Pathways to engagement: A longitudinal study of the first year student experience in the educational interface

Ella R. Kahu, Catherine Picton and Karen Nelson

Student engagement is critical to success in the first year of university, yet evidence about how and why various factors influence engagement remains relatively rare. This study addresses this gap combining an existing framework of student engagement (Kahu and Nelson 2018) with student narratives to provide a detailed understanding of students' engagement throughout their first year. Weekly semi-structured interviews with 19 first-year students at an Australian university illustrate how student and university factors interact to influence engagement, as conceptualised in the framework. The findings provide empirical support for the framework of student engagement, offering a more nuanced understanding of the student experience within the framework's educational interface. The importance of self-efficacy, belonging, emotions and wellbeing as interwoven pathways to student engagement is demonstrated and the contextual and dynamic nature of engagement highlighted. Further work is necessary to understand how this knowledge can best facilitate student engagement and perhaps reduce cycles of disengagement.

Keywords: student engagement, first year experience, higher education, critical realism

Introduction

This paper presents findings from an empirical study at an Australian regional university, using the student voice to investigate *how* various factors influence the engagement of first-year students. The aim of this research was to understand the complexity of the student

experience including their engagement, focusing on Kahu and Nelson's (2018) educational interface: 'a psychosocial space within which the individual student experiences their education' (p. 6). The educational interface proposes four pathways to engagement – self-efficacy, emotions, belonging and wellbeing (see Figure 1). The current study combines this previous theoretical perspective with data about the lived experiences of students to provide a better understanding of student engagement.

Student engagement is widely recognised as valuable to a variety of student outcomes with Trowler and Trowler (2010) arguing that its importance is 'no longer questioned' (p. 9). A plethora of studies have been conducted on student engagement (see for example, Krause and Coates 2008; Zepke, Butler, and Leach 2012) yet an in-depth understanding of student engagement remains a challenge, partly owing to the complexity of the multiple factors that influence it (Bryson 2014; Kahu 2013).

We understand student engagement to be a student's behavioural, emotional and cognitive connection to their learning (Fredricks, Blumenfeld, and Paris 2004). Drawing on a range of literature including Astin's (1984) early work on student involvement and Mann's (2001) social contextualisation of engagement, Kahu (2013) developed a holistic framework that depicted the antecedents and consequences of student engagement. What was not well captured by the original framework is the interaction between students and institutions that is critical to engagement – as argued by Chickering and Gamson's (1987) early work on student and institutional factors and Pascarella and Terenzini's (2005) work on the link between teaching practice and engagement. In a subsequent refinement of the framework, Kahu and Nelson (2018) adapted Nakata's (2007) idea of a cultural interface: a 'multi-layered and multi-dimensional space of dynamic relationships constituted by the intersection of time, place, distance, different systems of thought' (p. 199) to propose that the student experience occurs in an 'educational interface', and that engagement is a critical component of that

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experience within the interface as illustrated in Figure 1. This approach acknowledges

students as 'agents of their own lives' (Nakata 2002, p. 285), constructing engagement as an

active and continuous process influenced by student and university structural and

psychosocial factors, as well as the broader socio-cultural context. Thus, the educational

interface offers 'a cogent explanation for the dynamic, complex and individual nature of

students' psychosocial learning experiences' (Kahu and Nelson 2018, p. 2). Framed by a

critical realist perspective, which acknowledges the importance of context and views the

social world as open and complex (Danermark, Ekstrom, Jakobsen, and Karlsson 2002), the

current study augments this previous explanation by combining the theory with a rich data set
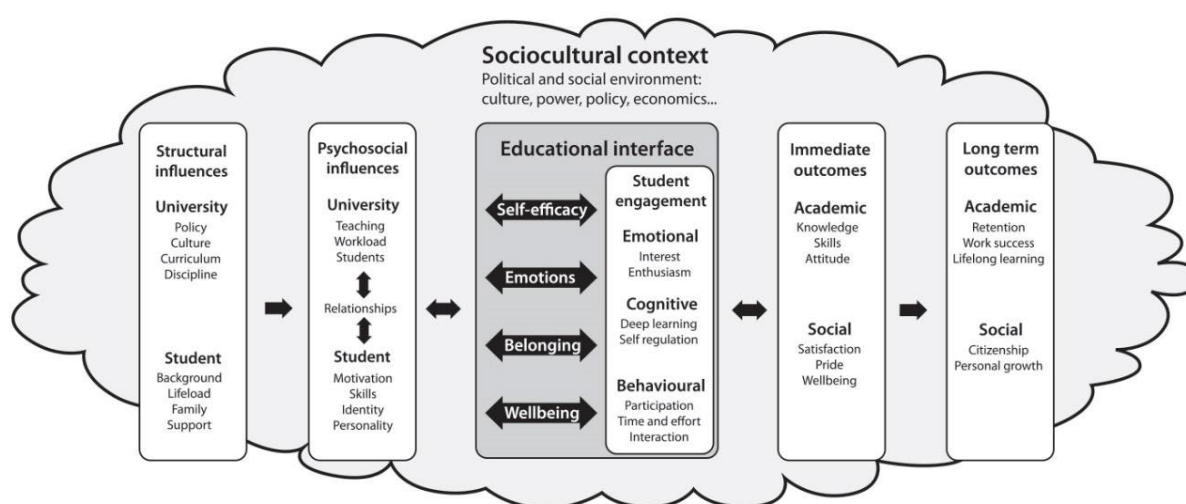
of student voices.

Fig. 1 Refined conceptual framework of student engagement incorporating the educational
interface (Kahu and Nelson 2018, p. 64)

Within the educational interface, four elements of the student experience that stem

from the interaction between student and institution – self-efficacy, emotions, belonging, and

wellbeing – act as mediating variables, or pathways, which increase or decrease the

likelihood of engagement (Kahu and Nelson 2018). Examples of research on specific

pathways to engagement include Thomas's (2013) work on student belonging as crucial to

retention and success in higher education; Morton, Mergler and Bowman's (2014) findings that self-efficacy, optimism and wellbeing impact on student adaptation to university; and Lerdpornkulrat, Koul and Poondej's (2018) findings that student involvement, perceived meaningfulness of content, and perceived autonomy are all influencing factors on emotion as a pathway to engagement. These studies offer important insights, but are limited to specific components of students' experiences. The current study takes a more holistic approach; rather than isolating particular variables, the analysis uses Kahu and Nelson's (2018) integrated framework to better understand the student experience.

The aim of this research therefore is to gain an in-depth understanding of the complexities of the student experience and engagement within the educational interface through the use of student narratives. The analysis of qualitative data enabled the abstraction and conceptualisation of the interactions that influence the pathways to engagement and revealed the complex and interwoven relationships that occur within the educational interface.

Methodology

The data reported in this paper are drawn from a qualitative study theorising and empirically investigating first-year student experiences at an Australian regional university. Empirical studies such as this are underpinned by a meta theory that outlines the nature of the social world (Scott 2005). The critical realist perspective framing this study combines a realist ontology with an interpretive epistemology, maintaining that while the world is real, our understanding of it is limited and socially constructed (Bhaskar 1998). The student experience is situated as complex and diverse, yet not beyond understanding (Sayer 2000). Critical realist studies do not follow the positivist goal of identitfying universal laws or consistent relationships between variables (Maxwell 2012). Rather a critical realist study

takes a non-deterministic view of causality with the term mechanism often used to represent an underlying causal process (Bygstad and Munkvold 2011). Critical realism aligns well with Kahu and Nelson's (2018) theoretical framework: As Kahu (2013) points out, the framework does not suggest variables guarantee engagement, but rather that each has the potential to impact engagement depending on the context and the other mechanisms at play. The aim of this project then is to better understand the processes that can lead to student engagement.

As Case (2013) notes, research in education often privileges either structure or agency, whereas critical realism enables a more nuanced understanding of the interplay between the person and their social context. Again, this aligns with Kahu and Nelson's (2018) framework where that interplay is depicted by the educational interface. Archer (2007) highlights that reflexivity mediates the relationship between structure and agency – students 'consider themselves in relation to their (social) contexts' (p. 4), and Kahn (2014) builds on this to argue that student engagement 'manifests as the exercise of agency in given environments for learning' (p. 1007). Engagement is one manifestation of student reflexivity and, as the framework shows, the student's assessment of themselves in relation to the current learning task or context may also manifest as self-efficacy, emotions, belonging and/or wellbeing. For instance, as Archer (2006) explains, emotions are 'our reflexive response to the world' (p. 268).

Assumptions about the social world lead to particular choices of methods although critical realist researchers have been described as eclectic in terms of research designs (Ackroyd and Karlsson 2014). Critical realism acknowledges the world as 'theory-laden but not theory determined' (Fletcher 2017, p. 182), seeing the combination of rich empirical descriptions with theoretical perspectives as critical to making judgements of the nature of reality. Increasingly, institutions recognise the value and necessity of student qualitative data

as an indicator of educational quality (Shah and Richardson 2016; Symons 2006). The student voice, in combination with established student engagement literature, is a valuable tool for understanding student engagement, conveying how different factors might influence engagement and why particular issues are important to students (Grebennikova and Shah 2013). Valuing students' perspectives also acknowledges the agency of the students, addressing Trowler and Trowler's (2010) concern that 'students are typically presented as the customers of engagement, rather than co-authors' (p. 14). Our focus then was on identifying consistencies and differences between students' stories and the framework to enable a better understanding of the complex interactions between students and institutions that influence student engagement.

Nineteen students (11 female and 8 male) were recruited for the year-long study. All participants were 17 years of age at the start, full time, campus based, and enrolled in a range of disciplines including health, business, psychology, journalism, and creative arts. Eleven were first in their family to attend university. Prior to their first semester, participants were interviewed about their expectations and perceptions of university. Following those interviews, 18 participants committed to weekly semi-structured interviews during their first year. In the interviews, the student was given the opportunity to talk about whatever aspects of their student life that they wanted. However, at times, to keep the conversation flowing and to direct their attention to topics they may not have considered, we asked more targeted questions such as 'What does success mean to you?' and 'What have you learned about yourself as a learner?' In total, 362 interviews were conducted generating 105 hours of recorded and transcribed data. Conducted by the second author, these one-on-one interviews enabled students to talk about aspects of their experience that were relevant and important to them. The relationship between participants and researcher was critical to establishing a trusting space for students to share their experiences and thus build a clearer understanding of

students and their circumstances.

Thematic analysis is an appropriate tool for identifying patterns of meaning in a critical realist study (Clarke and Braun 2017). The complete data set was analysed to investigate how student and institutional factors intersected and influenced students' experiences, focussing in particular on the role of the four pathways illustrated in the framework of student engagement. Throughout the analysis we explored the ideas represented in the framework in relation to the students' lived experience to understand the complexity of student engagement. In the first phase of the analysis, the researchers held weekly meetings during data collection to examine the data, discuss emerging themes across weekly interviews and create summaries of students' experiences. This process informed the development of a coding schema that reflected both elements of the conceptual framework (Kahu and Nelson 2018) and student-generated ideas. This schema ensured the coding was reliable and consistent.

In the second phase of analysis, the transcribed dataset was coded in NVivo™ using codes established in the first phase while remaining responsive to new and emerging codes revealed through the student narratives. This ensured the data was 'assessed in meaningful ways regarding the phenomena' (Boyatzis 1998, p. 63) of student engagement, and anchored the findings both in the students' empirical experiences and the established theoretical framework.

In the third phase, codes were cross-analysed against the entire data set using advanced coding queries within NVivo™. This final phase of analysis was designed to identify patterns and relationships between codes and within data extracts to articulate the complex interactions and influences that occur within the educational interface. Here we focussed on what Maxwell (2012) refers to as connecting strategies as a means to counter the fragmentation of data that can occur with coding. In particular, we were looking for patterns

between aspects of students' experiences, the pathways to engagement, and engagement itself to enable us to understand how the pathways function. This cross-analysis identified three interrelated patterns – individual pathways to engagement, connections between those pathways, and cycles of engagement – that together illustrate the holistic student experience. We then refined and evaluated these against both the framework and the broader dataset. This iterative process addressed the concern that a pure thematic analysis can have 'limited interpretative power beyond mere description if it is not used within an existing theoretical framework that anchors the analytic claims that are made' (Braun and Clarke 2006, p. 97).

Findings

The students' experiences, journeys, and outcomes during the year were diverse and individual. A wide range of structural and individual factors such as relationships, teaching styles, and student motivation influenced that experience, sometimes positively and other times negatively. Lifeload, defined by Kahu (2013) as "the sum of all the pressures a student has in their life" (p. 767) including relationships, paid work, and leisure, was also identified as an important influence on students' experiences. The analysis explored idiosyncratic experiences at the intersections of student and institutional influences focussing on the role of the four pathways illustrated in the framework of student engagement. Findings are presented in three sections: the complex ways that institution and student factors interact to influence the four pathways to engagement; the connections and overlaps between the pathways; and finally the positive and negative cycles of engagement that students experience. Importantly, as highlighted by the critical realist perspective, these are possible patterns of data and not fixed or guaranteed processes. Each student's experience is unique. The illustrative data extracts show which interview (Semester, Week) the quote is drawn from.

Pathways to engagement

This first section presents the analysis of the role of the four individual pathways within the educational interface: wellbeing, emotion, self-efficacy, and belonging. Multiple student, institutional, and contextual factors interacted to negatively or positively influence the pathways, for instance increasing or decreasing a student's wellbeing, depending on the particular context and student. Similarly, the pathways positively or negatively influenced the students' emotional, cognitive, and behavioural engagement with their study. For example high self-efficacy or strong belonging could increase engagement, while negative experiences such as stress or anxiety often reduced engagement. The following are illustrative examples rather than an exhaustive list of how factors can influence the four pathways to engagement.

Wellbeing

All of the pathways were reported to be significant triggers of engagement, with wellbeing particularly notable. The students talked extensively about physical and psychological wellbeing and its impact on their behavioural, cognitive, and emotional engagement.

Physical issues (e.g. tiredness from workload, illnesses, and lacking time for exercise) were discussed as both leading to and stemming from stress, impacting negatively on students' ability to engage with their study. But as critical realism suggests, the impact of structural factors is always mediated by human agency; at times, that agency was explicit with students managing their wellbeing through intentional strategies such as exercise and taking breaks. Improved wellbeing then facilitated cognitive engagement as Tony explains:

> It's just to give your brain a break. After two hours of studying, it's good just to get up, walk around, go for a run, swim, read, hell even sit in front of the TV and just gaze at that for a bit and then come back to it to see if you understand it. (Tony, S2W7)

The students also talked about relationships as critical to wellbeing. For many, family support was a positive influence; as Sienna explains, her mother provided valuable academic support and practical support which reduced her stress levels:

> I'm definitely supported by my family…my mum helps me all the time…with assignments, but it's not just that, it's that dinner is on the table and I'm still living at home, and I've got a place to stay and I don't have to worry about rent or electricity or anything like that. (Sienna, S1W10)

For other students, such as Felix, family induced stress: 'I started seeing a psychiatrist about the fact that my parents aren't really there for me' (S2W13). For students living away from home, various challenges (including daily life responsibilities and relationships with people in shared accommodation) could detrimentally influence wellbeing.

Friends also fostered wellbeing. Students talked about the value of sharing similar experiences with friends, having people to talk over personal or university problems with, and having fun as some of the ways that friendship improved wellbeing, helping to balance the stress of university life.

> Just generally hanging out really, it's not too much more in depth than that. It doesn't sound like much but it goes a long way when you're just constantly working and really burning yourself out, to be able to just sit back and have a laugh. (Isaac, S1W10)

Finally, institutional influences on wellbeing were also evident: 'They [support staff] are just so understanding and that's really helpful. That makes me feel a little bit better about the fact that I'm struggling, some days' (Zara, S1W11).

Emotions

Students reflexivity about their experiences at university led to a wide range of emotions and these emotions could facilitate or hinder engagement. For instance, if they particularly enjoyed a class they found learning easier: 'the subjects I like the most, I get the most out of

and do best in' (Zara S1W8). Whether a particular course triggered positive or negative

emotions depended on its alignment with personal preferences, interests or goals as the

following examples illustrate:

> I loved [class] because of the lab side of it, like looking under microscopes and that practical side of it was just so much fun. (Heidi, S2W1)

> We're looking at atoms and molecules and chemicals. I hate it so much. We're in an actual lab with coats and glasses and I'm like, I'm not going to be doing this for a living. (Karla, S1W5)

These emotions then influenced the students' engagement – both their willingness to

do the tasks as well as the depth and nature of their learning. Many other factors, such as

motivation and goals, triggered emotional responses which impacted on student engagement

as shown in the following example:

> Being the first family member going to university is very motivating for me. I know my grandchildren or my nieces or nephews will always think, 'Aunty Elisabeth was the first one to go to uni.' It's sort of a thing that makes me a bit happy. (Elisabeth, S1W12)

Negative emotions such as worry could stem from specific university tasks such as

assessments, but if these emotions stemmed from wider issues such as lifeload the impact on

their engagement was more universal: 'I've just been out of focus really…because I've just

been worrying about everything else…I had been under a really big slump with everything.

It's affected how I think and I think, I can't do this' (Rose, S1W6). The worry impacting on

her self-efficacy and wellbeing is an example of the links between the pathways as discussed

shortly.

Self-efficacy

Both student and institutional factors influenced self-efficacy. For instance, the student's

background, skills, and previous learning experiences were important in determining task-

specific self-efficacy: 'I'm coming straight from school, I already know how to write a paragraph, how to structure referencing and all that sort of stuff' (Alex, S1W1). Institutional factors such as the nature of the task, teaching styles, and feedback also influenced student self-efficacy: 'I've had a talk with (lecturer) about my formatting and stuff, he's done a quick overview and he says it should be okay. So I'm feeling fairly confident about it' (Tony, S1W8).

The analysis shows student self-efficacy influenced all three dimensions of engagement. First, it was an important influence on interest and enjoyment: 'I realized, hey, I could do this. This seems interesting. It seems like something I would genuinely enjoy' (Felix, S2W5). Second, self-efficacy influenced behavioural engagement – when a student felt capable of doing the work, they found it easier to put in time and effort: 'I'm feeling quite calm about it. I know I can get a good mark on that one if I revise and put my effort into it' (Elisabeth, S1W11). Equally, when students struggled with the work and lacked self-efficacy, they were more likely to avoid study: 'I don't want to stay in a class if it's making me feel bad about myself because I'm not doing as well I want to be doing' (Zara, S2W2). Finally, self-efficacy influenced cognitive engagement, the student's ability to attempt the task and to learn: 'Yeah that's easy, I understand it – I know what I'm doing' (Peter, S1W4).

Belonging

Students talked about belonging as a contextual experience – within classrooms, to the university, or to their discipline. Friendships were central to most students' sense of belonging in a particular class, promoting behavioural and cognitive engagement as Felix explains: 'I'm starting to make friends, which is great. Making friends in class has helped me feel comfortable enough to sit and listen and learn and engage in the class' (S1W6).

Relationships with teaching staff were also important for some students and, as Mia explains, feeling supported contributed to belonging and promoted cognitive and behavioural engagement: 'Just the support that they [teaching staff] actually gave me when I did reach out to them. When I was doing my assignment and I had questions about that. It made me feel like I fitted a bit better, because I knew I had the support from them' (S2W13).

Students also talked about belonging, or not belonging, to their discipline. This was linked to the teaching environment, staff, and their learning in relation to past experiences or future goals. Zara, for instance, struggled to align her background and values with the world of journalism making motivation difficult:

> I feel like I come from quite a bogan little family and my tutor, she is quite wealthy and I struggled to feel like that's what that world is. The world of journalism is people with money. That has been a struggle for me. It's like is that a world that I'm gonna be a part of, or a world that I wanna be a part of? (S1W6)

In Australia, bogan is a term used as a derogatory label for poor white people (Pini, McDonald, and Mayes 2012). Here Zara uses it to distinguish herself as different from her tutor and therefore as not fitting easily into the world of journalism which she feels is centred on money.

In contrast, Matthew's relationship with his tutor and his perception of the tutor's teaching style increased belonging – to the discipline and university: 'He talks to us as if we are other journalists… it makes you feel like you're actually doing what you want to do and what you signed up to university to do' (S1W9).

These examples provide insight into the multitude of structural and psychosocial factors that interact to construct students' experiences within the educational interface. It is apparent in this analysis that while any given factor can increase or decrease student engagement, as critical realism highlights, this is not guaranteed. Context is critical and other

factors can simultaneously exert opposite effects. While we have so far presented the analysis around each pathway separately, it would be a mistake to see the student experience within the interface as a tidy and linear process. It is not. As discussed in the next section, the pathways overlap and influence each other.

Connections between pathways

While self-efficacy, emotions, belonging, and wellbeing at times acted as separate influences on engagement, often they worked together, acting as multiple and simultaneous pathways to engagement, or to disengagement.

In the students' talk it is not often clear whether one pathway was influencing another or if they were triggered synchronously as the following examples illustrate. Zara talks about a particular class: 'I feel happy when I am in that class. I feel comfortable. I learn about whatever we are talking about' (S1W9). She experiences the positive emotion of happiness, a sense of belonging, and high self-efficacy, which together strengthen her cognitive engagement in the course. In another example, the reciprocal relationship between Peter's self-efficacy and his sense of belonging is evident: 'I feel like I belong in the course. I find it very easy to understand and interesting' (S1W5). Alison talks about friendships increasing her wellbeing and self-efficacy which together help to maintain her interest, her emotional engagement, in the class: 'Having a friend is making me more relaxed as well because we can help each other with work and all that sort of stuff and I'm not going to be so bored' (S1W1). Felix also illustrates the critical links between positive emotions, self-efficacy, and wellbeing: 'The journalism side of things is really engaging. It's fun content... It's something that I'm able to do and do well, as opposed to something that's not in my skill set and sucking at it' (S2W12).

Interactions and overlaps between pathways can also be negative and reduce student engagement. For instance, struggling with a task doesn't just lead to lowered self-efficacy, it can also trigger negative emotions such as anxiety and frustration and increase stress as Elisabeth explains: 'So accounting is very overwhelming and confusing and stressful. Maybe I just don't understand it. We just get thrown into it and we just have to do it. It's very stressful' (S2W6).

Zara experienced negative overlaps of belonging and wellbeing. Having aspired to her chosen discipline from an early age, her course was not what she expected and the subsequent lack of belonging negatively influenced her wellbeing:

> This thing that I had wanted to do since I was 14, like suddenly it wasn't and it just made me feel really lost and I felt like I didn't have any control over what was happening, it wasn't what I had wanted or expected, kind of just went a little topsy-turvy for a little while there and it got a little bit hard I think for me. (S2W5)

This analysis highlights that the four constructs are not independent of one another; they are fundamentally connected and act together to influence student engagement at university. The analysis also highlights that all aspects of the student experience, the four pathways and engagement itself, are contextual. For instance, a student can be experiencing high self-efficacy and a good sense of belonging leading to strong engagement in one class but be struggling, unhappy, and disengaged in another. In any context, it is the sum total of the pathways that determines whether a student is engaged, with one pathway able to mitigate the effect of others. Matthew's experience is a good example:

> I'm always so tired at the start because it's seven o'clock at night but by the time I walk in and you get the warm welcome from my tutor and you get a hello from everyone in the class you're just energised and excited. Even though you have to do these stupid style questions, which no one likes but are important, it's just a fun tutorial. Everything is kept light-hearted and enjoyable, our tutor jokes about a lot, he talks to us as if we are other journalists. He basically acts as our editor and treats us all equally, which is

> fantastic because it makes you feel like you're actually doing what you want to do and what you signed up to university to do. It's just always a really enjoyable class. (S1W9)

Matthew has little interest in the particular task of this class and at the start his wellbeing is low. However, the teaching style creates an environment where Matthew has a strong sense of belonging – to the class and to the discipline. His tiredness and lack of interest is mitigated by that sense belonging. Recognising the tasks as important to his future career also promotes engagement despite it being late in the evening.

So far we have presented evidence of various factors interacting in a particular context to influence engagement directly or via the pathways. However, one of the strengths of this study is that it followed the students throughout the year rather than examining a single snapshot in time. This allowed us to also explore how the experience in the educational interface changes through time.

Cycles of engagement

The analysis showed that dimensions of students' experiences such as wellbeing and emotions fluctuated, sometimes rapidly, during the semester as both student and institutional antecedent variables shifted and changed. Midway through the second semester the students were asked to choose from a set of photographs that represented their university experience. Choices included rollercoasters, car wrecks and piles of shredded paper with the students talking about how variable, challenging and complex their experience of university had been so far: 'the ups and downs throughout uni' (Sienna, S2W6). A dominant theme in the chosen images was a lack of control suggesting that at times students struggle to feel any sense of agency in this setting.

For some students, their experiences were a predominantly positive cycle. The student actively engaged in tasks, completed assessments, and experienced positive academic

outcomes of knowledge and grades and emotional outcomes of satisfaction and pride. The

analysis shows these outcomes have an ongoing influence on the student's future

engagement, both by increasing the student's motivation but also via the four pathways –

triggering positive emotions and increasing self-efficacy, belonging, and wellbeing as the

following examples illustrate.

Alison talks about how completing her first assignment triggers positive emotions –

both immediately and in the future. Positive feedback leads to positive emotions, universally

boosting her self-efficacy and strengthening her sense of belonging at university:

> So first uni assessment done. I met with the course coordinator yesterday…
> he said that my academic style is good. I'm excited because it's my first one
> done and he says it's good. I was pretty happy with myself, like I can do this
> – a bit of reassurance, like I can actually be a uni student successfully, I'm
> not just pretending. (S1W4)

Her growing sense of herself as an active agent in this process is evident. John

describes how positive academic outcomes increase his self-efficacy, his motivation and

ultimately his future engagement: 'I already got feedback off my first assignment, which we

did okay in – I think we got a distinction, so that's okay but now I can get a high distinction

because she wrote feedback on all of it' (S1W5). Elisabeth's experience illustrates that this is

a repeating process for students:

> When you don't understand something and you're so caught up in not
> understanding it and you're so upset and then you open up the textbook and
> you read it over again, you try and it work it out in your head and then you
> finally understand it. I think that's something I find very satisfying… looking
> back and being like, 'I didn't understand that but now I understand it really
> well,' and just continuing that process. (S2W9)

Elisabeth's determined behavioural engagement in the face of challenge leads to both

understanding and satisfaction. Reflecting on that, she feels an increased self-efficacy and a

positive sense of wellbeing going forward. Her expression 'continuing that process'

highlights the cyclical nature of the student experience within the educational interface.

Fluctuations and cycles of engagement were not always positive. For instance, Luke

was excited to do coding at university but struggled with the content: 'It's difficult but we've

only just started so I'm not too surprised' (S1W2). As the semester progressed his difficulties

impacted on his self-efficacy triggering strong negative emotions: 'I'm really struggling in it,

because I'm not good at coding… Coding is very, very hard and frustrating' (S1W9).

Reflecting back at the end of the year he comments that coding 'killed my confidence. It

killed my self-esteem quite a bit' (S2W13). But Luke was not one to give up: 'I'm going to

pick it up, rest assured' (S2W13). This again highlights that it is the interaction between

student and university that matters – a particular situation which for one student can lead to a

sense of alienation and perhaps withdrawal, in another can trigger a determination to change

things.

For some students, the first semester in particular was a downward spiral. They

started the year with an overall sense of wellbeing and positive emotions as they looked

forward to a new era of their life, but university and their courses didn't necessarily live up to

those positive expectations. Workloads increased, impacting on their wellbeing and reducing

their engagement with university in general as Sienna explains:

> At the start I was happy, I was excited, because I'd never done it before.
> When I was starting to get used to it – the course just threw me off a bit
> because as I said I do like it but I don't, at the same time. And then things
> started getting a bit more hectic and I just started hating it. It was making my
> life miserable. (S2W13)

Claire also started positively but didn't enjoy nursing and felt no sense of belonging to

the discipline. Her lack of interest and uncertainty about her future led to a general feeling of

stress: 'I like wanted to change my course. It's so stressful. I'm changing from nursing to

social science and I want to major in psychology. And now I was like, I don't even know what I want to do with my life' (S1W6). Despite struggling to take control over the situation she was left feeling out of place.

Wellbeing was particularly notable for its fluctuations throughout the semester and was arguably the least predictable pathway, with downturns triggered by university and/or life outside of university. Matthew for example talks about his experience during first semester exams: 'My relationship had ended the day before [exams] started and I'd been working non-stop. I think I'd worked 50 hours the week before… It was to a point where I wasn't sleeping and I was just broken. I just couldn't do it' (S2W5). Matthew passed his exams and described the beginning of the next semester as a 'sunrise… a new beginning' (S2W5) – illustrating the cyclical nature of the university rollercoaster.

Together these analyses highlight that students' experiences and their engagement are both contextual and dynamic. The pathways illustrated in the framework are outcomes of the students' conscious or unconscious reflections on their situation and are important aspects of that experience. Those pathways can then increase or decrease a student's engagement within a particular context. What is also evident from the analysis is the role that students play as active agents in this process. Peter, in giving advice to future students, sums it up well: 'A related effect that can be brought on by the workload is doubt, frustration, and possible loneliness…On those long, seemingly endless nights of studying and writing, I can say this. Hang in there. These are the low speed bumps that'll pass' (Peter, S2W6).

Discussion

This paper contributes to the body of knowledge on student experience and engagement by providing empirical support for the framework of student engagement which, as explained in detail in the earlier papers (Kahu 2013; Kahu and Nelson 2018), is grounded in and builds on

findings and theories from a range of researchers in higher education. Previously, we have investigated and reported on specific aspects of the student experience through the framework such as friendship (Picton, Kahu, and Nelson 2017), interest (Kahu, Nelson, and Picton 2017), and success (Picton, Kahu, and Nelson 2018). However, the current paper contributes a more holistic view of the student experience, illustrating how the theory of student engagement plays out across the lives of contemporary students.

By following students through their first year with weekly interviews, the findings add a strong student voice and a rich understanding of the complex, dynamic, and interconnected nature of the student experience and their engagement with their studies. Similar to Bryson and Hardy's (2014) four year study, this study found influencing factors 'ebbed and flowed over the course of their journey affecting some students to a greater or lesser degree depending on their context, perspective and agency' (p. 25). At times the ups and downs are linked to the patterns of university life such as the start of the semester, assessments and breaks. At other times the ups and downs are less predictable – triggered by the interplay between structure and agency; between institution and student.

Pathways through the educational interface

There is strong support for the theoretical concept of an educational interface. As argued by other researchers in this area (e.g. Astin 1984; Tinto 1975) the student experience at university is formed not by separate factors but rather the interplay between the student and the university and wider structures. Students have developed unique personal capacities and properties which they bring to their studies and they are active agents in their experiences (Case, 2013). It would be difficult, if not impossible, therefore to accurately predict a student's level of engagement in any particular setting or at any particular time.

We have found that the four pathways within the educational interface are often discussed by students as central elements of their experience and as critical influences on their engagement and subsequent success at university. This finding supports previous research on the individual pathways such as self-efficacy (Chemers, Hu, and Garcia 2001; Phan 2014), belonging (Tinker and Elphinstone 2014), emotions (Kahu, Stephens, Leach, and Zepke 2015) and wellbeing (Holdsworth, Turner, and Scott-Young 2017). Importantly, these are non-deterministic causes of engagement. For instance, while a strong sense of belonging increases the likelihood of engagement, there is no guarantee.

Adding to this, our findings highlight that the pathways often act in concert, influencing each other. For instance, self-efficacy could increase student belonging to a class or discipline, and belonging was an important influence on wellbeing. Walker, Green, and Mansell (2006) found, as we have, that self-efficacy and academic identification, a form of belonging, independently predicted cognitive engagement; they argue that more research is needed to better understand the relationship between these variables: 'The confluence of these variables is not in question, but there may be an order of influence that would inform attempts to encourage more positive motivation and engagement' (p. 9).

Self-determination theory is also useful for understanding the links between the pathways. Ryan and Deci (2000) argue humans have innate needs for relatedness, autonomy, and competency and thwarting these needs leads to reduced motivation and wellbeing. This helps explain our findings on the links between wellbeing, belonging, and self-efficacy, as well as the reciprocal impact the pathways had on motivation. More research is needed to better understand the complex links between these dimensions of student experience as they are critical to the positive, or negative, cycles of engagement discussed below.

The findings from this study also support Kahu and Nelson's (2018) point that the four pathways, while depicted as separate in the diagram for clarity, are not 'discrete

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elements of experience' (p. 66). In particular emotions are a dimension of wellbeing, self-efficacy, and belonging as well as integral to engagement itself. For instance, anxiety is a negative emotion and a component of wellbeing. Despite these overlaps, depicting these as distinct pathways to engagement has value in that it reminds practitioners and researchers that these can separately influence a student's engagement. In particular, learning is an emotional experience (Askham 2008) and yet emotions remain relatively under researched in higher education. Depicting emotions as a separate pathway encourages a focus on this important dimension of the student experience – both for researchers looking at aspects of education and for practitioners developing support programmes or working with individual students.

Engagement is contextual and dynamic

Lawson and Lawson (2013) describe engagement as 'a dynamic system of social and psychological constructs as well as a synergistic process' (p. 432). The current study offers a deeper understanding of that dynamic process. The research found complex and interwoven relations between antecedents, pathways, engagement, and outcomes that can occur in what Nelson, Readman and Stoodley (2018) describe as a 'constructive cycle of engagement'. These cycles are depicted in the framework by the bi-directional arrows within and surrounding the educational interface. Equally, factors such as stress, reduced interest, or lifeload issues can contribute to negative cycles, or what Case (2008) refers to as alienation of student learning. Positive and negative cycles can be experienced simultaneously – a student may be engaged in one course but not another for instance. Context is critical. Similarly, Green et al.'s (2012) research, based on Skinner, Furrer, Marchand and Kindermann's (2008) self-system model, found that self concept and motivation together predicted emotional and behavioural engagement which predicted outcomes, in a continuous process over time which therefore lead to what they termed 'virtuous' or 'vicious' cycles.

The current study provides useful illustrations of the ways those cycles can function. For example, a sense of student belonging can be triggered by teacher qualities, positively influencing emotional and cognitive engagement, thus contributing to positive student academic outcomes. Those positive outcomes can in turn promote self-efficacy and increase motivation. Student agency is critical here. When a student experiences positive outcomes from their efforts they are motivated to act in ways to further their engagement. This process can create a perpetual cycle of engagement. Wellbeing emerged from this study as a particularly dominant dimension of student experience. Fostering wellbeing is of critical importance within higher education with university students experiencing greater levels of distress than the overall Australian population (Stallman 2010). In a study across eight Australian universities, Baik, Naylor and Arkoudis (2015) identify emotional health as a significant factor in first year student attrition. The data in the present study show students view wellbeing as multidimensional with physical and psychological dimensions. Wellbeing had complex impacts on belonging, emotion, and self-efficacy as well as on engagement and a reciprocal effect on students' motivation for study. Holdsworth et al.'s (2017) qualitative study also found students construct wellbeing as both physical and mental states, jointly influenced by students and institution. They identify resilience, a capability underpinned by wellbeing, as key to students managing academic demands.

The acknowledgement that both context and time influence student engagement has important implications for institutional responses to student engagement. First, it calls into question the value of single snapshot survey measures of engagement which assume that student engagement is both global and stable. A student can only answer survey questions as the average of their experience, thus obscuring what may be high engagement in one situation and low engagement in another. Similarly, students can report their engagement at that one point in time but that may differ earlier in the semester, or even a week later if something

disrupts their life. Second, the dynamic and contextual nature of student engagement means that interventions not only need to respond to influences that can be idiosyncratic to each individual student, they must also adapt to continually changing perceptions, experiences, and circumstances.

Recommendations and conclusion

The findings reported in this paper challenge all stakeholders of higher education to recognise that each student journey is idiosyncratic. The prominence of the four pathways as reported by these students lends credence to existing initiatives in universities, helping to explain their value in triggering student engagement and highlighting student engagement as the responsibility of both students and institutions. As an exercise in developing student agency and returning some of the responsibility of the challenges and success of engagement back to students, institutions need to inform students of the realities of university life to better prepare them to more actively manage their own experience. For example, by developing within students an understanding of the diverse benefits of friendships and relationships with staff, or participating in class to foster overall wellbeing. Institutions can also promote engagement through the four pathways, by making structural changes such as initiating flexible workloads and timetables to foster wellbeing, as well as classroom-based change such as enhancing autonomy within task topics and activities to positively influence emotions, and providing early feedback to build self-efficacy.

This analysis explored the broad patterns of engagement within the framework but there is more that needs to be done. As Case (2013) argues, a student's structural context constrains and enables their agency. And while the complexity of that structure means each student's experience is unique, research on subgroups has real value. For instance, we know that first in family students and students from lower socioeconomic backgrounds can feel

alienated in the university context (Mann 2001). The framework can potentially shed light on the lived experience of that alienation as suggested by Kahu and Nelson (2018). A narrower study following a group of such students and exploring their self-efficacy, belonging, wellbeing, and emotions would be useful.

Together these findings lend validity to the framework but also highlight that while it is a useful tool for understanding the complexity of the student experience, it should not be seen as a fixed model that suggests factors always have the same influence or that any element of the student experience stands alone. The critical realist perspective highlights the influence of both immediate and wider contexts and of the student's actions, past experiences, and current capacities. The findings have confirmed that the framework is also useful to understanding the disengagement experiences that some students encounter. The framework has been shown to be a useful lens which can enable a more nuanced understanding of what is happening for a particular student and lead to useful suggestions on how they can be better supported. This study also highlights the necessity, when working with individual students, of exploring not just the immediate issue they may be grappling with, but the wider context and the range of other factors, both inside and outside the university, which may be influencing their ability to successfully engage with their study. Importantly, this study has revealed previously unknown evidence about the idiosyncratic student experiences that occur in the educational interface, at the intersections of student and institutional influences, proposed earlier in the framework of student engagement.

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