Student Perceptions of Online Engagement

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Abstract
This paper reports on research that extends knowledge about higher education students' perceptions of online engagement. In particular, the study aimed to identify what students thought engagement was and how they experienced it. Understanding students' views about online engagement will provide a more comprehensive understanding of the topic and should assist instructional designers to support academic staff to develop online courses that are more likely to engage their students. Using a mixed-methods approach, the study found that students felt most engaged with learning when doing practical, hands-on activities. Additional findings from the qualitative and quantitative data are highlighted, with some differences between the students' perceptions in the different types of data, particularly concerning social engagement. This suggests that further research is warranted. The paper offers several practical implications for student learning.

Keywords: distance education, online learning, post-secondary education, regional university, engagement

The purpose of this research is to extend knowledge of online student engagement in higher education by listening to what students say. In other words, this study set out to privilege the student voice, by specifically asking about their perceptions of learning engagement in an online environment and how they experience it. Whilst the term *engagement* has become a catch-all term used in a range of institutional and learning support strategies, the student perspective is rarely considered.

Student engagement has been used to assess and predict the quality of student learning experiences and outcomes (Gay & Betts, 2020; Hussain et al., 2018), and has been linked to persistence, retention, classroom motivations, course achievement and improved graduation rates (Ferrer et al., 2022; Flynn, 2014; Jung & Lee, 2018; Lee, 2014; Pinchbeck & Heaney, 2022). Its alternatives—low engagement and disengagement—have been found to have a profound negative effect on student learning outcomes, cognitive development, and the quality of the student experience (Crampton et al., 2012; Higher Education Standards Panel, 2017; Ma et al., 2015; Pittaway & Moss, 2014). Thus, student engagement is an important consideration for teaching and learning.

Moreover, digital technology has become a fundamental feature of higher education, especially since the COVID-19 pandemic, which caused many universities to instigate "emergency elearning" (Murphy, 2020, p. 492; see also Ahshan, 2021), and this highlights the necessity to consider student engagement in online environments. For most universities, offering courses or programs online has become a mainstream operation (Shelton et al., 2017; Stone, 2019). However, while digital technology is increasingly used to distribute content, link learners, and enable anytime/anywhere learning, keeping students engaged in online learning is challenging. Indeed, studies have consistently found that, despite the increasing popularity of online options and the push for more online content, retention for online courses is lower than for face-to-face instruction (Atchley et al., 2013; Kahn et al., 2017; Murphy & Stewart, 2017; Wanner, 2014). Nevertheless, as we move towards a post-COVID-19 world, we may very well expect that the online/face-to-face dichotomy will no longer be relevant.

Defining engagement, however, is complex and contested, and has evolved over time. It has been considered as student investment or commitment (Northey et al., 2018), psychological effort (Lee et al., 2019), participation (Bergmark & Westman, 2018), effortful involvement in learning (Kim et al., 2019; Reschly & Christenson, 2012), and/or quality of effort (Sun & Rueda, 2012). Bond et al. (2020) suggested that, due to the complex nature of student engagement in the online environment, research has struggled to find a shared definition and vocabulary, and this has resulted in inconsistency across the field. However, engagement has come to be recognized as a process in which students, through their interactions with the instructional environment, experience a positive state of mind that is characterized by dedication, absorption, and vigor in an academic setting; this also leads to the achievement of learning goals (Colvin Clark & Mayer, 2016; Schwarz & Zhu, 2015). This broader definition is useful here, as it acknowledges engagement as a multifaceted concept that has social, cognitive, behavioral, collaborative and emotional elements (Redmond et al., 2018).

The benefits of student engagement have been linked to student learning and online course satisfaction (Martin & Bolliger, 2018). Thus, understanding how students perceive and experience engagement is an essential issue for research into educational technology and has benefits for learning. To strengthen teaching practices and improve students' outcomes in technology-mediated learning experiences, calls have been made to better understand the role technology plays in affecting student engagement (Bond et al., 2020; Castañeda & Selwyn, 2018;

Henrie et al., 2015). The current research contributes to this endeavour by applying readily available frameworks in relation to student perceptions of engagement.

As the term engagement has been used widely, higher education students would arguably have some familiarity with the term and its importance to their learning. However, even though various theoretical dimensions, subconstructs, techniques, and indicators have been developed to define and operationalize online student engagement, the student perspective is rarely considered. This can have potentially significant implications in terms of the extent to which technology-mediated, student engagement practices capture students' perspectives. The result of this is a lost opportunity to capture vital student understandings about engagement and, in turn, recognize the value of these to student learning (Tai et al., 2019).

Indeed, the investigation of students' conceptualizations of engagement is essential for developing engagement measures that reflect the everyday language teachers and students use to do tasks and learn (Fredricks, Filsecker, et al., 2016). As recognized by Fredricks, Filsecker, et al. (2016), studies that examine how students think about engagement can also help move the discussion beyond behavioral indicators to consider how engagement may change over time and in different fields.

This paper presents research that explored student perceptions of engagement in an online setting to consider how these align, or misalign, with the literature and to contribute to discussions about student engagement in technology-mediated learning environments. The paper begins with a brief background on engagement. It then examines the study's methods and limitations and describes the results, before moving to the discussion. Finally, implications for online course design are presented.

Dimensions, Techniques, and Indicators of Online Student Engagement

As discussed, there is a high level of divergence in definitions of student engagement across the research literature. This divergence is complicated by the range of learning modes now on offer to students: face-to-face, online, and blended. We begin by considering engagement in a general sense before considering online engagement more specifically.

Many researchers view student engagement as a meta-construct that includes three sub-constructs or types of engagement: cognitive engagement, emotional engagement, and behavioral engagement (Chan & Bose, 2018; Fredricks, Blumenfeld, et al., 2004; Henrie et al., 2015; Reeve, 2012; Reeve & Tseng, 2011). According to Fredricks, Blumenfeld, et al. (2004), behavioral engagement includes the observable behaviors necessary for academic success (e.g., attendance, active participation, and task completion) and emotional engagement includes both the feelings learners have about their learning experience (e.g., interest, frustration, or boredom) and their social connection with others. Cognitive engagement is the focused effort learners give to understand what is being taught effectively, including such behaviors as self-regulation and metacognition. The three types of engagement are dynamically interrelated (Fredricks, Blumenfeld, et al., 2004), and researchers have agreed that instructors must engage students on all three levels to engage students in their coursework (Chan & Bose, 2018).

More recently, however, researchers have proposed additional dimensions of engagement, including social engagement, relating to students' affect and behavior during collaborative group work (Fredricks, Wang, et al., 2016; Linnenbrink-Garcia et al., 2011), agentic engagement, related to how students proactively contribute to learning and teaching activities (Reeve, 2012; Reeve & Tseng, 2011), and volitional engagement, used to theoretically

justify engagement as "energy in action" (Filsecker & Kerres, 2014, p. 452). The research thus highlights that student engagement is a complex construct.

More specifically from an online learning perspective, Redmond et al. (2018) have developed a framework for engagement in higher education, which includes five key engagement elements considered essential to effective online learning: social engagement, cognitive engagement, behavioral engagement, collaborative engagement, and emotional engagement. In this framework, collaborative engagement is about developing a range of relationships and networks that support learning, such as collaboration with peers, instructors, industry, and the educational institution. In contrast, social engagement refers to students' social investment in the tertiary experience. In the online environment, this often occurs when students talk about themselves and their contexts, for example, through ongoing interactions in social media.

Researchers (Chan & Bose, 2018; Kennedy, 2020; Lear et al., 2010; Martin & Bolliger, 2018; Robinson & Hullinger, 2008) have also suggested that student engagement in online classes can be boosted through regular student-instructor interaction, frequent peer interaction, and challenging tasks and activities. Based on a framework developed by Moore (1989), the trifecta of student engagement (student-instructor interaction, student-student interaction, and student-content interaction) postulates that students need to regularly and meaningfully interact with their course curriculum content, their peers, and their instructor, to be fully engaged in their learning. A fourth interaction, student-interface interaction, was added by Hillman et al. (1994), to consider the interaction between the learner and the technologies used to deliver instruction. Indeed, due to the extensive use of technology in contemporary education, the student-interface interaction is both a foundation and a condition of online learning and often serves as a basis and precondition for other interactions (Wang et al., 2014). It is therefore regularly considered by researchers as a fourth interaction for student success and engagement (Hirumi, 2002; Joksimović et al., 2015; Wang et al., 2014).

This body of research indicates the challenges of understanding the complex interactions involved in online student engagement and considering what educators might do to facilitate student engagement in learning. Finding out about student perspectives is an important component of understanding these complexities.

Student Perspectives of Online Engagement

Only a small body of research has explored the meaning of engagement from a student perspective (Buelow et al., 2018; Fredricks, Wang, et al., 2016; Tai et al., 2019). Through qualitative interviews with school-aged students, Fredricks, Wang, et al. (2016) investigated how students conceptualized maths and science engagement and disengagement. They found that the students' views reinforced the multidimensional concept of engagement outlined in the academic literature; however, their analysis also revealed further indicators that have been included less frequently in prior measures of engagement, with the most important of those being the social dimension to engagement. The authors suggested that "because social interactions, collaborative learning, and help seeking from peers are playing an increasingly important role in education …, conceptualizations of engagement should move beyond just emphasizing individual aspects to also consider social dimensions" (p. 12). Similarly, Buelow et al. (2018) found that connections were important to students' experiences of engagement, including connections to people and to course materials and wanting practical applications of their learning.

Through survey-based research with postgraduate students, Martin and Bolliger (2018) explored student perceptions on various engagement strategies used in online courses, based on Moore's (1989) interaction framework. While the study confirmed the importance of all three types of engagement strategies in online learning, it also showed that learner-instructor engagement was significant. Engagement strategies that supported exchanges with instructors were valued more than approaches that aimed at interactions with learning materials and their peers. The authors found that engagement can be enhanced in online courses' interactive design and facilitation. They suggested that instructor facilitation is critical, and instructors need to have strategies for engaging discourse.

Tai et al. (2019) investigated student perceptions of engagement in two blended learning Initial Teacher Education programs. Students were asked explicitly to define engagement through interviews and a survey. The authors found that some students provided concise descriptions focussed on behavioral elements, such as participation, attendance, and effort devoted to their studies and, in contrast, others mentioned cognitive aspects, such as being able to understand and connect topics. A strong theme was that the value and relevance of the task was an aspect that defined engagement. The findings also supported previous work that found that multiple levels and meanings of student engagement exist.

Tai et al.'s (2019) research also explored facilitators of and barriers to student engagement. Facilitators, or enablers, are considered important to engagement and included the relevance of learning content to individual needs, flexibility/convenience of timetabled learning activities, feedback (informative responses for the benefit of the individual), and the mutually rewarding dialogic role of social interaction in learning. Barriers, or inhibitors, that negatively impacted engagement included workload, time management issues, and feeling overwhelmed.

Despite the limited field of research investigating student perceptions of online learning, the studies cited here provided important starting points for our investigation. In particular, the previous studies suggested that we should be prepared for a diversity of student understandings about engagement and its interactions with people, resources, and learning experiences. This influenced our thinking about research design and the tools we would use.

Method

The research aimed to empirically investigate student perceptions of learning engagement in an online setting. The overarching question guiding the research asked: How do online students perceive effective online engagement? This was supported by three subquestions that specify the details we wanted to investigate: What do online students understand by the term *learning engagement*? What types of engagement do they identify as supporting their learning? What types of interactions do they think support their learning? To answer the research question and subquestions, we drew on previous research about engagement and interactions for engagement, specifically the work of Redmond et al. (2018), Moore (1989) and Hillman et al. (1994). This is explained further in the next section.

Research Design and Data Collection

The study used a sequential mixed-methods approach (Creswell, 2009; Shorten & Smith, 2017), with data collected in two phases. Phase 1 comprised an online survey containing three questions. The first was an open-ended question (qualitative data) that asked students to explain their understanding of online learning engagement. This question was purposely placed first, so that respondents could answer without being influenced by the wording of the two subsequent

questions. The other two questions were closed-ended (quantitative data). They asked students to indicate, on a Likert scale, (1) how important different types of engagement were to their learning in the course, and (2) how important different types of interaction were to their engagement in the course. These two questions drew on Redmond et al.'s (2018) meta-constructs of engagement, and Moore's (1989) and Hillman et al.'s (1994) interactions for engagement, respectively. For the meta-constructs, the survey provided brief explanations, as shown in Table 1.

Table 1

Brief Descriptions of Meta-constructs From Redmond et al. (2018), Provided as Explanations for Survey Respondents

Types of Engagement	Descriptions
Social engagement	Building community, creating a sense of belonging, developing relationships, establishing trust
Cognitive engagement	Thinking critically, activating metacognition, integrating ideas, justifying decisions, developing deep discipline understandings, distributing expertise
Behavioral engagement	Developing academic skills, identifying opportunities and challenges, developing multidisciplinary skills, developing agency, upholding online learning norms
Collaborative engagement	Learning with peers, relating to faculty members, connecting to institutional opportunities, developing professional networks
Emotional engagement	Managing expectations, articulating assumptions, recognising motivations, committing to learning

It is important to note that, in 2018, a five-point Likert scale was used: Very Important, Important, Moderately Important, Slightly Important, and Not Important. However, feedback from research participants was that they found it very difficult to distinguish between two of the categories: Moderately Important and Slightly Important, categories that received low levels of responses. As a result, in 2019, it was deemed appropriate to use a four-point Likert scale. Slightly Important was used to provide an option between Important and Not Important.

Phase 2 of data collection provided additional qualitative data through semi-structured interviews. Participants were recruited for this part of the study through email invitations and online course announcements after the surveys had been completed. Participation was voluntary and the research participants could choose either phone or Zoom for their interviews. The two phases of the research were repeated at the end of four consecutive semesters during 2018 and 2019.

Research Participants

The research participants were students from five disciplines (Education, Science, Nursing, Engineering, and Business) in a regional Australian university with a reputation for

distance education and a "digital first" approach. Digital learning and opportunities for flexible learning are common to all students enrolled at the university, with the majority of students enrolled completely online. Twelve courses, from across the four years of undergraduate study as well as from postgraduate study, were targeted (see Appendix A). All the courses were taught by members of the multidisciplinary research team.

At the end of each of the four semesters, an email was sent to all students enrolled in those courses, inviting them to participate in Phase 1 of the study. The initial email included information about ethics and provided them with a link to the Phase 1 online survey, which was located on the university endorsed LimeSurvey platform. A total of 611 students participated in the study. In 2018, a total of 406 students completed the survey: 277 in Semester 1 and 129 in Semester 2. In 2019, 205 students responded: 88 in Semester 1 and 117 in Semester 2. Most of the research participants were female (approximately 80%), mature-age (i.e., not school leavers) and part-time, and this is representative of overall course enrolments.

Interview participants for Phase 2 were recruited via a subsequent email and participation was voluntary. A total of 17 semi-structured interviews was conducted: nine in 2018 and eight in 2019, representing all five disciplines and a similar gender balance to the survey. The interviews lasted approximately 45 minutes.

Data Analysis

The primary purpose of the qualitative analysis (open-ended question and the interviews) was to identify themes from the data that represented the ways students understand learner engagement. Themes were identified and the participants' responses were categorized and counted.

In the online survey, students were asked: "How do you define learning engagement? In other words, what activities are you doing when you feel you are highly engaged in a course and your learning?" Many students read this as two questions and responded accordingly. When the students participating in the semi-structured interview were asked what online learning engagement meant to them, most mentioned activities in which they felt highly engaged as part of their response. As a result, the qualitative data were analyzed to reflect the two, albeit unplanned, parts of the question. However, in their responses, many students also discussed factors that positively or negatively impacted their engagement, discussing both engagement enablers and inhibitors. Because of this, a third layer of analysis was completed to specifically explore the data for instances where students described learning from an enabler/inhibitor perspective. Responses were manually analyzed using both manifest (qualitative content analysis) and latent (thematic analysis) coding techniques. The coding was conducted by two researchers. One spot-checked the coding of the other to ensure intercoder reliability.

The researchers analyzed the data to identify specific words and phrases, as well as implied meanings (Vaismoradi et al., 2016; Vaismoradi & Snelgrove, 2019; Vaismoradi et al., 2013). The identified codes were categorized into broader themes to establish relationships among the codes (Bryman, 2012; Creswell & Clark, 2011). Basic counts of how often each theme appeared were then used to rank themes in order of prominence.

The primary purpose of the quantitative analysis was to summarize and identify patterns in the data related to the online survey's closed-ended questions. The responses to these questions were analyzed using multi-chart visualizations (Petrillo et al., 2011) as a comparison method. Multichart percentage stacked bar graphs were used to facilitate the visual comparison of the data collected and identify patterns in the response distributions across the two years (Anronius, 2003). In addition, because of the difficulties of comparing data that use Likert scales

with different numbers of response alternatives (Colman et al., 1997; Holmes & Mergen, 2014), the focus of the analysis was on visually comparing the response distributions of the positive responses (i.e., Very Important and Important).

Results

Student Understandings of Engagement

In both the online survey and the interview, the research participants were asked what they thought learning engagement was. Most of their responses indicated that they described engagement in terms of actions, such as "taking notes, engaging in conversation, answering questions." On the whole, their explanations of engagement were focused on concrete actions and amounted to statements such as "engagement would be going online and participating or going online and grabbing what I need for whatever course I'm doing." Most of the research participants went on to explain engagement in terms of teaching and learning activities, and enablers and, to a lesser extent, inhibitors. Tai et al. (2019) and Buelow et al. (2018) found that the relevance of the task was important to learners, while our study indicated that the students were looking for concrete activities that were doable.

Student Perceptions About Activities That Helped Them Feel Engaged

In their qualitative responses, the participants named activities in which they felt engaged. As already explained, this was in response to the question that was intended to be a clarifying question ("What activities are you doing when you feel you are highly engaged in a course and your learning?"), rather than a question in its own right. The content analysis identified 17 distinct categories of activities that made them feel engaged (see Table 2). Basic counts of how often each category appeared show that completing practice exercises or questions (e.g., answering practice or review exercises, questions, online quizzes, calculations, problem-solving, completing modules, weekly activities, worksheets) and attending tutorials (Zoom, face-to-face tutorials, labs, tutorial activities) were the most often mentioned activities.

Table 2

Themes That Emerged in Response to the Question: "What activities are you doing when you feel you are highly engaged in a course and your learning?"

Response categories	Count
Practice exercises or questions (answering questions/online quizzes/doing calculations/problem solving/review questions/worksheets)	84
Tutorials (Zoom or F2F/labs/tutorial activities)	69
Reading/s	59
Listening to, watching, or attending lectures	45
Group work/discussions or interaction with peers	43
Online forums	29
Interactive/hands-on activities	24
Practical experiences, such as placements or practical activities or applications	22
Interaction with educator	20
Videos	18
Completing modules or weekly activities/posted in virtual classrooms	17
Researching ideas/information introduced in course/class	17
Taking notes	16
Assignment work	10
Face-to-face interactions and learning	10
When involved in asking questions (and having the ability to do this)	8
Scenario-based examples, worked examples or case studies	5

Student Perceptions About Enablers and Inhibitors

The research participants also named engagement enablers and inhibitors in attempting to define learning engagement. They responded with comments such as "the way lecturers present the information," "when the content being learned is presented in an interesting way," "how much attention I suppose I am paying," and "when there are whole group discussions, listening to others and sharing my thoughts and understandings of the topic."

The analysis identified 14 themes for engagement enablers. These were categorized into four learning-related categories of factors: course, social, interface, and educator (see Table 3). Basic counts related to each theme and category show that the course-related category recorded the largest numbers of mentions. In contrast, the two themes that were mentioned most often were "activities that are interactive, hands-on, or practical in nature" (course content/design factors category) and "peer interactions/communications" (social factors category).

Table 3
Enablers of Engagement

Engagement Enablers		Count
Course content/design factors (158)	**Activities that are interactive, hands-on or practical in nature**	49
	Real-life learning: when theory and/or learning activities link to real-life practice and real-world application	29
	When learning is scaffolded: i.e., when current learning is reinforced or able to be practiced through multiple/supporting learning activities	27
	Content being learned is presented in an interesting way	19
	Relevance of content/when content is relevant	10
	Structure of the course Respondents mentioned: having set tasks that helped to keep them on track (4), and having clear course goals and a logical structure to the course and its virtual classroom (4)	8
	Activities that are challenging but achievable	3
Social factors (81)	**Peer interactions: communications and interactions with peers and educators**	39
	Face to face contact/communication with educators and peers	17
	Zoom	13
	Ability to ask questions	7
	Forum discussions	5
Interface-related factors	Online nature of learning content. This included the flexibility and ease of access of online learning (4), and having recorded lectures in an online format (6); having access to a variety of learning materials (1), and courses that used lots of visual aids (2)	13
Educator-related factors	Responses included: lecturers that are contactable and give timely responses (4); and lecturers that are themselves highly engaged with the students and interacting with online aspects of the course (5)	9

Note. The items in bold are the learning engagement qualities mentioned most often by students.

Most participants discussed enablers, but only 34 students mentioned inhibitors. Table 4 shows the themes that emerged concerning engagement inhibitors. The most common answer related to the use of pre-recorded online lectures. As only 34 students mentioned engagement inhibitors, it is difficult to make any inferences from the data or to categorize in any meaningful way. However, they align with factors identified as enablers (e.g., course content/design, social, interface, and educator-related).

Table 4
Inhibitors of Engagement

Use of pre-recorded lectures that "could apply to any year or semester" (3); or which are simply PowerPoint slides with a voiceover reading them (5)

Fully or mostly online courses: when most of the course content is provided in an online format (5)

Problems with technology or accessing online resources (4)

Perceived poor or lack of communication by lecturers (3)

Loneliness of online learning or feeling excluded or forgotten (3)

Perception that learning resources are not relevant (2), too complicated (2), or there is too much content or theory to get through (2) or too much reading involved in the course (5)

Student Perceptions About the Importance of Different Types of Interaction

Student perceptions about the importance of varying interaction types for engagement were investigated to explore which types of interaction students regarded as more important to their learning in online contexts. Concerning the four types of engagement suggested by Moore (1989) and Hillman et al. (1994), a comparison of the importance students place on each type of engagement is presented in the percentage stacked bar graph contained in Figure 1.

Figure 1

Comparison of 2018 (N = 391) and 2019 (N = 204) Student Responses to the Question that Asked Them to Rate the Importance of Different Types of Engagement
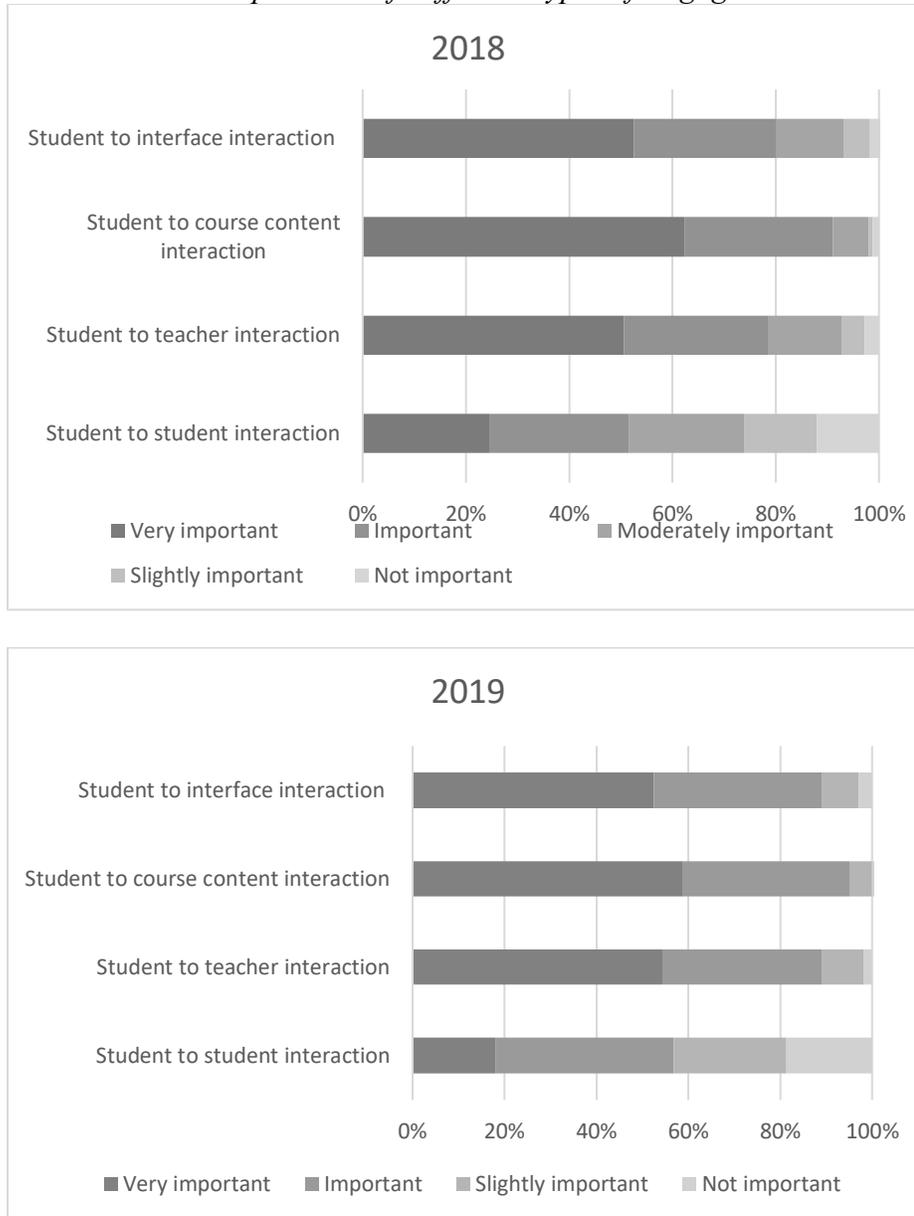
The student-course content interaction had the highest number of students indicating that this type of engagement was Very Important or Important to their learning (collectively 91.4% in 2018 and 94.6% in 2019). This seemed to match their preference for "doing" learning in concrete ways and their identification of activities evident in the qualitative data.

Likewise, across both years, the student-student interaction had the least number of students agreeing that this type of engagement was Very Important or Important (collectively 51.7% in 2018; 56.9% in 2019) and the greatest number indicating that it was Not Important (12% in 2018; 18.6% in 2019). Each year the student-interface interaction (with the study desk/virtual classroom or other ICT systems) and the student-teacher interaction received similar numbers of students agreeing that these engagement types were Very Important or Important (79.8% in 2018, 89.1% in 2019, and 78.5% in 2018, 89.2% in 2019 respectively). This suggested that the research participants preferred learning from a perceived expert of focused learning materials or activities, rather than learning with or from their peers.

Student Perceptions About the Importance of Different Types of Engagement

Student perceptions about the importance of different meta-constructs of engagement to online learning were investigated (based on Redmond et al., 2018). A distinct pattern emerged in students' responses. Figure 2 shows that three of the five engagement types can be ranked in a similar order in each year of the study, based on the number of Very Important and Important responses. Across both years, cognitive engagement received the highest percentage of combined Very Important-Important ratings by students (83.3% in 2018; 92.4% in 2019); behavioral engagement received the second most (81.8% in 2018; 88.9% in 2019); emotional engagement the third (75.8% in 2018; 81.3% in 2019); collaborative engagement the fourth (65.6% in 2018; 66.2% in 2019); and social engagement received the smallest percentage (57.4% in 2018; 58.1% in 2019).

Figure 2

Students' Perspectives of the Importance of Each Engagement Type across Years: 2018 (n = 335) and 2019 (n = 198)
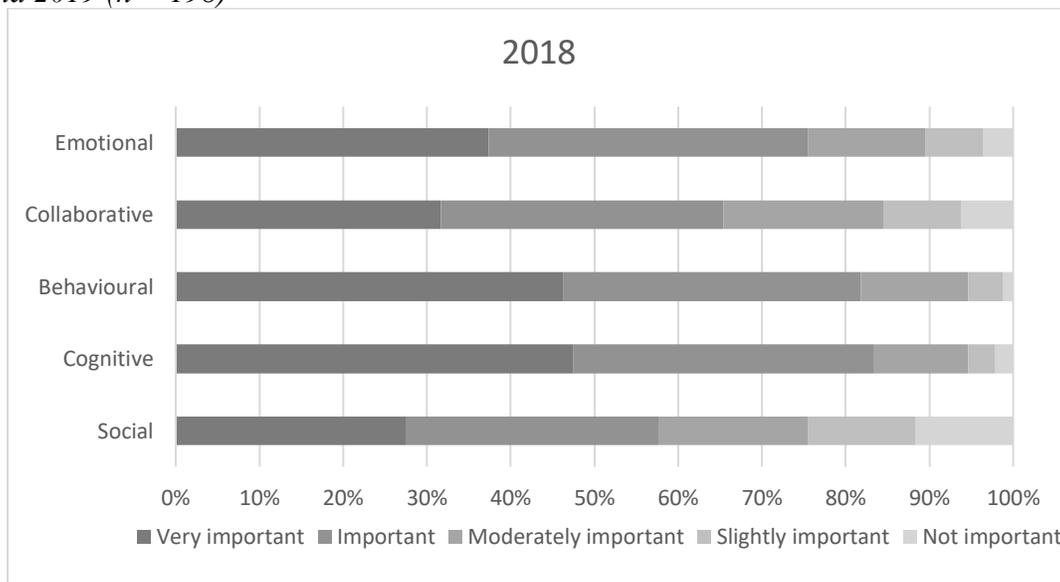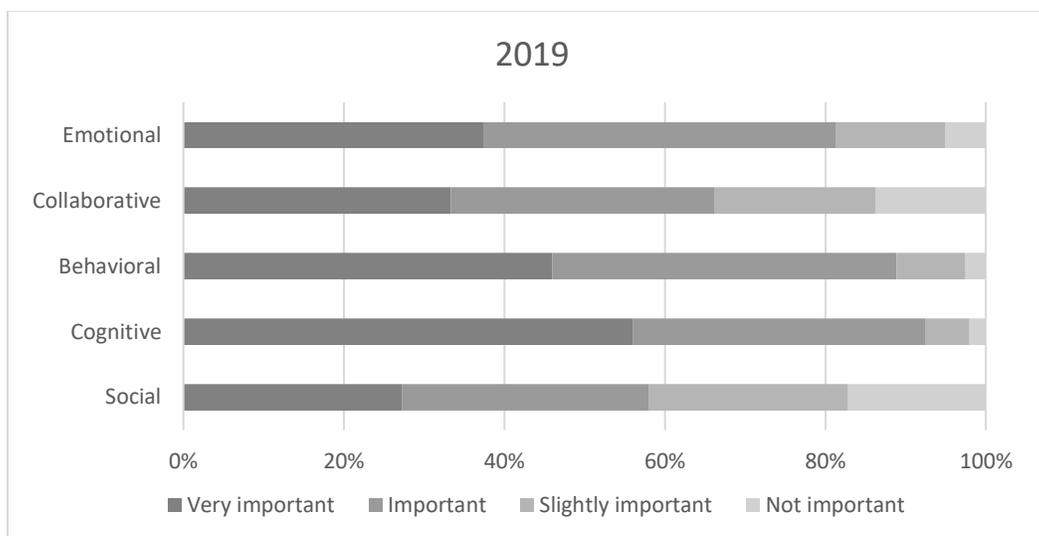
Discussion

Students were asked to define online learning engagement in both the interviews and the survey. Most defined engagement by giving examples. Some focussed on the activities they were doing when they felt highly engaged. Others described contexts or factors that enabled their engagement, such as the interactive or hands-on nature of learning tasks, or mentioned cognitive aspects in their definition, such as scaffolding learning through multiple learning activities related to current learning. Other students mentioned behavioral elements, such as attending tutorials. It was evident that students found it easier to explain engagement, which could be regarded as an abstract term, by drawing on concrete examples of what it means to be engaged in learning. The range of responses suggests varied understandings of what engagement is, and thus supports a multidimensional conceptualization of engagement amidst the complexity of students' perceptions (Buelow et al., 2018; Fredricks, Wang, et al., 2016).

When the qualitative data captured in Tables 2 and 3 are analyzed together, they illustrate that students equate learning engagement with the ability to undertake practical, hands-on activities. In both tables, the most often mentioned themes relate engagement to participatory-type activities. The finding that the highest percentage of students considered student-course content interaction to be very important to their learning engagement reflects the qualitative data in Table 3, in which "course content/design factors" was the engagement enabler category with the highest response count. This suggests that, from a student perspective, how students interact with course content is among the more important course design elements that can impact their propensity to engage with learning in a course.

When the qualitative and quantitative data from this study are analyzed together, the results relating to the importance of student-student interaction and social engagement are mixed. In the qualitative data, peer interactions or student-student interaction emerged as one of the most discussed elements as an engagement enabler or as an activity where they felt highly engaged. However, students' responses to the quantitative questions show that the social aspect of engagement (student-student interaction in Figure 1 and social engagement in Figure 2) was perceived as being the least important type of engagement in each framework. In both figures, the smallest percentage of students ranked the social aspects as Very Important to their learning.

In contrast, the largest percentage in each figure ranked the social elements as Not Important to their learning, thus indicating that student-student interaction was considered the least important interaction and social engagement was considered the least important meta-construct of engagement.

Research into the impacts of different types of interaction has produced mixed results. For example, some researchers have suggested that student-content interaction is a substantial forecaster of student satisfaction (Kuo, 2014) and has a larger effect on learning outcomes than other types of interaction (Ekwunife-Orakwue & Tian-Lih, 2014). Others have found that the quantity of student-content interactions was negatively associated with final grades, compared to student-interface interactions which had a consistent and positive effect on learning outcomes (Joksimović et al., 2015).

Further investigation into the social aspects of engagement is warranted. We recognize that the differences in the qualitative and quantitative responses could be related to how the quantitative questions were expressed in the survey instrument. For example, the question relating to social engagement included examples of "building community, feeling a sense of belonging, developing relationships, establishing trust with others." The focus in these examples was less about communicating with peers and more about building relationships. The way the qualitative questions asked students to rate the importance of each framework's various variables may have led to bias in the way students answered. Each question listed the factors relevant to each framework; that is, four factors from the Moore (1989) and Hillman et al. (1994) framework, and five factors from Redmond et al.'s (2018) framework. Listing the variables together in this manner may have resulted in students subconsciously considering each factor in relation to all factors for that framework, rather than considering each factor's value in isolation. The considerable differences observed between the qualitative and quantitative student responses in relation to the social aspects of engagement, together with the mixed results in previous research, suggest that further investigation into the importance of social engagement to student learning is necessary.

We are mindful that the project described here captured data from research participants from only one university, and that it would be useful to broaden the study to look across a range of institutions. Furthermore, the study did not consider the diversity of the research participants and their higher education study. For example, some participants were undergraduate, and others were postgraduate, and they were studying across a range of disciplines (see Appendix A). Because the majority of research participants were female and mature-age, future investigations could also consider the role of gender and age on perceptions about online engagement. In addition, although all the participants experienced a "digital first" enrolment, the study did not investigate whether perceptions about online engagement varied in relation to students with blended or fully online experiences. Further research in these areas is warranted.

The findings from this study have several practical implications. It would be prudent to design course learning environments to focus and capitalize on the learning qualities that students have identified as important to their positive learning engagement. The five themes that were mentioned most often may be those that reflect the most effective features of a learning environment for helping to engage students. Notably, the students' perceptions suggest that learning activities that have the following characteristics are most likely to encourage student engagement:

(1) are interactive, hands-on, or practical
(2) involve communicating and interacting with peers and educators

(3) provide real-life learning by linking theory to real-life practice through activities that have relevance to real-world application

(4) provide opportunities for current learning to be reinforced or practiced through the use of multiple, scaffolded learning activities

(5) present content in an interesting manner

For example, offering practice exercises, the most mentioned activity in Table 3, is a way to scaffold learning and provide real-life theory practice. Tutorials (see Table 2) are learning situations that enable engagement that regularly requires peer interaction. Tutorials are also used to put theory into practice. Groupwork (see Table 2) allows peer interaction and often requires active/interactive involvement in learning tasks.

This study, however, is limited by the small sample size and the fact that all participants came from one regional university. However, the study's cross-disciplinary nature and the quantitative and qualitative data help to minimize those limitations. The data were self-reported, and we have no way of measuring if there is any relationship between students' perceptions and their actual online engagement behaviors; thus, there is limited ability to generalize to different contexts. Future research could focus on cross-institutional studies of student perceptions of online engagement.

Conclusion

Most descriptions of student engagement consider that engagement requires productive student contributions to a learning environment. This study supports recent arguments for a rethinking—or at least a constant refining—of our understanding of student engagement (Azevedo, 2015; Fredricks, Wang, et al., 2016; Kahu & Nelson, 2018; Tai et al., 2019), especially in relation to social engagement. In addition, it contributes important information about student perceptions to reconsider what matters for students' learning within online learning contexts, particularly in its presentation of five examples of how students believe online courses can be designed to engage learners more effectively. The ways in which teaching, and learning occur within online courses influence students' perceptions of learning and their expectations of how the learning is designed, organized and facilitated; therefore, we must look beyond academic definitions of engagement to improve student learning experiences.

Indeed, when trying to develop scalable and sustainable policies, procedures and practices related to online engagement, all stakeholder voices must be heard. Future conceptualization and measurement of online engagement need to involve students in dialogue about what engagement means. The empirical findings from this research acknowledge the importance of the student voice to contemporary understandings of online engagement. This is a key starting point for discussions about student engagement in online environments via stronger partnerships between students and institutions.

Conflict of Interest
The author(s) declared no conflicts of interest.

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Appendix A

Disciplines and Levels of Study From Which Research Participants Were Recruited

Discipline	No. of Courses	Level of Study
Business (Accounting)	1	Undergraduate: Second-year course
Education (Early Childhood)	3	Undergraduate: First-year course Second-year course Third-year course
Education (Technology)	2	Undergraduate: Fourth-year course Postgraduate course
Engineering (Survey & Built Environment)	1	Undergraduate: Third-year course
Nursing	1	Undergraduate: Second-year course
Science (Mathematics)	1	Postgraduate course
Science (Physics)	2	Undergraduate: Two first-year courses
Science (Research)	1	Postgraduate course