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Student engagement in the first year of university in Wales during COVID-19

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ABSTRACT

This article reports on a study which evaluated five dimensions of first-year university students' engagement in Welsh universities during the COVID-19 pandemic. The study utilises a student engagement scale which was previously used with undergraduate students in Australian universities. Our findings provide insights on five dimensions of student engagement including academic, intellectual, peer, student-staff and online engagement which were explored during the COVID-19 pandemic. Findings indicate that the Student-Staff Engagement scale obtained the highest mean value, and the Academic Engagement Scale acquired the lowest score. The highest and lowest engagement-scale items in this study illustrates the shifting profile of first-year students who demonstrated contrasting study habits, forms of communication with peers and interactions with university staff to pre-pandemic students. The results also indicate that engagement is a complex concept and further work is required to better understand student engagement within contemporary universities which have embraced a hybrid mode of teaching and learning. The paper calls for a more robust theorising of the engagement concept and the authors of this article argue that the online dimension of student engagement requires expanding to mirror the experiences of undergraduates studying in the hybrid university.

Introduction

Student engagement is a complex and multifaceted construct and is perceived as one of the crucial aspects for transitioning successfully to university (Kahu, Picton, and Nelson 2020). Furthermore, student engagement is considered as the strongest predictor of learning and academic success (Fredricks, Filsecker, and Lawson 2016). Student engagement itself is a complex term (Ashwin and McVitty 2015) that encompasses the dynamic interplay and ongoing relationship between higher education institutions (HEIs) and their students (Astin 1985). While institutions play a critical role in constructing environments and opportunities that make learning possible, students are also agential in making use of these opportunities and environments. The inter-dimensional make-up of student engagement is contested as is the term itself (Kahu and Nelson 2018; Kahu, Picton, and Nelson 2020). Researchers have proposed several dimensional scales which vary in the number of elements from 2 to 8 and include dimensions focused on emotional, behavioural and cognitive engagement as well as interactions with peers and academics (LaNasa, Cabrera, and Trangsrud 2009; Skinner, Kindermann, and Furrer 2009). A commonly accepted and widely used scale to evaluate student

engagement for students entering higher education comes from Krause and Coates (2008). They suggest that student engagement consists of seven dimensions made up of transition engagement, student-staff engagement, intellectual engagement, peer engagement, academic engagement, beyond-class engagement and online engagement. Student engagement evaluations have been used to inform and develop practice, pedagogy and policy (Coertjens et al. 2017; Krause and Coates 2008; Welsh Government 2021) and are linked to high quality learning experiences and outcomes. Whilst the term student engagement and its dimensional make-up is contested, literature agrees that the transition to HE is both socially and academically challenging (Scanlon, Rowling, and Weber 2007) even with interventions in place to help with student's preparation to university.

The empirical study on which this paper is based was carried out between November 2021 and March 2022 and coronavirus had been a significant impact on academic life and student experiences during the preceding academic year. With limited access to educational spaces and fewer interactions with peers and academics, the student experience was significantly impacted (McKay, O'Bryan, and Kahu 2021). In Wales, there was a social reticence to return to physical classrooms resulting in most teaching and learning occurring online.

This paper reports on an empirical study which explores the student engagement of first-year undergraduate Education students enrolled at Welsh universities, with a focus on the five dimensions of student engagement which include academic, intellectual, peer, student-staff and online engagement. In this study, 'Education students' were defined as those students undertaking an undergraduate degree associated with the study of Education. The paper starts by introducing literature on student engagement, before detailing the research design. It then presents and discusses research findings prior to suggesting how Krause and Coates' (2008) engagement scale could be further developed for use in the contemporary hybrid university.

Literature review

The concept of student engagement

Research and scholarly attention on student engagement has attracted increasing attention over the last few decades, particularly in the USA, UK, Australia, China and Canada (Chong and Sin Soo 2021; Kahu and Nelson 2018; Meehan and Howells 2019). Early engagement work by Chickering and Gamson (1987) developed seven principles for good practice in undergraduate education which informed the design of the annual National Survey of Student Engagement (NSSE), one of the first evaluations of student involvement in learning and engagement in the USA and Canada (Astin 1999). As the field has expanded, a range of scales have been developed to measure and understand university transitions, student engagement, achievement, retention, burnout and dropout (Gunuc and Kuzu 2015; Krause and Coates 2008; Salmela-Aro et al. 2016) and several literature reviews have synthesised empirical research on the subject (Henrie, Halverson, and Graham 2015; Trowler 2010). Bond et al'.s (2020) systematic evidence map recognises the increasing quantity of student engagement, but also notes that limited theorising of the concept has impacted on the quality and rigour of research. Due to being a complex and multifaceted construct, they find that there is still no consensus in the literature on what is meant by student engagement.

The five dimensions of student engagement

Academic and intellectual engagement develops because of a students' attitude, willingness and effort to acquire academic skills, practices and knowledges and plays a role in their academic performance, behaviour and success at university (Aldous, Sparkes, and Brown 2014). *Academic engagement* relates to the development of academic competencies needed for successful study (e.g. asking questions, collaborating and managing workload) and first-year university programmes which weave key competencies into their programmes improve student retention

and success (Thomas 2012). *Intellectual engagement* is focused on affective dispositions including subject motivation, satisfaction and passion (Ryan and Deci 2017). So as not to confuse these two dimensions of student engagement, Krause and Coates (2008) articulate that *academic engagement* 'attributes agency to the student rather than the institution' (p. 500), whereas *intellectual engagement* is 'the extent to which their subjects provide intellectual stimulation and challenge' (p. 502).

Social engagement relates to the level of participation in educational activities and social aspects of the student experience (Krause and Coates 2008) and broadly comprises peer engagement and student-staff engagement. Developing knowledge and understanding in collaboration with peers is a critical component of students' study. *Peer engagement* specifically refers to those collaborative activities undertaken with peers. Specifically, Krause and Coates (2008, 501) identify three contexts in which *peer engagement* occurs: 'in class, beyond the classroom setting and in the wider learning community'.

Research relating to student experience identifies that students need to feel the need to rapidly develop their identity and sense of being, belonging and becoming on joining university (Meehan and Howells 2019) to form effective working relationships with academic and professional staff. Krause and Coates (2008, 501) argue that 'student-staff engagement relates to the critical role academic staff play in helping first-year students to engage with their study and the learning community as a whole'. One aspect of *student engagement* is the attitudes and behaviours staff display in relation to student progression. Another is the significance of non-academic support services, (including counselling centres, administration and finance) which can play a pivotal role in shaping the student experience for some students at university (Lederer et al. 2021).

With the increase in online learning, research on student engagement has extended to the online environment (Chen, Gonyea, and Kuh 2008). This has been intensified by imposed emergency remote teaching in the wake of the global pandemic forcing a global student population to embrace online environments. According to Bond et al. (2020, 1), 'digital technology has become a central aspect of higher education, inherently affecting all aspects of the student experience'. This is reflected by contemporary student samples who deemed *online engagement* as more important than *academic engagement* (Chong and Sin Soo 2021). Bolliger and Martin (2021) define *online engagement* as:

> 'Students' involvement in the online environment connected with the instructor, with peers, with oneself in a self-directed manner and with the multimodal online instructional content to achieve the online course learning outcomes'

The potential that educational technology has to improve student engagement has long been recognised (Norris and Coutas 2014). However, without careful planning and sound pedagogy, technology can promote disengagement and impede rather than help learning (Howard, Ma, and Yang 2016; Popenici 2013). Therefore, calls have been made for a greater understanding of the role that online plays in affecting student engagement, to strengthen teaching practice and lead to improved outcomes for students (Castañeda and Selwyn 2018).

Research design

Participants

The Student Engagement Survey was distributed via an email call to first-year undergraduate students enrolled in five Welsh universities via Education programme leads between 1 December 2021 and 30 March 2022. Participants were recruited through purposive, voluntary sampling and a total of 90 complete surveys were returned. A significant number of returns came from the two institutions the research team worked in, although all HEIs in Wales were represented in the data.

Table 1. Descriptive statistics and measurement instrument reliability for the five engagement scales.

Engagement dimensions	mean	no items	σ	Cronbach alpha	rank order
Student-staff engagement (SES)	3.90	8	0.51	0.81	1
Intellectual engagement (IES)	3.67	5	0.62	0.75	2
Peer engagement (PES)	3.61	9	0.67	0.84	3
Online engagement (OES)	3.60	13	0.54	0.82	4
Academic engagement (AES)	3.36	9	0.55	0.74	5

Data collection

Prior to data collection, institutional approval was granted. The research team used an adapted version of Krause and Coates' (2008) First Year Experience Questionnaire (FYEQ), with 44 items and 5-point Likert scale, to gain an understanding of student engagement. The questionnaire was created using Qualtrics Survey Software and the FYEQ was adapted in two ways. First, we excluded two dimensions of the student engagement scale with 13 items (transition engagement and beyond-class engagement) as university life was still affected by coronavirus social distancing measures and most teaching and learning was online. Consequently, we felt that these dimensions with items on orientation activities, campus life and extra-curricular activities would be less relevant for the 2021–22 cohort and a reason participants might not want to complete the questionnaire. Secondly, we wanted to balance the collection of scale data with qualitative data, so we included six open-ended questions to provided us with a broader understanding of student academic, social and online engagement and recommendations about further support universities could provide during transition. These data are reported elsewhere (Hodgkin, Rawlings Smith, and Young 2023; Rawlings Smith, Hodgkin, and Young 2022). Once collected, FYEQ data were exported, processed and analysed using IBM SPSS to calculate descriptive statistics and provide initial insight on student engagement.

Limitations

We had a short timeframe for this Welsh Government-funded study, and consequently we narrowed the scope of our participants to first-year undergraduates enrolled on education programmes in Wales. With hindsight, we could have broadened participation to first-year undergraduates across the UK to collect comparative data across the four nations for broader insights. However, with the awareness that surveys had been frequently used to gain feedback about remote learning during the pandemic, our concern about survey fatigue (Denscombe, 2014) influenced our choice of target participants. Reflecting on data collection, it was evident that the first page of the online questionnaire was started by 132 respondents, but only 87 respondents answered all the questions available. Our awareness of COVID-19 survey fatigue increased in conversation with undergraduates, had we been fully aware of this issue during the research design phase we may have selected more participatory data collection tools for use with undergraduates from the four nations. The small sample was also a concern. However, after calculating summary measures of construct validity and reliability, we found that the scales were dependable with internal consistency being acceptable (see Table 1); this mirrored findings from Krause and Coates' (2008) large-scale study.

Findings

Prior to the discussion of first-year students' engagement, we will first summarise the psychometric properties, reliability and descriptive statistics of the student engagement scales and present a summary of the focus group data.

Table 2. Descriptive statistics for the 44 student engagement items in the five dimensions.

Engagement scales and items	mean	σ	σ²	rank
Academic Engagement Scale (AES)				
I usually complete all my assignments	4.46	0.85	0.73	1
I rarely skip classes	4.09	0.96	0.92	5
I regularly ask questions in class	3.31	1.08	1.17	34
I am strategic about the way I manage my academic workload	3.31	0.89	0.79	35
I usually come to class having completed readings	3.21	0.99	0.99	36
I regularly seek advice and help from teaching staff	3.20	0.92	0.85	38
I regularly make class presentations	3.15	0.87	0.76	39
I regularly study on the weekends	2.81	1.03	1.07	41
Intellectual Engagement Scale (IES)				
I am finding my course intellectually stimulating	3.84	0.60	0.37	17
Lectures often stimulate my interest in the subjects	3.80	0.76	0.57	20
I enjoy the intellectual challenge of subjects I am studying	3.78	0.75	0.56	21
I get a lot of satisfaction from studying	3.66	0.75	0.57	26
I am usually motivated to study	3.39	1.04	1.08	33
Peer Engagement Scale (PES)				
There is a positive attitude towards learning among my fellow students	4.01	0.74	0.54	8
I feel part of a group of students and staff committed to learning	3.86	0.82	0.67	14
I regularly work with other students on course areas with which I have problems	3.85	0.92	0.84	15
Studying with other students is very useful to me	3.84	0.90	0.80	16
I regularly work with other students on projects during class	3.80	0.87	0.76	19
I regularly get together with other students to discuss subjects/units	3.61	0.96	0.93	28
I regularly work with my peers outside of class on a group assignment	3.55	1.02	1.02	29
I regularly study with other students	3.47	1.07	1.15	31
I regularly borrow course notes from friends in the same module	2.72	1.02	1.03	42
Student-staff Engagement Scale (SES)				
I feel confident that at least one of my teachers knows my name	4.19	0.74	0.55	2
Most of the academic staff are approachable	3.97	0.78	0.61	9
Staff are usually available to discuss my work	3.92	0.61	0.37	10
One-to-one consultations with teaching staff are useful	3.92	0.83	0.70	11
Staff made it clear from the start what they expect from me	3.89	0.88	0.77	12
The teaching staff are good at explaining things	3.88	0.76	0.57	13
Teaching staff usually give helpful feedback on my progress	3.75	0.79	0.63	23
Most academic staff take an interest in my progress	3.69	0.82	0.68	25
Online Engagement Scale (OES)				
I regularly use the web for study purposes	4.15	0.82	0.68	3
Using email to contact lecturers/tutors is very useful	4.12	0.70	0.50	4
Online resources (e.g. course notes and resources) are very useful for me	4.01	0.91	0.83	6
I regularly use email to contact lecturers/tutors	4.01	0.85	0.72	7
I regularly use web-based resources designed specifically for the course	3.83	0.81	0.66	18
Learning at my own pace using online resources is useful	3.77	0.94	0.89	22
Using email and/or other platforms to contact other students is very useful	3.71	0.87	0.76	24
Computer software designed specifically for the course is very useful	3.65	0.93	0.87	27
Online tutoring (electronic access to tutoring support) is very useful	3.48	1.00	1.00	30
Online discussion with my peers is very useful	3.42	1.06	1.12	32
I regularly use online discussion groups related to my study	3.20	1.12	1.25	37
Subjects offered online with no face-to-face classes are useful	2.98	1.32	1.75	40

Preliminary analysis and reliability of the five student engagement scales

The following five Krause and Coates' (2008) student engagement scales were used in this study: Academic Engagement Scale (AES), Peer Engagement Scale (PES), Student-staff Engagement Scale (SES), Intellectual Engagement Scale (IES) and the Online Engagement Scale (OES). Table 1 shows the mean, number of items, standard deviation, Cronbach's alpha coefficient and the rank order for these five engagement dimensions. The results for the mean values presented in Tables 1 and 2 are arranged in a descending order and were all above average. To ensure the reliability of the student engagement scales, the Cronbach's alpha coefficient of reliability test (α) was conducted. As shown in Table 1, the alpha values ranged between 0.74 and 0.84. As all alpha scores are above 0.70, the acceptance level commonly used for scales, it can be inferred that the instrument has acceptable internal consistency, and this gives us the confidence that our questionnaire is reliable (Taber 2018).

Descriptive statistics for the 44 individual student engagement items

The descriptive statistics for the 44 student engagement items in the five dimensions are presented in Table 2 and show that individual mean values are all above average for a five-point Likert scale. Findings indicate that the SES obtained the highest mean value, and the AES acquired the lowest score. Although the AES, followed by the OES, scored the lowest overall mean values, individual items from both scales were ranked in the top five positions overall, meaning that different aspects of academic engagement and online engagement were seen as important, and this nuance is hidden by the use of mean values.

Discussion

The following discussion provides a critical commentary of the highest and lowest mean scores within the Academic Engagement Scale (AES), Peer Engagement Scale (PES), Student-Staff Engagement Scale (SES), Intellectual Engagement Scale (IES) and Online Engagement Scale (OES) and draws on focus group findings (Table 3). The discussion concludes with an overview of student engagement, considering the highest and lowest student engagement items.

Academic engagement scale

The highest mean scores in relation to the academic engagement scale is completing all the assignments and rarely skipping classes (see Table 2). This finding highlights that students within this study consider completing assignments, followed by attending classes, as the most significant aspect of their studies. As such, it could be argued that the sample understood the importance of developing academic skills such as conducting research and academic writing. Moreover, that

Table 3. Key themes from the focus group data.

Engagement scales	Key themes
Academic engagement (AES)	**Academic support**: students wanted to feel well supported by professional and academic staff before and during their programme.
	Shifting pedagogical practices: COVID-19 narrowed the range of pedagogical strategies used with some new online opportunities. Students wanted and valued campus-based education
	Learning spaces: COVID-19 meant home learning, often in spaces not designed for quiet study. The return to campus saw an appreciation of dedicated learning spaces
Intellectual engagement (IES)	**Student identity**: Connecting with others in study groups has helped students to develop their sense of belonging.
	Academic competences: Thinking that they should arrive at university with certain academic skills, students engaged with knowledgeable peers and self-study.
	Learning time: Students and universities have adapted to a hybrid way of working with greater flexibility of when and where learning occurs.
Peer engagement (PES)	**Connections with others**: Making connections with others supports learning and socialisation.
	Emotional and peer support: Peer support was recognised as an important coping strategy and students use technology to stay connected.
	Isolation and loneliness: Students highly valued their peers as isolation and loneliness was a shared lived experience during the pandemic.
Student-staff engagement (SES)	**The role of staff**: Empathy and technology were used by most professional and academic staff to support students.
	Creating a student experience: Student motivation and engagement is linked to in-person learning and social opportunities.
	Communication: Students recognised that regular, effective, and swift communication and feedback supported their induction.
Online engagement (OE)	**Digital preparedness**: Students appreciated ongoing and free digital support, as too much early on was overwhelming.
	Online engagement: For online learning to be effective, students wanted good quality sessions from skilled staff.
	Digital access: Students use laptops and mobile phones for online study, but issues with printing and Wi-Fi connectivity can be disruptive.

student prioritised attending classes to interact with their peers and lecturers (McKay, O'Bryan, and Kahu 2021). This finding was supported by the focus group data which highlighted that students appreciated the return to campus and in particular dedicated learning spaces which facilitated interaction with their peers and staff (see Table 3).

Conversely, regularly borrowing books from the library and studying on the weekends scored the lowest mean values in this scale. Students choosing not to borrow books from the library on a regular basis was to be expected as the use of the library's digital resources and home-based learning were common aspects of study during the pandemic (Rawlings Smith, Hodgkin, and Young 2022), this mirrored Chong and Sin Soo's (2021) findings. The low score for studying on the weekends was explained by students developing time management skills and weekends were filled with commitments to family, paid employment and leisure activities (Hodgkin, Rawlings Smith, and Young 2023). These findings correlate with Sharaievska et al., (2022) who suggest that the pandemic brought about changes to schedules and everyday life with students having to adopt new habits and routines.

Interestingly, academic engagement mirrors Chong and Sin Soo's (2021) findings, reasoning that this relative weakness reflected the challenges faced by undergraduates in adapting from school-based to university-based learning environments. Krause and Coates (2008) suggest that developing the capacity for students to manage their time, study habits and strategies for success are important success in their first year. However, the opportunity to develop these independent learning skills before starting university were impacted by interruptions to learning during the pandemic meaning that learning in university environments was a 'jump too far' for some.

Peer engagement scale

The highest score related to the peer engagement scale were around the positive attitude towards learning among the students (see Table 2). The findings suggest that students attending university had a desire to excel during their first year of study. Students within the present study felt that they were part of a group of students and staff committed to learning. This is particularly prevalent due to the physical restrictions placed on students during the COVID-19 pandemic. According to the focus group data, students valued making connections with others during their first year of study and the support provided by their peers (see Table 3). Finally, in relation to other areas of the peer engagement scale which scored highly, students indicated that studying with other students was useful to them and that they regularly work with students on course areas with which they have problems with. This relates to the importance of learning in social contexts that was advocated by Vygotsky (1962). As opportunities for students to interact and communicate with others were impeded by nationally imposed lockdowns, any subsequent episodes in which students could learn through discussion, collaboration and live feedback were valued.

In relation to the lowest mean values within the peer engagement scale, participants revealed that students tended to attend all their classes but did not borrow course notes or study with friends on their modules. With self-reported good attendance and the availability of course resources on virtual-learning environments, there was likely no need to borrow course notes from their peers.

Student-staff engagement scale

The highest mean scores from the student-staff engagement scale included feeling confident that at least one of the teachers knew the student's name and agreeing that most of the academic staff were approachable (see Table 2). This indicates that teachers were friendly and took the time to get to know their students during their first year of study. Being taught by approachable staff could positively impact the development of academic relations between students and teachers (McKay, O'Bryan, and Kahu 2021). This finding was supported by the focus group data which highlighted that the empathetic approach adopted by academic and professional staff was welcomed by students

(see Table 3). Another aspect of the student-staff engagement scale which scored highly was the availability of staff to discuss students work and that one-to-one consultations with teaching staff are useful. This highlights the positive impact teachers can have on students during one-to-one meetings, especially during the pandemic where most of the contact with students occurred online (McKay, O'Bryan, and Kahu 2021).

The weakest mean values in relation to the student-staff engagement scale suggest that students considered that most academic staff did not take an interest in their progress during their first year of study. Additionally, another aspect of the student-staff engagement scale which was categorised within the weakest mean values was 'teaching staff usually give helpful feedback on my progress'. These results indicate that within the present study, students identified feedback and a lack of interest in their progress a central concern during their first year of study. This contrasted findings from Krause and Coates (2008) as these two items ranked highly on their scale. This may however illustrate the changing nature of practitioners through the pandemic as they had to adapt their roles to offer more pastoral care than attention on progression and feedback.

Intellectual engagement scale

The intellectual engagement-scale responses suggest that students find their course intellectually stimulating and lecturers often stimulate students' interest in the subject matter (see Table 2). These two statements received the highest mean score with the intellectual engagement scale. These findings suggest that the lecturers and the subject matter are crucial to ensuring student engagement within Higher Education.

In contrast, being motivated to study obtained the weakest mean value within the intellectual engagement scale. It is important to recognise that students' motivation to study may have been impacted by the COVID-19 pandemic and the ongoing restrictions placed on their academic study. Students getting satisfaction from their studies also received a weak mean value. This suggests that students found their academic studies difficult during the COVID-19 pandemic. This finding was supported by the focus group data which found that students struggled with developing academic competencies during their first year of study (see Table 3). Overall, the results from the intellectual engagement scale could indicate that this sample enjoyed being academically challenged and being taught by lecturers that made their subjects engaging as students were not usually motivated to study. These results chimed with wider literature that also found that students were intellectually stimulated but lacked motivation. Sharaievska et al., (2022) suggested that the apathy and lack of motivation described by their student sample related to the classes being moved increasingly online. Chong and Sin Soo (2021) suggest that academic engagement and intellectual engagement are strongly associated to the extent that intellectual engagement could improve academic engagement. In turn they propose that universities should develop their online engagement, including the wider adoption of e-books and this could positively raise student's intellectual stimulation and academic engagement. Whether it is as simple as developing online engagement and whether this will positively impact the other engagement dimensions remains to be seen. Nevertheless, a lack of motivation to study in the first year is not just restricted to cohorts during the pandemic. Krause and Coates (2008) found that 'I am usually motivated to study' was at the bottom of their IES scale.

Online engagement scale

The highest mean values on the online engagement scale were related to using the web to study; using email to communicate with teaching staff and using the web to engage with resources (see Table 2). This contrasted Krause and Coates' (2008) findings in which these items were lowest on their OES scale. This however reflects the changing nature of learning environments at university which are becoming increasingly digitised (Bond et al. 2020; Castañeda and Selwyn 2018). Although the preferred communication tool with teaching staff was email, email communication with peers

was not as popular. This reflects the growth social media platforms accessed on mobile devices to communicate among young people which was supported by the focus group data (see Table 3). Also, the use of Online discussion groups ranked towards the bottom of the mean scores. However, it is worth noting that one of the student's recommendations was that courses should establish online forums on modules for peers and staff to communicate. It was noted that although these students did not have the opportunity to engage with such discussion forums on their respective courses, they were still perceived as useful.

Some of the affordances enabled by technology were also highlighted in the high mean scores such as the ability to learn at their own pace, by listening to recorded lectures at different speeds and the ability to re-listen to content when and where students wanted. Whilst the highest engagement scale was related to using the web to study this does not paint the whole picture in relation to online student engagement. Subjects offered exclusively online with no face-to-face interaction were not deemed as useful and received the lowest mean values. The demand for face-to-face learning is evident and has not been replaced by online teaching and learning. The requirement for human interaction with lecturers remains as tutoring online which is closely linked with pastoral care as well as academic support also received low mean values. This is echoed in findings from Watermeyer et al. (2021) who describe online pedagogy during the pandemic as purely didactic, transmissional and regressive.

Overview of student engagement

On review of the 44 engagement items in this study, those with the strongest level of student engagement are as follows:

(1) I usually complete all my assignments (AE)
(2) I feel confident that at least one of my teachers knows my name (SE)
(3) I regularly use the web for study purposes (OE)
(4) Using email to contact lecturers/tutors is very useful (OE)
(5) I rarely skip classes (AE)

Of the 44 engagement items in the study, those where the level of student engagement were weakest are as follows:
40. Subjects offered online with no face-to-face classes are useful (OE)

(1) I regularly study on the weekends (AE)
(2) I regularly borrow course notes from friends in the same module (PE)
(3) I regularly borrow books from the university library (AE)

44. I regularly use email to contact friends in my course (OE)

The top five items with a strong level of student engagement, listed above, represent three of the five dimensions of student engagement. This contrasts with Chong and Soo's (2021) findings where only online engagement items were represented in the top five. The significant paradigm shift in HE pedagogy and educational technology, forced in response to COVID-19, was an educational problem which illuminated the digital divide. To ensure HE education is socially just, it is imperative that all students can access and engage in digital learning. However, our findings did indicate that students prefer in-person classes and campus experiences, even though they had experienced and benefited from remote and hybrid learning during the pandemic. In-person learning is social and interactive, and it was this element of the campus experience that students valued so highly.

Our findings recognised the importance of lecturers to student engagement, with students appreciating access to and communication with their lecturers via email. Students valued lecturers who knew their name. Furthermore, the importance placed on attending classes and completing

assignments reflected students' priorities; that the key purpose of a university education is the completion of academic qualifications. When taken together these relational and attitudinal dimensions of engagement flag the complexity and multiple meanings that can be attributed to student engagement. Ashwin and McVitty (2015, 346) position student engagement as a 'knowledge-centred activity' and this conceptionalisation helps to explain why student engagement items that were less knowledge-centred placed lower in Table 2. For example, students felt that the quality of learning was better when face-to-face, therefore online classes scored poorly, and with much improved online library access visiting the library for books was also a low placed item. A key recommendation from this study is for HEIs to pay attention to and improve knowledge-centred activities provided for students as this can support the widening participation agenda, and enhance student belonging, retention and completion (Tight 2020).

When it was recognised that the length of the 73-item Academic Competence Evaluation Scales (DiPerna and Elliott 2000) limited its use, Antony and DiPerna (2018) developed a Short-Form Academic Competence Evaluation Scales to evaluate the non-cognitive factors influencing academic and life success. We saw similar issues with Krause and Coates' (2008), 60 item student engagement and taking our findings into consideration, we recommend that a revised Short-Form Student Engagement Scale is developed which attends to this issue and student engagement items are revised to ensure relevancy to the contemporary hybrid campus (Bolliger and Martin 2021; Bond et al. 2020).

Conclusion

This study offers a unique insight into student engagement within a Welsh context, during the hybrid era of university education. This study evaluated five dimensions of first-year university student engagement during the COVID-19 pandemic. During this time educational institutions were forced to change their approaches to teaching and learning during the pandemic; social distancing measures and remote learning reduced the number of social interactions with their peers and friends. Since March 2020, students have had fewer opportunities to present, perform and work in various groups and spaces. Our findings indicate that the SES obtained the highest mean value, and the AES acquired the lowest score. This study also revealed that the greatest importance from the engagement scale was attributed to completing assessments, lecturers knowing students' names, the use of the internet to study, email as a tool to contact lecturers and the importance of attendance to sessions. Student engagement had a weak link to online learning rather than face-to-face, weekend study, borrowing course notes from peers and borrowing books from the library. Arguably these results illustrate the shifting profile of first-year students who demonstrated contrasting study habits, forms of communication with peers and interactions with university staff to pre-pandemic students experiencing university for the first time. Our findings also suggest that engagement within contemporary universities is a complex and ever-changing concept which is confounded as students arrive at university with a range of academic, social and digital competencies, having experienced a diverse range of post-16 educational provision. This study contributes to the notion that transition to university is a much longer process than is currently theorised and students identified a need for universities to adopt an extended induction phase across the entirety of their studies. Further recommendations for universities include the need to return to on campus, in-person learning and the value of effective communication by academic and professional staff (via email and virtual learning environments).

Three key challenges were identified within this study which included the relevance of pre-existing engagement-scale items that were applicable to capture students' engagement at university in a 'post pandemic' climate. Although the scale items suggested by Krause and Coates (2008) were adopted for this study these items were not always fit for purpose or matched the student's experiences of hybrid and remote learning. Second, this paper suggests that survey fatigue needs to be considered in relation to the student engagement-scale items.

For example, the first page of the online questionnaire was started by 132 respondents, but only 87 respondents answered all the questions available suggesting the onset of survey lethargy during the data collection process.

Finally, the key focus for empirical study within the literature is concentrated on students' entry to Higher Education and their first-year engagement. Research exploring student engagement beyond a student's inception to university is scarce. These limitations along with Krause and Coates' (2008) call for a more robust theorising of the engagement concept, have driven our future research agenda to explore student engagement through Higher Education and begin to develop updated engagement scales to capture and gain and understanding of student engagement in a hybrid era of university education.

Disclosure statement

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