dearth of literature on student engagement in the Palestinian higher education context. Previous studies have mainly focused on students' views of teaching methods and teacher performance (Al-Holy and Abou-dagga, 2004). Previous studies indicate that Palestinian instructors may carry out university teaching in a teacher-centred and textbook-oriented way; as such, students often need encouragement and additional feedback in conducting independent or collaborative learning activities (Koni *et al.*, 2012). However, recent findings from Palestinian higher education demonstrate that agreement on the importance of student engagement is high among teaching staff, and lecturers should be encouraged to implement activating teaching and learning practices in their classes (see Sayma *et al.*, 2023).

Palestinian higher education located in the occupied territory has operated under the pressure of many challenges over the years (see European Commission, 2014; Sayma *et al.*, 2023). Local higher education has become an important focal point for young people, for example in terms of building their future. Student enrolment rates are very high, which also makes the student population very heterogeneous, and this may challenge the standards and quality of education and learning (European Commission, 2014). In many cases, the link between the offered education programmes and the needs of the labour market can also be weak, considering the students' future employment. Universities also suffer from limited physical, material and educational resources, which further affects the quality and relevance of the education received (European Commission, 2014). Including students' concerns about their studies and future in the research agenda is therefore very important.

Our mixed-methods study focuses on these underexplored aspects of Palestinian higher education with the aim of gaining an actionable understanding of the current situation. Specifically, we applied and localised a novel student engagement measurement (Korhonen, 2021) and utilised the modelled framework for one Palestinian higher education institution with the aim of exploring the overall student engagement situation in order to manage and develop local teaching and learning practices. The addressed research questions (RQs) were: (1) What are the characteristics of student engagement based on the modelled framework among Palestinian students? (2) What kinds of engagement clusters/profiles are identified based on the modelled framework, and what associations are there between engagement clusters and students' conceptions of their future profession? and (3) What kinds of concerns do students bring up related to their study situation or future profession, and how are those associated with the identified engagement clusters? The research was conducted through cooperation between a Finnish and a Palestinian university (eTraining FinPal Project, 2017–2020). One goal of the collaboration was the adoption of the student engagement framework in the pedagogical development of university teachers and in the overall educational development of this Palestinian institution located in the Gaza Strip.

2. Literature review

2.1 Review of engagement frameworks

Focusing on engagement evaluation is considered to be connected to many aspects of the management of higher education, such as the fluency of studies, high-level learning results, satisfaction, persistence, academic achievement and quality assurance (Coates, 2010; Trowler, 2010; Groccia, 2018). Many definitions of engagement have also been presented for the basis of evaluation. The underlying idea is that gaining a better understanding and insight into the nature of students' engagement with their studies helps us to develop better support mechanisms for engagement in higher education, thus deepening the students' learning process and sense of belonging (Masika and Jones, 2016). There is a long research tradition among North American researchers of examining students' integration and involvement in studies (e.g. Tinto, 1975; Astin, 1984; Kuh, 2001; Pascarella and Terenzini, 2005) with particular interest in the interaction between the student and the institution, and this tradition is applied in different higher education contexts, such as in the USA (Kuh, 2001, 2009), the UK (Kandiko Howson and Buckley, 2017) and Australia (Coates, 2007, 2010). A highly elaborated evaluation tool is the NSSE national survey (National Survey of Student Engagement), developed by George Kuh (2001, 2009) and his working group, which US higher education institutions use extensively in their meso- and micro-level management practices aimed at improving student performance.

The European–Australian student research tradition, on the other hand, was born from the need to examine and develop teaching and learning practices in higher education that facilitate high-level and deep learning (Crosling *et al.*, 2009). This line of research has also been called the "improving student learning" (ISL) line of research (Biggs, 2003; Bryson, 2014), which has influenced the development work and the pedagogical training of university teachers in many European contexts, including Finland (see, e.g. Postareff, 2007). Prominent work in this research strand focused on students' self-regulation strategies for learning (Vermunt, 1998, 2005) and approaches to learning (Marton and Säljö, 1976; Bowden and Marton, 1998). This work on learning approaches is underpinned by the notion that those students who apply deep learning strategies want to increase their understanding of the learned content, while surface learners mainly concentrate on rote learning and memorising (Marton and Säljö, 1976; Bowden and Marton, 1998; also Entwistle *et al.*, 2003). Furthermore, studies have shown that teachers' teaching conceptions (teacher-centred or student-centred) are connected to students' approaches to learning (Trigwell *et al.*, 1999) and engagement in tasks for developing conceptual understanding (Anderson, 1997; Prosser and Trigwell, 1999). Although the focus in this research strand has been on the micro-level phenomena of engagement and learning, it has also had an indirect effect on the meso-level management of educational development and training of the teaching staff in higher education institutions.

More recent conceptualisations of student engagement in higher education emphasised its multi-dimensionality (Groccia, 2018; Gupta, 2022), which includes two relevant aspects of engagement, the academic and the social. The division of engagement into academic and social dimensions has its roots in Tinto's (1975, 1993) classic student integration theory, which posits that academic integration includes students' academic performance, intellectual development and positive learning experiences, while social integration entails positive social relationships with peers and involvement in extracurricular activities. The different strategies and practices of teaching and learning that instructors apply also play an important role in both dimensions of engagement (Tinto, 1975, 1993). This multi-dimensional approach to engagement has gained ground in current research and evaluation work, including in some Arabic higher education contexts other than Palestine (Mohammad and Abd Alwahed, 2019; Abd Alhameed, 2019). For instance, the US NSSE (Kuh, 2001, 2009) and Australasian AUSSE (Coates, 2007, 2010) engagement measurements include scales measuring both academic engagement (academic challenge, active learning) and social

engagement (student and staff interactions, enriching educational experiences, supportive learning environment).

2.2 The proposed conceptual framework

The starting point for our engagement evaluation framework is to consider those academic and social dimensions that contribute positively to engagement and learning development (e.g. Bowden *et al.*, 2021; Korhonen, 2021). Both of these dimensions cover several levels, which are introduced and discussed more concretely in the following sections. In the academic and social dimensions, we connected the US and ISL traditions in novel ways to consider and evaluate engagement (see Table 1). In addition, our own unique definition and contribution to student engagement research and evaluation is the engagement and identity dimension, which brings the learner's development perspective and future concerns into engagement evaluation (Table 1; see also Trowler, 2010; Korhonen, 2021). Personal self-confidence and transformation generally result from a successful engagement and identity process and describe the transformation and changes these students undergo during their studies (Korhonen, 2021). The "sense of self" and "sense of transformation" resulting from engagement are derived from Barnett's (2009) ontological concerns of how to better prepare students for an uncertain and highly complex future.

2.2.1 Academic dimension of engagement. Academic dimension at the personal level of engagement consists of three central evaluation levels: deep approach, organised studying and meaning of studies (see Table 1). Students' relationships to knowledge can be examined by the extent to which they apply deep approaches in learning. Students adopting a deep approach to learning are internally motivated and interested; they have the intention of understanding and seeking meaning from the knowledge in their area of study (Marton, 1988; Fry *et al.*, 2009; Vermunt and Donche, 2017). The deep approach is characterised by attempts

Table 1. Multidimensional engagement evaluation levels and goals

Levels	Goals
Academic engagement	
Deep approach	Application of deep approach to learning and cultivating active knowledge processing (Marton and Säljö, 1976; Marton, 1988; Bowden and Marton, 1998; Fry *et al.*, 2009; Coates, 2007, 2010; Vermunt and Donche, 2017)
Organised studying	Organised studying and mastery of the studying process (Parpala *et al.*, 2013; McCardle *et al.*, 2017; Vermunt, 1998, 2005; Colthorpe *et al.*, 2018; Vermunt and Donche, 2017; Winne and Hadwin, 2008; Torenbeek *et al.*, 2013)
Meaning of studies	Meaning of studies and positive correspondence with own goals and interests (Beaty *et al.*, 1997; Hortsmanshof and Zimitat, 2007; Mäkinen *et al.*, 2004; Nelson and Sandberg, 2017)
Social engagement	
Student peer community	Cooperation and connections with other students and peer learners (Kuh, 2001, 2009; Coates, 2007, 2010; Krause and Coates, 2008; Nygaard *et al.*, 2013)
Academic community	Interaction and connections with the academic staff and community (Kuh, 2001, 2009; Coates, 2007, 2010; Krause and Coates, 2008; Nygaard *et al.*, 2013)
Engagement and identity	
Self-confidence and transformation	Positive self-conception and perceived development and change during studies (Reid *et al.*, 2008; Solomonides *et al.*, 2012; Nygaard *et al.*, 2013; Kasworm and Bowles, 2012; Ryan, 2011, 2013; Ashwin *et al.*, 2015; Damianakis *et al.*, 2020; Chapman and Pyvis, 2005; Briggs *et al.*, 2012)

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to relate concepts to existing understanding in a holistic manner and aims to encourage students' self-assessment of their progress in learning tasks (Fry *et al.*, 2009).

Organised studying, in turn, refers to students' studying intentions and mastery of the study process (Table 1). In teaching and learning research, this specifically refers to students' self-regulation skills, time management and goal setting in their studying (Parpala *et al.*, 2013; McCardle *et al.*, 2017). This topic brings a broader metacognitive mastery perspective to academic engagement. Generally, well-developed self-regulation strategies mean better structuring of the learning process and the activities it entails (Vermunt, 2005; Colthorpe *et al.*, 2018; Vermunt and Donche, 2017). Self-regulated learners can effectively manage, monitor and adapt their academic and emotional commitment (Winne and Hadwin, 2008), time investment (Torenbeek *et al.*, 2013) and self-set goals (Winne and Hadwin, 2008; McCardle *et al.*, 2017) in successful studying process management.

The third personal engagement evaluation level refers, in particular, to the meaning of studies and what kind of correspondence is found with one's own personal goals and interests. The meaning of studies includes the aims, values and purposes for studying (Beaty *et al.*, 1997; Hortsmanshof and Zimitat, 2007). Previous research has mainly approached the meaning of studies in terms of study-related orientations (Beaty *et al.*, 1997; Mäkinen *et al.*, 2004). Meaning in studies is constructed in multiple ways, as concretised in questions such as the following: Is studying more instrumentally oriented to achieving some external goals or more intrinsically motivated to fulfil personally important aims (Nelson and Sandberg, 2017)?

2.2.2 Social dimension of engagement. While university studies often involve independent assignments, exam preparation and mass lectures, university life also necessitates participation in social practices where academic knowledge can be developed in collaboration with other members of the community, both in student peer communities and in academic teaching–learning communities (e.g. Nygaard *et al.*, 2013; Korhonen *et al.*, 2017, 2019). *Student peer communities* or *academic teaching–learning communities* are important levels of social engagement, and these study-related communities can create enriching learning experiences that socially accelerate student engagement (Coates, 2007; Krause and Coates, 2008; Nygaard *et al.*, 2013). Participation and cooperation in study-related communities is a process of being in relationship with others, and through this process, students learn to understand the basic questions of their discipline while gaining access to knowledge production perspectives in their field.

2.2.3 Engagement and identity dimension. Engagement and identity as a third engagement dimension is crystallised in the student's self-confidence and transformation process (Table 1), and it can be seen as resulting from the successful interplay of the previously defined academic and social dimensions of engagement. Engagement and identity are closely intertwined in students' learning processes (Reid *et al.*, 2008; Solomonides *et al.*, 2012; Nygaard *et al.*, 2013). Several scholars have put forward arguments on behalf of transformative and reflective learning in higher education (Kasworm and Bowles, 2012; Ryan, 2011, 2013; Ashwin *et al.*, 2015; Damianakis *et al.*, 2020). The transformational potential lies in students' identity processes through their engagement with disciplinary and/or professional knowledge and communities (Ashwin *et al.*, 2015). As a summarising concept, "identity" refers here to how learners interpret and reflect on their experiences. It also embodies how students function as active agents rather than passive recipients in an academic teaching–learning context (Chapman and Pyvis, 2005; Briggs *et al.*, 2012). Studies in other Arabic contexts (Abd Alhameed, 2019; Taha, 2020) have sought to understand student engagement considering expectancy-value theory or optimistic conceptions, with results showing that student engagement was predicted positively by students' expectations of success, optimism and hope, as well as the value that students place on a goal. The identity process resulting from successful engagement sets the basis for developing expertise in their

future discipline and/or profession. Thus, it is also essentially linked to the student's future expectations and concerns.

3. Methodology

3.1 Research context

The study was conducted at a Palestinian university located in the Gaza Strip. In the academic year 2021/2022, Gaza included 17 higher education institutions, along with an open education university with centres in both the West Bank and Gaza. The total workforce in Gaza's higher education that year numbered around 5,000, including approximately 2,000 academics (Institute for Palestine Studies, 2023). In the preceding academic year of 2020/2021, approximately 14,000 students graduated from these institutions. However, the unemployment rate among graduates aged 19–29 holding an Associate Diploma Certificate or higher is notably high, standing at 46% (29% in the West Bank compared to 68% in Gaza Strip), according to the Palestinian Central Bureau of Statistics (2023).

Seven decades of Israeli occupation and recurrent conflicts have significantly obstructed the Palestinian higher education system (Milton *et al.*, 2021). The Gaza Strip, in particular, has been subjected to a prolonged blockade and multiple devastating wars, with the most recent one starting in October 2023 and continuing at the time of writing this study in Spring 2024. This ongoing war has resulted in the destruction of all universities and the disruption of education for 88,000 university students in Gaza (Scholars Against the War on Palestine, 2024). The attack on education extends beyond physical buildings to target human capital, with hundreds of academics and thousands of university students killed or injured. This widespread destruction has gained attention from the scientific community, with scholars describing it as educide (Alousi, 2022) or scholasticide (Scholars Against the War on Palestine, 2024), reflecting a deliberate strategy to hinder social and economic development through the demolition of educational infrastructure and intellectual figures (Rabaia and Habash, 2024).

Although we collected the data for this study in 2020, before the ongoing war, we believe that our findings will become even more relevant in the future when the Palestinian universities focus their efforts on rebuilding and re-establishing their educational activities.

3.2 Research design

A quantitatively oriented sequential mixed-methods design was adopted in this study, with the main emphasis on the quantitative analysis (QUAN) of questionnaire data to profile students' engagement (see Figure 1). Further supplementary analysis used qualitative data (QUAL) collected via the questionnaire's open-ended question section and combined qualitative interpretations both with identified profiles of student engagement and beyond the identified profiles (Schoonenboom and Johnson, 2017) (see Figure 1). According to the mixed-methods sequential explanatory design the quantitative part is followed by qualitative part (Creswell *et al.*, 2003), but in terms of research design, both parts were considered already in data collection. The rationale for this design is the triangulation and corroboration of the two diverse forms of data in the analysis process of the same set of collected questionnaire data (Creswell and Plano Clark, 2018) in order to gain a deeper understanding of what constitutes student engagement in the challenging Palestinian higher education context and what are the students' concerns about their studies and future.

Our work is guided by the ontological and epistemological assumptions of pragmatism (Creswell and Plano Clark, 2018), which enables us to combine two approaches to pursue the research questions. As we further explain in the following sections, we use statistical analyses to assemble participant demographic data (descriptive statistics), to confirm

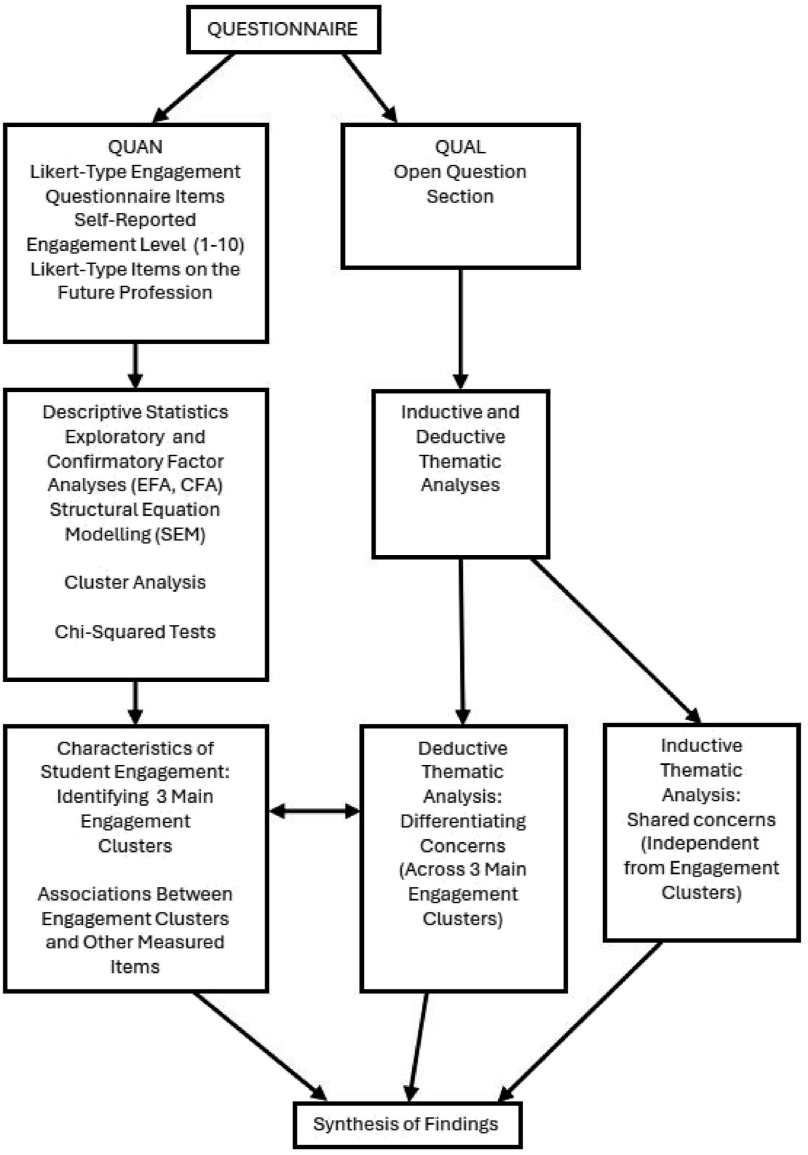

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Figure 1.
Procedural structure of the mixed-method study

engagement measurement validation (exploratory and confirmatory factor analyses), and further, to especially address RQ1 (structural equation modelling for hypothesis testing) and RQ2 (cluster analysis and chi-squared analysis), whereas for RQ3, we apply both qualitative inductive and deductive thematic analyses to interpret participants' shared or differentiating concerns from the open question section (Figure 1).

3.3 Measurement and hypothesised connections

The student engagement measurement adopted in this study was originally developed and validated to measure Finnish university students' engagement in the beginning phases of their studies (see Korhonen, 2021). For this Nexus questionnaire development, several previously defined and validated measures were utilised, such as LEARN/HowULearn (Parpala and Lindblom-Ylänne, 2012), ETLQ/ASSIST (Entwistle *et al.*, 2003; McCune and Hounsell, 2005), Nordic medical students' well-being and study orientation (MED NORD) inventory (Lonka *et al.*, 2008), and the Inventory of General Study Orientations (IGSO) (Mäkinen *et al.*, 2004).

The validated version of the Nexus questionnaire for Finnish students originally comprised 8 measurable dimensions/scales and 39 items. In this study, we adapted this into a shorter version (31 items) by particularly addressing academic and social dimensions that contribute positively to the engagement and identity dimension (Bowden *et al.*, 2021). We considered these dimensions to be the best suited for the target group when examining their engagement in different stages of their studies. Based on our assumption, the academic and social dimensions and levels of engagement are the basic elements of engagement, while the engagement and identity dimension results from the successful interplay of these basic engagement dimensions. Accordingly, we set the following directional hypotheses to be tested (see Figure 2), thus addressing RQ1 (What are the characteristics of student engagement based on the modelled framework among Palestinian students?):

H1. The deep approach (DA) contributes positively to self-confidence and transformation (SCT).

H2. Organised study (OS) contributes positively to self-confidence and transformation (SCT).

H3. Meaning of studies (MS) contributes positively to self-confidence and transformation (SCT).

H4. The student peer community (PC) contributes positively to self-confidence and transformation (SCT).

H5. The academic community (AC) contributes positively to self-confidence and transformation (SCT).

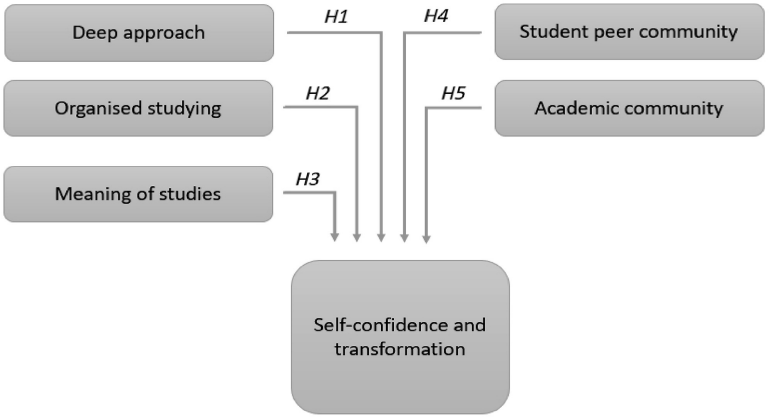

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Figure 2.
Modelled framework and hypothesised interconnections of the defined levels of engagement

The adapted online questionnaire consisted of two parts. The first part included six questions about background information and two questions using five-degree Likert scales: (1) the extent to which students have a clear vision of the future profession after university studies and (2) the extent to which the university education/field of study prepares students for their chosen profession. The second part comprised one item measuring students' self-reported level of engagement ("*How engaged are you in your current studies at the moment?*") on a Likert scale from 1 (not engaged at all) to 10 (very engaged), along with the 31 items of the Nexus questionnaire measured on a Likert scale from 1 (strongly disagree) to 5 (strongly agree). See Appendix for the 31 engagement items used.

The items in the Nexus scales were originally translated and modified in Finnish (Korhonen, 2021), but this study used the original English items as a starting point. In addition, the SCT scale was modified to better suit Palestinian students. This modification included specific items from Ramsden's (1991) internationally utilised Course Evaluation Questionnaire (CEQ) measurement. For the Palestinian target group, the research team translated the questionnaire items from English into Arabic. To ensure the reliability of the translation, a Palestinian scholar performed a back translation into English.

3.4 Data collection and participants

During the spring semester 2020, the online self-reported engagement questionnaire was sent to all university students at the Palestinian university participating in the aforementioned eTraining FinPal project. A total of 1,544 students participated in the study, of which 946 responses were usable and valid for statistical analysis. The ages ranged from 17 to 41 years, with an average of 20.54 years (SD = 3.036 years). Table 2 summarises participants' demographic information.

3.5 Data analysis

We performed a set of preliminary analyses to ensure the data appropriateness for Structural equation modelling (SEM) as recommended by Tenko and Marcoulides (2006). Missing values were handled using the multiple imputation (MI) technique, which is preferable over other techniques in this context (Green, 2016). Normality of the data was investigated against thresholds for skewness (<2) and kurtosis (<7) (Kim, 2013). No violations of these assumptions were found (skewness and Kurtosis statistics are presented along with each item in Appendix. One item related to Meaning of Studies factor has Kurtosis value of 8.149. This factor was omitted later from the analysis as will be described below. Detection of outliers was investigated with Mahalanobis distances. The findings suggested no deletion was needed as the co-occurring probability values were greater than 0.001 (Tabachnick and Fidell, 2007). Collinearity was checked through the computation of variance inflation factor (VIF). VIF values for the study variables were all below 5, suggesting that no collinearity issues. We also tested for common method variance. Since a single questionnaire captured the responses for all the study variables from the same individuals, the data could have suffered from common method variance (CMV). As such, we used Harman's one-factor test (Podsakoff *et al.*, 2003) to examine the CMV. All items for our variables were entered into an unrotated exploratory factor analysis using SPSS to force a one-factor solution. The results indicated that the single factor accounted for only 29.22% of the variance. These results suggest that CMV was not a major concern in this study.

SEM was employed to test the hypothesised model using the Analysis of Moment Structures (AMOS 22.0) software package. The model utilised the following control variables: gender, age, faculty and academic degree. To estimate the model parameters, we used the Bootstrap ML method with 5,000 bootstrap samples and 95% bias-corrected confidence intervals (CIs) (Preacher and Hayes, 2008). Green (2016) reviewed the methods and tools for

Variable	f	%
Gender		
Female	613	64.8
Male	333	35.2
Total	*946*	100.0
Study level		
1st level	292	30.9
2nd level	203	21.5
3rd level	230	24.3
4th level	136	14.4
5th level	19	2.0
6th level	11	1.2
1st semester at Master's level	6	0.6
2nd semester at Master's level	31	3.3
3rd semester at Master's level	7	0.7
Thesis preparation at Master's level	11	1.2
Total	*946*	100.0
Faculty		
Faculty of Osol Aldin (theology)	9	1.0
Faculty of Sharia and Law	156	16.5
Faculty of Arts	112	11.8
Faculty of Education	88	9.3
Faculty of Economics and Political Sciences	37	3.9
Faculty of Nursing	26	2.7
Faculty of IT	70	7.4
Faculty of Science	31	3.3
Faculty of Engineering	104	11.0
Faculty of Medicine	261	27.6
Faculty of Health Sciences	52	5.5
Total	*946*	100.0

Source(s): Created by authors

Table 2. Participant demographic data

conducting SEM analysis in higher education studies and identified bootstrapping as a robust technique for deriving estimations and assessing uncertainties. To assess the model fit, we used well-established indices, such as the confirmatory fit index (CFI), incremental fit index (IFI), standardised root mean square residual (SRMR) and root mean square error of approximation (RMSEA), as well as chi-squared test statistics. According to Hu and Bentler (1999), generally acceptable values include those greater than 0.90 for the CFI and IFI, those less than 0.06 for the RMSEA and those less than 0.08 for the SRMR. For the ratio of χ^2 to degrees of freedom (DF) values of less than 3 indicate a reasonable fit (Marsh and Hocevar, 1985). Finally, the Akaike information criterion (AIC) was used to compare the alternative models, where the model with a smaller AIC value is better (Schreiber *et al.*, 2006). In addition, convergent and discriminant validity were examined (Hair, 2010). Convergent validity was examined by calculating composite reliability (CR) and average variance extracted (AVE). Convergent validity is supported when the AVE is 0.5 or higher and the CR is 0.7 or higher for each construct. Discriminant validity was assessed using the Heterotrait–Monotrait Ratio (HTMT) criterion, where values should be below the threshold of 0.90 (Henseler *et al.*, 2015).

We used the Statistical Package for the Social Sciences (SPSS 22.0) to conduct the descriptive and cluster analyses. The K-means clustering method was utilised with the iterate and classify options. We forced the number of clusters to be three because we were aiming to distinguish three groups in terms of engagement (i.e. loosely, moderately and highly engaged

student groups). These engagement groups identified based on the K-means cluster analysis were used to verify the associations in relation to the other items and background questions in the survey: vision about the future profession, degree to which students agree that their university education has prepared them for their future profession and self-reported level of engagement with their disciplinary field.

After the quantitative analysis phase, we conducted a qualitative analysis of the students' responses to the open-ended question regarding current concerns in their studies and future profession (see Figure 1). Qualitative analysis was conducted by integrating principles of inductive and deductive thematic analysis (Braun and Clarke, 2006; Vaismoradi *et al.*, 2013) also called inductive/deductive hybrid thematic analysis (Fereday and Muir-Cochrane, 2006) and previously used also in mixed-methods research (see Proudfoot, 2023). Deduction involves a predetermined theoretical or conceptual model being tested against observations, while induction begins with observations and strives to find a model formed from them (Proudfoot, 2023). The open-ended responses in our questionnaire were first translated from Arabic to English and relevant expressions of concerns were identified and further coded (reduced to the expressive form) and categorised inductively and deductively. In the inductive analysis, the expressions of concerns were coded and categorised into three inductively defined sub-themes describing the commonly shared study experiences of students participating in this study (regardless of the level of engagement). Then we also deductively coded and categorised the expressions of concerns according to three engagement levels identified in the statistical cluster analysis (loosely, moderately, or strongly engaged). As further described in the Results section, through this inductive and deductive thematic analysis we identified two main themes named "shared concerns" and "differentiating concerns", both with three sub-themes.

4. Results

4.1 Measurement validation

Before submitting the data to SEM analysis, we first conducted an exploratory factor analysis (EFA) using the principal axis factoring method and Promax rotation to screen and refine the data. EFA is a multivariate technique used to define the relationships between the variables under investigation (Hair, 2010). We used a criterion of eigenvalues greater than 1 to determine the number of items to be retained. As a result, four items were excluded due to cross-loading and low communality. The meaning of studies (MS) factor was excluded due to extremely low reliability (alpha coefficient being only 0.47). The problem appeared to result from two inverted, negatively worded items in this dimension. EFA yielded five factors with an item loading above 0.40. Table 3 shows the means, standard deviations and zero-order Pearson correlations between the study variables along with the Cronbach alpha values.

	1	2	3	4	5
1. Deep approach (DA)	1	0.372**	0.362**	0.241**	0.503**
2. Organised study (OS)		1	0.422**	0.215**	0.498**
3. Academic community (AC)			1	0.518**	0.678**
4. Peer community (PC)				1	0.408**
5. Self-confidence and transformation (SCT)					1
M	4.15	3.49	3.42	3.42	3.73
SD	0.485	0.689	0.753	0.839	0.657
Alpha coefficient	0.64	0.76	0.79	0.79	0.73

Note(s): $^{**}p < 0.01$
Source(s): Created by authors

Table 3. Correlations and descriptive statistics between the study variables

4.2 Measurement model

We tested the measurement model using confirmatory factor analysis (CFA). The measurement model consisted of the following latent variables: DA and OS (representing academic and emotional commitment), AC and PC (representing social learning and participation) and SCT. One of our aims in the measurement model was to examine whether DA, OS, AC and PC are better presented as first-order or second-order factors. Therefore, we developed two competent models. We freely estimated the loadings of the indicators (items) on their corresponding latent variables, and all latent variables were free to correlate with each other. No error terms were allowed to be correlated. The results showed that the first-order model fitted the data better (see Table 4), and accordingly, we continued to the structural model. The convergent and discriminant validity of the final CFA model was established (Tables 5 and 6). The CR values of the constructs were acceptable. AVE values were below the threshold of 0.5. However, according to Fornell and Larcker (1981), even if AVE is less than 0.5, but CR is higher than 0.6, the convergent validity of the construct is still adequate. Table 6 shows that the HTMT ratio between the constructs was below 0.9, and the discriminant validity was confirmed.

Table 4.
Fit indices of the measurement models

Model	Fit indices								
	χ^2	*df*	*p*	χ^2/df	CFI	IFI	RMSEA	SRMR	AIC
First-order	889.945	220	<0.001	4.045	0.903	0.903	0.057	0.0513	1001.945
Second-order	938.895	224	<0.001	4.191	0.896	0.897	0.058	0.0575	1042.895

Source(s): Created by authors

Table 5.
AVE and CR values of the model constructs

Construct	Items	Standardised loadings	AVE	CR
DA	DA_01	0.623	0.33	0.65
	DA_03	0.439		
	DA_04	0.532		
	DA_05	0.661		
OS	OS_01	0.72	0.41	0.77
	OS_02	0.425		
	OS_03	0.713		
	OS_05	0.492		
	OS_06	0.769		
AC	AC_01	0.675	0.43	0.79
	AC_02	0.717		
	AC_03	0.699		
	AC_04	0.581		
	AC_05	0.605		
PC	PC_01	0.625	0.48	0.79
	PC_02	0.681		
	PC_03	0.761		
	PC_04	0.702		
SCT	CT_01	0.59	0.36	0.74
	CT_02	0.54		
	CT_03	0.715		
	CT_05	0.625		
	CT_06	0.523		

Source(s): Created by authors

4.3 Structural model

We set the structural paths according to our hypotheses. First, the model fit indices showed closed values to the acceptable threshold. Thus, we consulted the modification indices, which suggested that connections between indicators' errors related to the same variable. We ran the model and examined the fit indices again, indicating an adequate fit to the data ($\chi^2 = 1{,}048.297$, df = 299, $p < 0.001$, $\chi^2/\text{df} = 3.506$, CFI = 0.902, IFI = 0.903, RMSEA = 0.051, SRMR = 0.0579). The model accounted for 87% of the variance in the self-confidence and transformation variables.

4.4 Cluster analysis

To distinguish between students based on their Nexus scale scores, the five variables of the model were subjected to K-means cluster analysis. The results revealed three meaningful and distinguished groups (see Table 7) according to the ANOVA test: loosely engaged ($n = 143$), moderately engaged ($n = 398$), and strongly engaged ($n = 405$).

4.5 Association between engagement clusters and students' self-reported level of engagement

To test the validity of the clustering output, we ran a chi-squared test to examine the association between students' membership in the three engagement clusters, as suggested by the analysis and the students' self-reported level of engagement (1–10). The results revealed a significant strong association $\chi^2(18) = 384.38$, $p < 0.001$, Cramer's V = 0.45, indicating that students who reported their level of engagement to be between 1 and 3 were more likely to belong to the loosely engaged group, while students who reported their level of engagement to be between 4 and 6 were more likely to belong to the moderately engaged group. Finally, students who reported their level of engagement to be between 7 and 10 were more likely to belong to the strongly engaged group.

	DA	OS	AC	PC	SCT
DA					
OS	0.488				
AC	0.507	0.561			
PC	0.330	0.288	0.681		
SCT	0.717	0.654	0.864	0.548	

Source(s): Created by authors

Table 6. Heterotrait–Monotrait ratio (HTMT)

Engagement clusters		Deep approach	Organised study	Academic community	Peer community	Self-confidence and transformation
1 (Loosely engaged)	M	3.67	2.72	2.29	2.41	2.73
	SD	0.595	0.727	0.539	0.857	0.584
2 (Moderately engaged)	M	4.14	3.38	3.24	3.21	3.63
	SD	0.394	0.569	0.497	0.668	0.427
3 (Strongly engaged)	M	4.33	3.86	4.00	3.99	4.18
	SD	0.401	0.493	0.400	0.476	0.383

Source(s): Created by authors

Table 7. Engagement cluster groups

4.6 Association between engagement clusters and the degree to which students have a clear vision of their future profession

Next, we tested the extent to which students in different engagement clusters had a clear vision about their future professions. Results of a chi-squared test indicated a significant moderate association ($\chi^2(6) = 59.74$, $p < 0.001$, Cramer's V = 0.18). In other words, the findings suggest that students who lack a clear vision about their future profession are more likely to belong to loosely and moderately engaged groups. Meanwhile, students who have a very weak idea of their possible future professions are more likely to belong to the moderately engaged group. Students with some idea about their future profession are more likely to belong to the moderately and strongly engaged groups. Finally, students who have a clear profession in mind are more likely to belong to the strongly engaged group.

4.7 Association between engagement clusters and the degree to which students agree that their university education has prepared them for their future profession

A chi-squared test was also conducted to examine the extent to which students in different engagement clusters agreed that their university education had prepared them for their future profession. The findings showed a significant strong association $\chi^2(6) = 182.19$, $p < 0.001$, Cramer's V = 0.31, suggesting that students who strongly disagree are more likely to belong to the loosely engaged group. Students who either disagree or remain neutral are more likely to belong to the moderately engaged group. Finally, students who agree or strongly agree are more likely to belong to the strongly engaged group.

4.8 Shared and differentiating concerns related to studying and future profession

Expressions of concerns in the open question section were grouped in inductive/deductive hybrid thematic analysis (Fereday and Muir-Cochrane, 2006; Proudfoot, 2023) into two main themes: "shared concerns" and "differentiating concerns". Shared concerns involved those that were commonly shared in terms of studies and future professions, while differentiating concerns involved those that were specifically related to the identified engagement cluster membership at a personal level (see Figure 3).

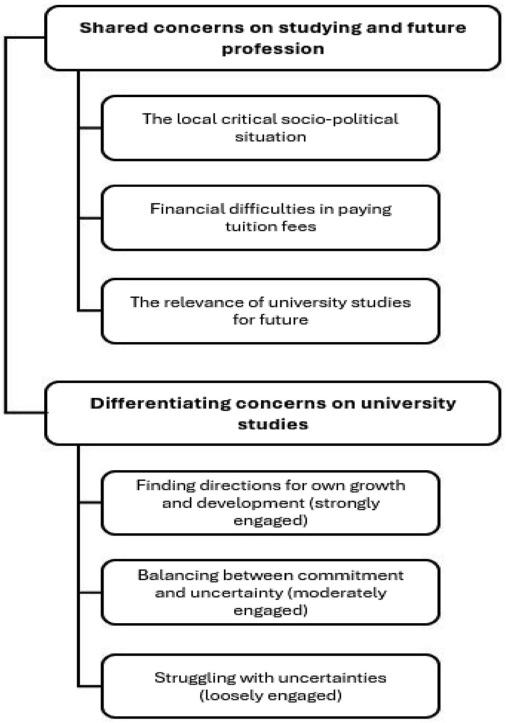
The "shared concerns" generally brought visible the commonly shared experiences of Palestinian students related to the country's uncertain socio-political situation, the pandemic at the time of the study and the theory-intensive curriculum in their education. Overall, these shared concerns came up widely in student responses. In particular, *the local critical socio-political situatio*n in the Palestinian territories was most often mentioned and created a first specific sub-theme in shared concerns. In addition, students experienced the prevailing pandemic situation at the time of the study and the consequent mandatory transition to distance learning as stressful and difficult, adding a specific special experience dimension to the critical socio-political situation sub-theme. For example, students expressed the following kind of concerns related to this sub-theme:

> The professional future and the labour market in the Gaza Strip, which is under siege. (R521, moderately engaged)

> How the university is affected by illogical means of development - compared to our circumstances - and how that affects my university life and academic future. (R475, strongly engaged)

In shared concerns, worries about financing studies and tuition fees were also brought up extensively. Because of this, *financial difficulties in paying tuition fees* proved to be a second sub-theme in these shared concerns:

> Obtaining an excellent GPA, in order to assist my family with university tuition fees. (R601, strongly engaged)



Source(s): Created by authors

Figure 3.
Themes and sub-themes of shared and differentiating concerns

> . . . and tuition fees in particular, which are a huge burden on parents, can be a reason for stopping my studies . . . . (R636, loosely engaged)

Third sub-theme in shared concerns was *the relevance of university studies for the future*. Many viewed the content as very theoretical and inapplicable to the needs of working life due to the lack of practical knowledge or internships. Many seemed to be preoccupied with their future and their professional careers after university, particularly given the current socio-political situation where employment was perceived as very precarious:

> . . . there are large amounts of theoretical curricula, which force the student to memorise, not to understand. (R251, moderately engaged)

Those concerns that were specific to students' engagement situation were thematically named as *"differentiating concerns"* and related to how students viewed their agency as learners and their sense of self-confidence and transformation within ongoing university studies. In particular, the differentiating concerns highlighted the varying balance of certainty or uncertainty associated with personal academic engagement in the different engagement profile groups (Figure 3). Related to the strongly engaged group, typical differentiating concerns included references to one's own development efforts to become an expert in a studied domain. Another differentiating concern involved commentary and reflection on one's own growth and development. Strongly engaged students seemed to be very goal-oriented in their efforts and demonstrated determination in their studies. These goals can be seen in concerns such as the following:

> The issue of knowing more information about my field of study. (R986, strongly engaged)
>
> How will university study help me to form my personality? . . . How will my university studies lead me to take responsibility for myself? (R306, strongly engaged)

For those in the strong engagement cluster, internationalisation efforts also emerged. Many of these students described specific goals for studying abroad while also expressing societal goals to enhance communication with the world outside the Gaza Strip.

In many respects, the moderately engaged group resembled the strongly engaged one. However, a distinctive feature in their comments was the uncertainty they expressed in relation to their own academic skills and success (see Figure 4).

> Fear of not mastering the English language . . . Fear of not achieving the GPA I am seeking . . . Fear of not being distinguished in my study field. (R60, moderately engaged)

The loosely engaged group seemed to differ from the other two engagement groups, and many of them seemed to be frustrated and to experience uncertainty in their present situation. Some of them also clearly mentioned not feeling engaged or having lost interest in their current field of study. This sentiment can be seen in the following statements:

> I am not engaged at all in my field of study. I don't find interest in this field of study. I cannot study. (R79, loosely engaged)
>
> I haven't acquired any skills from the university. I feel that I don't have the ability to keep up with my field of study. (R320, loosely engaged)

The inductive and deductive thematic analysis allowed the identification of concerns and added descriptions of the students' experiences and engagement, particularly in terms of perspectives on their studies and future professions, thus addressing RQ3.

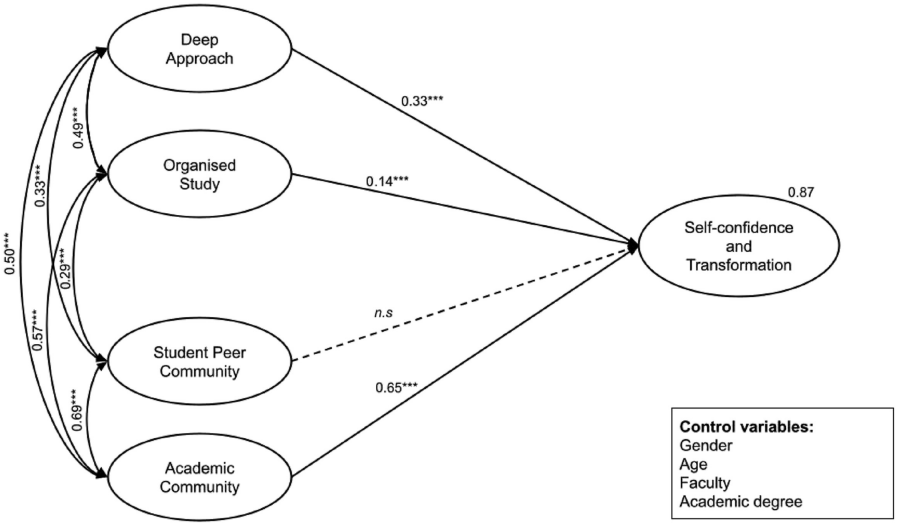


Figure 4.
Structural model. Standardised regression coefficients reported (***$p < 0.001$)

Source(s): Created by authors

5. Discussion

5.1 Discussion of the findings

This study aims to understand student engagement within the Palestinian higher education context and its relationship with students' study concerns and future career aspirations. Our findings partially confirm the contributions of academic and social dimensions to student engagement. Unlike studies conducted in Western settings (Korhonen, 2021), our study identified deep approach (H1), organised studying (H2), and academic community (H5) as the most influential factors in fostering self-confidence and transformation. However, the statistically significant connection with the student peer community (H4) was not observed, leading to its rejection. So far, there has been no equivalent research on student engagement in Palestinian context. But previous research of engagement in Western higher education would have allowed us to assume, among other hypotheses, the realisation of the fourth hypothesis (H4) (see Kuh, 2001; Coates, 2007; Krause and Coates, 2008; Miller, 2016; Masika and Jones, 2016; Gupta, 2022; Korhonen, 2021). The fact that the importance of student peer communities did not come up as a factor supporting engagement reflects the effects of the prevailing teaching culture which has not yet provided sufficient support for student-centred activities and guidance (Koni *et al.*, 2012; Sayma *et al.*, 2023).

Using the validated dimensions in the model, we were able to identify three distinct engagement groups through cluster analysis: strongly engaged, moderately engaged, and loosely engaged. This categorization was further supported by comparing the cluster groups with students' self-reported levels of engagement. It is noteworthy from our findings that, despite the challenging higher education situation and the high unemployment rate in Gaza, the largest cluster consisted of strongly engaged students (43%), followed by a relatively similar proportion of moderately engaged students (42%) while loosely engaged students were the least (15%). This result contributes to existing literature (Irfan, 2024), emphasising the high value Palestinians place on education as a potent source of resilience and a pathway out of crises.

The three identified engagement clusters also provided a clear distinction between these groups for the second research question: the strongly engaged demonstrated a clear conception of their future profession, the moderately engaged had a weaker conception, while the loosely engaged lacked a clear conception. These findings align with those reported by Almassri (2023), who studied how some new graduates in Gaza succeeded in gaining paid employment opportunities within a year after graduation. Almassri provided examples from the interviewees' narratives to illustrate how the clarity of their future profession helped them focus on specific goals and learning strategies.

The three cluster groups also served as an orientation for the next phase of the mixed-method study when analysing the open-ended responses using thematic content analysis. In particular, the identified "differentiating concerns" relating to the students' engagement situation complemented the results of the statistical analysis. This added layer was particularly apparent for the third research question, which examined concerns about university studies and preparation for future professional life. The strongly engaged students seemed to have more determined development efforts to become experts in a studied domain; they also had a more reflective orientation towards their own growth and development. The loosely engaged students seemed to be frustrated, disappointed or uninterested in their studies more often. Similarly, Almassri (2023) study found that engaged students exerted significant, independent, and strategic effort to seize employability development opportunities during their academic studies, especially in the context of protracted hardships.

More extensively, the "shared concerns" highlighted many of the challenges in Palestinian higher education that are common to students, regardless of their current engagement situation. In the shared concerns, the socio-political situation in the Palestinian territories

emerged often, as reflected in statements of uncertainty about the future and professional career prospects (Cristillo, 2010; Ramahi, 2015). These findings align with those presented by Bashitialshaaer *et al.* (2021), which indicate that economic conditions impact students' ability to pursue their studies and cover fees, leading to potential dropout rates. These challenges are exacerbated by the overall insecurity in Gaza.

In a socio-politically unstable situation, uncertain career prospects naturally become accentuated. Within Arabic literature, some studies have linked student engagement to future concerns. For example, Hadi (2018) found a low positive correlation ($r = 0.35$) between academic engagement and worries about the future. Other studies have also investigated the connection between engagement and the level of students' anxiety towards their academic achievement. A study by Asghar (2014), for instance, found that the level of student engagement was negatively related to anxiety ($r = -0.13$). In our results, the loosely engaged students in particular seemed to be dissatisfied and anxious. This heightened anxiety may be attributed to the timing of data collection, which coincided with the onset of the pandemic. The emergence of COVID-19, coupled with Gaza's socio-economic challenges such as poverty and inadequate access to basic necessities (e.g., electricity), likely contributed to increased anxiety among students. A recent study conducted by Radwan *et al.* (2022) among 1,252 university students in Gaza during the pandemic revealed that approximately 78.0% of the sample experienced anxiety-related issues. This anxiety was positively associated with COVID-19-related stressors, including economic consequences, disruptions to daily routines, and educational status. Their study also highlighted that:

> particularly in socially disadvantaged communities, university students are among the most severely impacted by the virus because of concerns about academic achievements and future employment during university. Even prior to the COVID-19 pandemic, students were also experiencing increasing levels of anxiety, negative well-being, depression, stress, and psychosomatic difficulties (p. 2).

Taken together, it seems that university students in Gaza suffer from compounded stressors of navigating academic responsibilities within instability and uncertainty. These factors are likely to significantly affect their engagement and career choices in the long run.

5.2 Theoretical contribution

Our multidimensional approach to examining student engagement combined the previously mentioned US and ISL research strands and academic and social dimensions in student engagement evaluation. Specifically, our academic engagement evaluation combined three perspectives: students' deep approach to learning (Marton and Säljö, 1976; Marton, 1988; Bowden and Marton, 1998, Vermunt and Donche, 2017), organized studying efforts (Vermunt, 1998, 2005; Winne and Hadwin, 2008; Vermunt and Donche, 2017; Colthorpe *et al.*, 2018), and meaning of studies (Beaty *et al.*, 1997; Hortsmanshof and Zimitat, 2007; Nelson and Sandberg, 2017). In this way, an attempt was made to gain a comprehensive understanding of the student's personal activity and relationship to studying. Correspondingly, cooperation and connections with student peer community (Kuh, 2001, 2009; Coates, 2007, 2010; Krause and Coates, 2008) and connections with academic community (Kuh, 2001, 2009; Coates, 2007, 2010; Krause and Coates, 2008), formed the basis for social engagement evaluation. Based on previous student engagement research, the very central importance of this social dimension in supporting and mastering studying and learning has been recognized (Tinto, 1975, 1993; Trowler, 2010; Masika and Jones, 2016; Groccia, 2018). As an important novel contribution, we added a new measurement dimension of engagement and identity, which specifically relates to the student's positive self-confidence and identity formation during studies (Reid *et al.*, 2008; Solomonides *et al.*, 2012; Ryan, 2011, 2013). This perspective has been discussed in

the student engagement literature, but so far it has not been widely utilized in measurements of engagement. This dimension better brought students' development perspective and future concerns into engagement evaluation, which in this case was an essential starting point for obtaining a more comprehensive view of engagement. This theoretically and conceptually created model worked very well, with the exception of the meaning of studies scale (see discussion of limitations).

This multidimensional approach enabled us to identify important aspects of student engagement and their complex connections within Palestinian higher education. We were able to identify three different engagement cluster groups, which also served as support for the qualitative analysis of the open question. Based on the results, the perceived lesser significance and support of student-centred activities for studies emerged, which requires attention for the development of Palestinian higher education. The results also generally indicate that future engagement research should consider the relationship with one's self-conception and the ongoing transformation process during studies, which is generally related to the interconnected relationship between a student's personal engagement and identity. Positive self-conception and perceived development and change during studies can be seen as important unofficial goals of higher education, especially in an area where future prospects after graduation can be very challenging and uncertain.

5.3 Managerial implications

In terms of practical and managerial implications, the study findings are particularly significant for developing meso- and micro-level management practices in Palestinian higher education institutions. This study can inform meso-level management in developing institution-wide support services for students and teaching staff. Namely, the questionnaire used in this study could be incorporated into the institutional quality assurance and enhancement efforts among Palestinian higher education institutions. The questionnaire can help institutions (academic leaders and administrative professionals) monitor students' engagement across different cohorts and disciplines, further developing locally appropriate mechanisms of pedagogical and professional support for students and teaching staff.

The findings highlight a significant correlation between students' career clarity, preparedness, and levels of engagement, underscoring the importance of career guidance and counselling in higher education institutions. This is especially crucial in regions such as Palestine, where the high unemployment rate amplifies the significance of students' career choices. Therefore, students' career development and future employment prospects should be systematically supported at the institutional level through, for example, career guidance services or courses offered to students and graduates. Understanding and supporting students' professional development through continuous career guidance can alleviate the feeling of career uncertainty and improve overall student engagement, deepening their learning process.

Additionally, higher education institutions should support their teaching staff and education coordinators in incorporating student engagement dimensions into the curriculum development process and teaching and learning practices (micro-level management). Professional and pedagogical development training and courses for teaching staff could provide arenas for outlining institutional actions for student engagement, such as, for instance, a stronger focus on professional knowledge and expertise in the study curricula combined with student-centred activities in classrooms. Offering professional and pedagogical development opportunities for university teachers will support their work and contribute to the overall quality of teaching and learning processes (micro- and meso-level management).

These actions are particularly relevant for the longer-term development of Palestinian higher education. Shorter-term goals relate to post-war rebuilding of the higher education sector in Palestine, especially in the Gaza Strip, prioritising the re-establishment of education provision. National collaboration with universities in the West Bank, as well as international cooperation, becomes essential in the process of higher education recovery in the Gaza Strip. Initiatives such as remote study options in West Bank universities or abroad are valuable (e.g. some UK universities offer distance learning options for Gazan students). Offering scholarships and other opportunities to pursue or continue higher education abroad is particularly important for displaced Palestinian students and young refugees. Equally important is support for Palestinian academics through schemes such as visiting researcher or visiting teacher programs.

6. Conclusion

6.1 Concluding remarks

In summary, this study underscores the complex dynamics of student engagement within the Palestinian higher education context. Our findings reveal that academic and social dimensions significantly contribute to student engagement, although the expected role of peer communities was not evident. The distinct engagement clusters highlight varying degrees of clarity regarding future professions, reflecting the broader socio-political and economic challenges faced by students.

It is worth noting that the data for this study were collected in 2020, at the beginning of the COVID-19 pandemic and before the current war in the Gaza Strip. Although the results depict the situation at that time, the implications for theory and practice may become even more relevant in the future, particularly in the recovery and further development of the Palestinian higher education sector. Other studies have demonstrated the challenges of managing higher education during global crises like the pandemic (e.g. Neuwirth *et al.*, 2021). However, managing higher education in war-torn contexts presents even greater challenges (Aldahdouh *et al.*, 2024). It is anticipated that student engagement would be significantly affected by the ongoing educide in Gaza, yet this area remains underexplored. Future endeavours should prioritise monitoring student engagement post-war and implementing timely interventions to aid in their recovery. It would be useful for future research to include a longitudinal study of student engagement development over the years to learn important additional information for developing and enhancing Palestinian higher education.

6.2 Limitations

The findings show that the factor structure that underlies the 31-item version of the applied Nexus engagement measurement (Korhonen, 2021) is not automatically replicated with Palestinian students. As mentioned earlier, the meaning of studies (MS) scale was excluded from the analysis because of low reliability, while the other five scales demonstrated adequate internal coherence and reliability. Two of the items on the MS scale were presented in reverse order and were thus presented in a negative tone for the respondent. This seemed to be too confusing for Arabic-speaking respondents. Some previous studies have drawn similar conclusions when validating international measurements in the Arabic context using negatively worded items (Mansour *et al.*, 2021; Dodeen, 2015).

6.3 Agenda for future research

Future research that uses a multidimensional approach to student engagement should consider the relationship between engagement and identity. Specifically, researchers should explore one's self-conception and the ongoing transformation process during studies. The

identity dimension of student engagement is particularly relevant in higher education contexts undergoing dynamic changes, which can significantly influence the future career prospects of students and graduates.

When it comes to the use of the Nexus measurement or similar measures in Palestinian higher education institutions (and among Arabic-speaking respondents), it is recommended that the instruments be modified so that the measurement items are worded in a positive tone. Additionally, it would be useful for future research to include cross-sectional and longitudinal studies on student engagement development over the years. Such research approaches could provide robust data for further development and enhancement of Palestinian higher education.

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Appendix

All items were measured on the following Likert scale: (1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree (neutral); 4 = Agree; 5 = Strongly agree; 6 = I don't know/I don't want to answer)

Scales and items		Mean	*SD*	Skewness	*S.E.*	Kurtosis	*S.E.*
Deep approach (DA) – 5 items							
DA_01	I usually set out to understand for myself the meaning of what we have to learn	4.39	0.647	−1.272	0.080	3.872	0.159
DA_02	Ideas I've come across in my academic reading often set me off on long chains of thought	3.64	0.863	−0.688	0.080	0.460	0.159
DA_03	It is important to consciously strive to relate new information with previous knowledge	4.38	0.623	−0.937	0.080	2.228	0.159
DA_04	I try to relate ideas I come across to those in other topics or other courses whenever possible	4.07	0.720	−0.992	0.080	2.226	0.159
DA_05	I usually look at evidence carefully to reach my own conclusion about what I'm studying	3.76	0.794	−0.880	0.080	1.191	0.159
Organised study (OS) – 6 items							
OS_01	I am systematic and organised in my studying	3.30	0.980	−0.531	0.080	−0.407	0.159
OS_02	I put a lot of effort into my studying	3.37	1.086	−0.419	0.080	−0.580	0.159
OS_03	I carefully prioritise my time to make sure I can fit everything in	3.49	0.972	−0.544	0.080	−0.250	0.159
OS_04	I'm pretty good at getting down to work whenever I need to	4.03	0.934	−1.221	0.080	1.632	0.159
OS_05	I recognize the ways I learn best	3.79	0.847	−0.992	0.080	1.136	0.159
OS_06	I organise my study time carefully to make the best use of it	3.48	0.928	−0.634	0.080	−0.037	0.159
Meaning of studies (MS) – 4 items							
MS_01	I can hardly find any meaning in the studies *(REVERSE)*	3.40	1.158	−0.464	0.080	−0.708	0.159
MS_02	I feel that I am losing interest in my study field *(REVERSE)*	3.28	1.188	−0.109	0.080	−1.126	0.159
MS_03	My study programme is just right for me	3.08	1.071	−0.264	0.080	−0.761	0.159
MS_04	Completing my studies is important to me	4.70	0.604	−2.492	0.080	8.149	0.159
Self-confidence and transformation (SCT) – 6 items							
CT_01	I consider what I have learned to be valuable for my future	4.04	0.910	−1.093	0.080	1.261	0.159
CT_02	Studies develop my confidence to investigate new ideas	3.89	0.797	−1.034	0.080	1.721	0.159
CT_03	University is stimulating my enthusiasm for further learning	3.27	1.184	−0.471	0.080	−0.728	0.159
CT_04	I believe I am doing well in my studies	3.41	0.981	−0.571	0.080	−0.278	0.159
CT_05	I learn to apply principles from these studies to new situations	3.67	0.855	−1.001	0.080	1.118	0.159
CT_06	My studies provide me with a broad overview of my field of knowledge	3.79	0.928	−0.964	0.080	0.913	0.159

(*continued*)

Table A1. Adapted nexus questionnaire

All items were measured on the following Likert scale: (1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree (neutral); 4 = Agree; 5 = Strongly agree; 6 = I don't know/I don't want to answer)

Scales and items		Mean	*SD*	Skewness	*S.E.*	Kurtosis	*S.E.*
Academic community (AC) – 5 items							
AC_01	I feel I belong to the university community	3.41	1.087	−0.635	0.080	−0.311	0.159
AC_02	I feel part of the group of academics committed to learning	3.60	0.942	−0.935	0.080	0.665	0.159
AC_03	I am able to explore academic interests with staff	3.18	1.060	−0.428	0.080	−0.537	0.159
AC_04	Students' ideas and suggestions are used during the courses by the staff	3.17	1.082	−0.471	0.080	−0.600	0.159
AC_05	The feedback from the courses helps me to clarify things I hadn't fully understood	3.72	0.918	−0.889	0.080	0.726	0.159
Peer community (PC) – 5 items							
PC_01	Students support each other and try to give help when it is needed	3.36	1.186	−0.605	0.080	−0.572	0.159
PC_02	Talking with other students helps me to develop my understanding	3.73	0.960	−1.036	0.080	0.920	0.159
PC_03	I have learned to explore ideas confidently with other students	3.22	1.050	−0.518	0.080	−0.481	0.159
PC_04	I can generally work comfortably with other students	3.38	1.062	−0.637	0.080	−0.264	0.159
PC_05	Teachers encourage students to mutually interact	3.40	1.080	−0.582	0.080	−0.365	0.159

Source(s): Created by authors

Table A1.

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