Student engagement in academic activities: a social support perspective

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Abstract Student engagement in academic activities is a critical factor contributing to the overall success of students studying in higher education institutions. Yet the factors influencing student engagement in academic activities are still largely unknown. This study begins to address this knowledge gap by investigating the influence of student connectedness (relationships with peers and teachers), motivation to study (sense of purpose) and perception of workload upon student engagement in academic activities. During 2015, a total of 209 students responded to a survey distributed to first-year undergraduate students enrolled in a university business school in Queensland, Australia. Structural equation modelling was used to investigate the proposed relationships. Results suggest that student-student (peer) relationships, teacher-student relationships, and students' sense of purpose for studying a higher education degree, were central to student engagement in academic activities. In addition, teacher-student relationships, and a strong sense of purpose were central to perceptions of student workloads. Finally, sense of purpose was found to moderate the relationship between both teacher-student and student-student relationships and also, perceptions of workload and student engagement. The findings from this study support the importance of developing effective teacher-student relationships, facilitating positive student-student relationships and communicating a clear sense of purpose to students, so as to improve their engagement in academic activities and optimise perceptions of workloads.

Keywords Student engagement · Sense of purpose · Student connectedness · Higher education · Student workload

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Engaging students in academic activities is critical for the overall success of their student experience (Fredricks et al. 2004; Krause and Coates 2008). The underlying notion of student engagement is centred on the extent to which students are engaging in academic activities that have been linked to high-quality student outcomes (Krause and Coates 2008). This includes engaging students in all activities of student academic life including: class attendance, assignment completion, interaction with peers and instructors, and enrolment and participation in extra-curricular activities (Schoffstall et al. 2013).

Understanding the factors that influence student engagement remains important, albeit previous work by Kahu (2013) suggested that psychosocial influences on student engagement were predominately linear. In contrast, an earlier qualitative study of university students by Kember (2004) found more complex pathways and reasons existed. For example, the relationship between perceived workloads and actual work completed was weakly linked. Instead, students' perceptions of workload were more linked to overall student engagement than to the actual amount of hours and work completed (Kember 2004). Thus, the question remains as to why students working through the same curriculum/syllabus have different perceptions of workload (Ruiz-Gallardo et al. 2011).

One explanation may be the student's purpose for attending university (Lizzio and Wilson 2010). That is, the motivations to study and engage in university activities. In this study, we adhere to previous research and conceptualise sense of purpose as the reason students attribute to being enrolled in higher education studies (Wilson 2009). However, only anecdotal evidence exists that solidifies the relationship between sense of purpose and student engagement in academic activities. Therefore, further studies are needed, and the purpose of our study is to explore possible antecedents of student engagement and motivation to undertake academic activities. In this paper, we propose that the differences in perceptions of workload and their impact upon student engagement in academic activities may be caused by first-year students' sense of purpose in relation to their university studies. Further, Bryson and Hand (2007) concluded that students are more likely to be engaged if they are supported by the teaching team they interact with as part of the learning process. Therefore, we also explore the role of student relationships with teaching staff, in students' engagement in academic activities.

In our study, student engagement in academic activities refers to the ability of a student to manage their time; prepare for, and participate in, classroom activities; interact with teaching staff and other students; and complete academic activities (Krause and Coates 2008). This description is in line with the definition of learner engagement used by the Australian National University Experience Survey (University Experience Survey 2015). Using that definition, the theoretical lens of social support theory is applied to explore how social support, in the form of student connectedness (for example., relationships with teachers and other students), influences students' sense of purpose, perceptions of workload and engagement in academic activities.

To the best knowledge of the authors, previous research has not explored the role of sense of purpose in moderating the relationship between student connectedness and perceptions of workload at university, particularly when using a social support lens. This moderation is important to investigate because previous research (James et al. 2010) suggests the role of student connectedness in strengthening sense of purpose for attending university, and how this then impacts upon student perceptions of workload, is under-researched. One intention of our study is to assist higher educational professionals and organisations to enhance the engagement of students in academic activities. Further, we expect to add to both theoretical and practical

understandings, by investigating the following research questions for first-year business students:

1) What impact do student-student relationships, teacher-student relationships, and sense of purpose have upon students' perceptions of workload and engagement in academic activities?

2) What role does sense of purpose have in moderating the impact of student-student relationships, and teacher-student relationships upon students' perceptions of workload and engagement in academic activities?

Theoretical framework

Social support theorists argue that the provision of psychological and non-psychological support in the context of an action may improve a person's ability and desire to engage in a particular behaviour (House 1971). Psychological support refers to the emotional and appraisal support (cognition, knowledge, information) provided (Cohen and McKay 1984; Haley et al. 1987), whereas non-psychological support refers to instrumental and material support (House 1971; Semmer et al. 2008).

In the context of higher education, psychological support (that is, emotional support and appraisal support) often receives more attention. Perceived emotional support has been found to provide a buffering effect against the stressful experience of being alone in a new environment for first-year university undergraduate students (Wilcox et al. 2005). However, as a student progresses through their first-year, emotional support from friends begins to have more of an impact upon student outcomes. This is potentially because emotional support from friends provides a sense of belonging and can also help students face problems (Wilcox et al. 2005). The important role of emotional support was also found by Whiteman et al. (2013), who conducted a study on the development and implications of peer emotional support for student service members/veterans and civilian college students. In that study, they found emotional support from peers to be protective and generally related to positive mental health and academic adjustment for all undergraduate students (Whiteman et al. 2013).

In addition to emotional support, appraisal support is also an important element of psychological support. Appraisal support, also called advice, informational support or cognitive guidance, helps individuals define, understand and cope with problematic events by providing evaluation and feedback (Cohen and Wills 1985). Previous studies have found that appraisal support is the most common and frequently-occurring social support found in university students (Wilcox et al. 2005). Emotional and information support derived from parents were also found to be the most frequently-reported social support types, and information support was reported more from teachers (Malecki and Demaray 2003). That is, psychological social support has been found to improve students' social skills, academic competences and school adjustment.

In addition to psychological support, non-psychological support is also important, although material support and instrumental support (tangible help that others have provided) have received little attention in the education context (Wilcox et al. 2005). Of the studies that have been conducted, instrumental support has been found to have a positive relationship with student-student relationships (Malecki and Demaray 2003). In addition, instrumental support assists students problem solve by providing tangible help or information when needed (Cohen

and Wills 1985; Semmer et al. 2008). Earlier research by Wilcox et al. (2005) also argued that instrumental support that comes from peers or other students gave students confidence in terms of their academic work. However, more recent research is needed to examine the influence that social support has on student outcomes. We examine this influence by investigating the relationships between sense of purpose, student-student relationships, teacher-student relationships, student engagement, and students' perceptions of their workload.

Literature review

Student engagement in academic activities

There are many definitions of student engagement that now focus on what students and institutions can do to foster engagement in academic activities. For example, Kuh et al. (2008, p. 542) asserted, 'student engagement represents both the time and energy students invest in educationally purposeful activities and the effort institutions devote to using effective educational practices'. Earlier studies on student engagement focussed on what students did to enhance their own learning, including the time, effort, and commitment to their studies. For example, Krause et al. (2005) argued that student engagement was decreasing because Australian full-time university students were spending less time on-campus and in-class, between 1994 (17.6 h) and 2004 (15.4 h). However, measures such as time spent on activities are not ideal for capturing student engagement in academic activities. Instead, the parameters of student engagement have become more complex with other research focussing on belongingness, motivation, and community (Coates 2005). Such research has established significant relationships between engagement in academic activities and high academic grades, persistence to continue studying on a global scale, and career preparation (Kuh et al. 2008). However, the rising costs of living and of university degrees in Australia increases pressure and stress on students to undertake paid work to support themselves while studying, which increases their overall workloads and detracts from their capacity to fully engage in academic activities (Jogaratnam and Buchanan 2004).

Research exploring student engagement in academic activities has evolved to include four different perspectives (Kahu 2013), and has acknowledged the student engagement continuum, from disengaged to engaged (Bryson and Hand 2007). The first perspective focuses on student engagement as a behavioural outcome, examining factors influencing student engagement (as a behavioural outcome). For example, Kuh (2009) found student engagement was a function of an individual's time and effort devoted to study. The second perspective acknowledges the behaviour outcome, but focuses more on the cognitive and affective elements that individuals experience in being engaged (Fredricks et al. 2004). The third perspective considers the socio-political context influencing student engagement, such as the institutional culture and wider contextual issues, for instance the teaching team. For example, Bryson and Hand (2007) found students were more likely to be engaged if they were supported by a teaching team. The fourth perspective examines student engagement as a process, with an outcome influenced by student efforts, motivations and expectations (Kahu 2013).

Our study adopts the third and fourth perspectives and examines, using a social support lens, the socio-political context (student-student relationships and teacher-student relationships) and factors associated with the process involved in entering into academic activities (perceptions of workload and sense of purpose), and their roles in fostering student engagement in academic

activities. These factors are particularly important to investigate as student engagement in academic activities may involve their perceptions of support, purpose and workload. While a plethora of studies has empirically examined first-year student engagement (Bridgstock et al. 2012; Krause and Coates 2008; Kuh et al. 2008; LaNasa et al. 2007; Mehdinezhad 2011), a review of the extant literature revealed a lack of research examining the role of first-year student connectedness (relationships with teaching staff and other students) and perceptions of workload in fostering student engagement. This lack of research is interesting because a conceptual framework developed by Kahu (2013) explicitly outlines the links between psychosocial influences such as connectedness, faculty support, workload, and student engagement. Further, Mann (2001) argued that student engagement may be enhanced by fostering closer relationships between teaching staff (faculty) and students, an argument echoed by Kember's (2004) qualitative study. Therefore, while working within the conceptual framework of engagement developed by Kahu, we add to the structural model developed by Kember and Leung (2006), by examining the impact of teacher-student and student-student relationships upon first-year students' perceptions of workload and engagement in academic activities.

Perceived workload

Excessive content in higher education courses may result in students feeling overloaded (Feldon 2007), which may reduce their overall education experience, engagement, and retention. However, syllabi designed to balance the breadth and depth of the curriculum are important, to preserve suitable workloads and foster generic skill development (Lizzio et al. 2002). Research examining perceptions of workload has found only a weak relationship between the number of hours spent studying and perception of workload (Kember 2004), which suggests that the time taken may only play a small role in explaining how students perceive their workload.

Yet, Chambers (1992) postulated that an appropriate workload was pivotal to student learning and studying, because it supports student engagement in academic activities. Later, Kember (2004) found that the feeling of being overloaded by university workload was a function of many variables, including the learning environment, teacher-teacher relationships, student-teacher relationships and the approach a student takes to achieve the learning outcomes. Thus, perception of workload appears to be a subjective measure of experience for each student. However, it is important to manage perceptions of workload as they can result in heightened stress and decreased student engagement (Ruohoniemi and Lindblom-Ylänne 2009). Previous literature suggests studies have not specifically examined the influence of perceived workload on student engagement in academic activities. This study thus extends that area of literature and proposes the following hypothesis:

> H1: The higher first-year students' perceptions of workload, the lower their engagement in academic activities.

Student-student relationships

Previous studies have identified that student-student relationships are effective in reducing students' negative perceptions of workload and increasing student engagement (Kember 2004; Mottet et al. 2005). For example, in a study of first-year university students, Krause et al. (2005) found that students who interacted with their peers in the learning community

frequently were more engaged and less likely to depart the university environment. Additionally, a qualitative study by Anderson and Carta-Falsa (2002) found building student-student relationships was important in developing better academic outcomes for students.

Furthermore, Ganotice and King (2014) conducted a study of 1694 Filipino secondary school students and found that social support from parents, teachers, and peers resulted in students who were more engaged in academic activities and achieved higher results than students who did not perceive high levels of social support. Thus, the social support reported by students in the form of student-student relationships may result from the improved experience of learning gained through peer relationships (Braxton et al. 2000; Prussia and Weis 2004;). However, in a study of Australian university students, Jackling and Natoli (2011) found no significant relationship between student-student relationships and student engagement. Consequently, further research is required to investigate these relationships, as proposed by the following hypotheses:

> H2: Students who report higher student-student relationships will report lower perceptions of workload.
> H3: Students who report higher student-student relationships will report higher student engagement in academic activities.

Teacher-student relationships

In addition to student-student relationships, research has also acknowledged the important role that teacher-student relationships have on student outcomes, such as engagement in academic activities, perceptions of workload, pro-social behaviours and student learning outcomes (McGrath and Noble 2010). For example, Mottet et al. (2006) found that teachers who balance the course workload with their relational teaching style (availability, communication style) were more likely to have engaged students. In addition, students who perceived their teachers as accessible and having a sense of 'immediacy' (physical and psychological closeness) were more likely to be engaged in their studies and to report perceptions of lower workload (Mehrabian 1966; Mottet et al. 2005). Indeed, studies of tertiary schooling have found that those students who have stronger relationships with their teachers have higher academic outcomes and self-esteem than those who do not (Nyadanu et al. 2015). It is perhaps not surprising then, that research has found that the quality of teaching has a significant impact upon overall engagement of students and perception of workload (Jackling and Natoli 2011). Consequently, this study proposes the following hypotheses:

> H4: The stronger the first-year teacher-student relationships, the lower will be students' perceptions of workload.
> H5: The stronger the first-year teacher-student relationships, the greater will be students' engagement in academic activities.

Sense of purpose

We conceptualise a sense of purpose as students having clear reasons and career goals for attending university, which is also related to student success (Wilson 2009). For

students, understanding the reason they attend university is important to their university studies (for example, maintaining motivation to persistently engage in academic activities) (Wintre and Yaffe 2000). The importance and value that sense of purpose has in student engagement, teacher-student relationships, student-student relationships, and workload, are highlighted by James et al. (2010) and Lizzio and Wilson (2010). In a study of Australian universities, Lizzio and Wilson (2010) found that explicitly stating the reason for studying a particular course and communicating how the course fits into a degree/program, is critical to overall student success and student satisfaction. This may be due to the motivation students have towards a particular career goal and the impact that such a goal has upon student engagement in academic activities (Kember et al. 2010).

However, while direct relationships with sense of purpose have been established in one study, the interactions with sense of purpose have not been investigated. Previous research has only indicated that students with a clear sense of purpose for studying at university tend to persist with their studies (Gerdes and Mallinckrodt 1994) and perceive lower levels of university workload (Pitkethly and Prosser 2001). This study argues that if students have a clear sense of why they are studying at university, than that is likely to influence their intentions and desire to engage with teachers, students, and how they perceive their workload. Utilising the underlying notions of social support theory, we contend that the teaching team can support students by communicating a clear sense of purpose for studying at university, and this vision can also be reinforced by student peers. As such, it is expected that student connectedness will interact with student sense of purpose for studying the impact upon their perceived workload. However, research was not found that examined how sense of purpose may moderate the relationship between student connectedness and perceptions of workload. Even so, there is qualitative research indicating that such a relationship may exist. Notably, Kember (2004) suggested that students are more likely to perceive a lower workload when, among other reasons, supportive teacher-student relationships, student-student relationships, and key concepts and understanding are promoted. We propose that these relationships may be explained by students' perceptions of support and connectedness experienced as they engage in academic activities. Therefore, this study extends the literature by examining the following:

> H6: The stronger the students' sense of purpose, the lower their perceptions of workload.
> H7a: Students' sense of purpose will moderate the association between student-student relationships and student perceptions of workload.
> H7b: Students' sense of purpose will moderate the association between teacher-student relationships and student perceptions of workload.

Thus far, this paper has theorised that student engagement in academic activities can be influenced by the social support (both psychological and non-psychological) provided through teacher-student relationships and student-student relationships, and that these relationships should influence student perceptions of workload and engagement in academic activities. In addition, it is argued that these relationships are moderated by the sense of purpose students have, or their reason for attending university. Our proposed conceptual framework is illustrated in Fig. 1 below.

Theoretical framework   Conceptual model
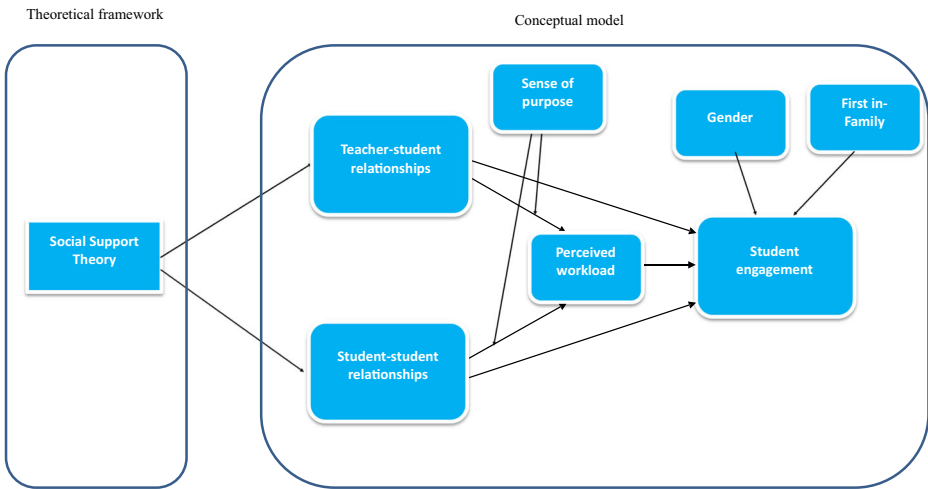
Fig. 1 Conceptual model: the role of sense of purpose in moderating social support relationships and perceived workload, and their impact upon student engagement

Methods

Participants

Invitations were sent to all first-year students from a large business faculty in an Australian university located in Queensland. To be included, participants must have been in their first year of study in their program and be enrolled in a first-year business course. The total sample pool was 712 students. A total of 210 students (29.5% response rate) completed the survey distributed to them electronically via course announcements.

After conducting descriptive analyses and checking statistical assumptions, 13 cases were found to be outliers and were removed from the sample to improve normality. This left a total sample of 197 participants. Of these participants, 119 (60.4%) were female and 79 (39.6%) were male. The majority of participants was less than 21 years old (117 or 59.4%), 71 participants (36%) were aged 21–35, eight participants (4.1%) were 36–50, and one participant (0.5%) was older than 50 years. Of all the participants, 37.1% (73) were the first in their family to attend university.

Demographics

We controlled for two possible factors that could reasonably influence student engagement: gender (Carini et al. 2006) and being first-in-family to attend university (Southgate et al. 2014). These variables were measured using a binary response to the questions: 'What is your gender?' (Male or Female), and 'Are you the first in your immediate family to attend university?" (Yes or No).

Measures

All scales used were previously validated and measured on a six-point Likert-type scale from '1' = strongly disagree to '6' = strongly agree.

Student-student relationships were measured using four items developed by Kember and Leung (2006), which included two sub-scales: relationship with other students and cooperative learning. The scale resulted in acceptable average variance extracted (AVE) (.607) and composite reliability (.901). A sample item included, 'My peers and I have developed a strong sense of working together'.

Sense of Purpose included five items measuring the reasons why students were studying their degree. These items included, 'I want to get excellent grades to benefit my future'. This scale was developed from previous qualitative research that found these as fundamental reasons for studying at university (Robertson and Blackler 2006; Ross et al. 2014).

Teacher-student relationships (7-items) were also measured using scales developed by Kember and Leung (2006), and comprised three sub-scales: teacher-student interaction, feedback to assist learning, and assistance from teaching staff. The scale resulted in acceptable AVE of 0.575 and a composite reliability of 0.890. A sample item was, 'There is a close relationship between teaching staff and students'.

There were also two *control variables*: First-in-family, representing those students who were the first members of their families to attend university, and gender, representing whether students were male or female.

Dependent variables

Perceptions of workload was measured using 5-items from Hart and Staveland's (1988) Task-Load Index. The Task-Load Index was modified by removing one item that referred to work tasks being physically demanding, which is not suited for undergraduate business students. The scale had an AVE of .505 and a composite reliability of .750, and an example item was: 'On average, my university work tasks are mentally demanding'.

Student engagement in academic activities was measured using the academic engagement scale (8-items) developed by Krause and Coates (2008). The scale had an acceptable AVE (.535) and composite reliability (.771). A sample item included, 'I regularly seek advice and help from teaching staff'. This scale was selected because our study explored the engagement students had in academic activities surrounding their studies.

Data analysis and model estimation

Data were analysed using two statistical programs: Statistical Package for Social Sciences (SPSS) v.22 and Analysis of Moment Structures (AMOS) v.22 software. Non response bias was tested using trend analysis (Armstrong and Overton 1977). The trend analysis approach assumes that late responders are similar to non-responders and has been used in the literature commonly to test non-response bias (Harrison 2009). This analysis found no significant differences between the responses received from early and late responders. Consequently, further analyses to test the hypotheses were performed.

A covariance-based latent variable structural equation model was developed, adhering to the two step approach prescribed by Anderson and Gerbing (1988). To test for interactions, a process proposed by Hopwood (2007) and applied by Karimi et al. (2014) was used. Statistical tests of univariate normality revealed skewness and kurtosis for each construct fell below 1.96. In addition, Mardia's (1970, 1974) normalised estimate of multivariate kurtosis was 5.24, which is close to the cut-off value of 5 and therefore was deemed acceptable in this study (Bentler 2005).

Table 1 Results of confirmatory factor analysis - examining goodness-of-fit

	CMIN/DF	CFI	TLI	RMSEA
Hypothesised measurement model	2.51	0.81	0.78	0.09
Modified measurement model	1.89	0.91	0.90	0.07
Model 1: Sense of purpose moderates student-student and teacher-student relationships onto perceived workload	1.73	0.91	0.90	0.06
Model 2: Sense of purpose only moderates teacher-student relationships to perceived workload	1.75	0.92	0.90	0.06
Model 3: Structural model, no moderation	1.78	.092	0.91	0.06
Model 4: Adds common latent factor to respecified measurement model	1.88	0.92	0.90	0.07

*Common variance was 8.41%

To examine reliability and validity, standardised factor loadings were tested and they exceeded 0.7, except for five items, but each of those was greater than 0.5. There is also support for convergent validity with AVEs (Hair et al. 2010) and composite reliabilities (Raykov 1997) exceeding 0.5 and 0.7 respectively (Kline 2011). The square root of the AVE for each construct is greater than any other correlation (see Tables 1 and 2), which provides support for discriminant validity (Hair et al. 2010).

Factor analysis

Prior to the confirmatory factor analysis, a principal component analysis with a varimax rotation was conducted including each of the measures in this study. The Kaiser-Meyer Olkin measure of sampling adequacy was 0.851, and Bartlett's test of sphericity was significant (chi square = 4238.14, $p < .001$, df = 561). The results from the factor analysis revealed that one sense of purpose item did not load onto the respective construct, so it was removed from the analysis.

The hypothesised measurement model provided a poor fit to the data (see Table 3) (CMIN/DF = 2.51, RMSEA = 0.09, CFI = 0.81 and TLI = 0.78). Two items were removed from the Task-Load Index (due to low square-multiple correlations = .103 and .133). Three items were also removed from the engagement scale and two items from the teacher-student relationships scale due to high standardised residual covariances. High modification indices (MI = 39.739, 0.443) indicated a potential error covariance between two student-student relationship items, 'I have frequently discussed ideas from other courses with other students out of class' and 'I have found that discussing course material with other students outside of classes has helped me reach an understanding', and considering these items express similar meanings (Byrne 2010), the error covariance was estimated. The measurement model modifications resulted in a reasonable model fit (CMIN/DF = 1.89, RMSEA = 0.07, CFI = 0.91 and TLI = 0.90).

Four structural models were tested. Model 1 included only moderation between student-student relationships and perceived workload, Model 2 included only moderation between teacher-student relationships and perceived workload, and Model 3 has no moderation. From the confirmatory factor analysis, it was identified that Model 1 has a similar model-fit compared to Models 2 and 3 (see Table 1), and a chi square difference test depicted the models are also statistically distinct. Model 4 added a common latent factor to the modified measurement model. Model 4 adequately fits the data and a common variance of 8.41% was identified, and as such common method variance was low and not a concern in this study.

Table 2 Correlations matrix, mean, and standard deviations

Variables	Mean#	SD	1	2	3	4	5	6	7
1. Gender	-	-	1						
2. First-in-family	-	-	−.00	1					
3. Student engagement	4.55	.90	−.02	.01	(.731)				
4. Perceived workload	3.78	.94	−.03	−.01	−.29**	(.711)			
5. Sense of purpose	4.71	.93	−.03	−.01	.34**	−.18*	(.753)		
6. Student-student relationships	4.12	1.10	−.03	.04	.40**	.00	.15*	(.779)	
7. Teacher-student relationships	4.50	.8	.06	−.05	−.56**	−.26**	.26**	.33**	(.758)

Scale ranges from 1 = strongly disagree, to 6 = strongly agree.

Note: SD = Standard deviation; Diagonal elements in the parentheses are the square roots of the average variance extracted (AVE).

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Results

Test of study hypotheses

Descriptive statistics and correlations for each construct are shown in Table 2, and the standardised parameter estimates are shown in Table 2. Structural Equation Modelling (SEM) analyses depict that neither of the control variables was significantly related to student engagement in academic activities. As such, the control variables were not further considered. Most hypotheses were supported, except hypotheses 2 and 7a (See Fig. 2). In particular, teacher-student relationships ($\beta = -.331$, $p < .001$) and sense of purpose ($\beta = -.221$, $p < .05$) had significant negative effects on student perceived workload. Also, teacher-student relationships ($\beta = .484$, $p < .001$), student-student relationships ($\beta = .321$, $p < .001$), and perceived workload ($\beta = -.221$, $p < .05$) each had a significant effect on student engagement in academic activities. Hypothesis 7b was supported because sense of purpose moderated the relationship of teacher-student relationships ($\beta = -.240$, $p < .01$) onto perceived workload.

Table 3 SEM results for testing hypotheses

Variables	Perceived workload		Student engagement	
	β	s.e.	β	s.e.
Control				
Gender			−.05	.10
First-in-family			.04	.10
Predictor				
Perceived workload			−.24**	.10
Student-student relationships	.13	.07	.32***	.08
Teacher-student r'ships	−.33***	.09	.48***	.09
Sense of purpose	−.22*	.15		
Sense of purpose X student-student relationships	.15	.05		
Sense of purpose X teacher-student relationships	−.24**	.05		
R²	**19.5%**		**57.8%**	

Note: s.e. = standard error

***. Correlation is significant at the 0.001 level; **. Correlation is significant at the 0.01 level; *. Correlation is significant at the 0.05 level
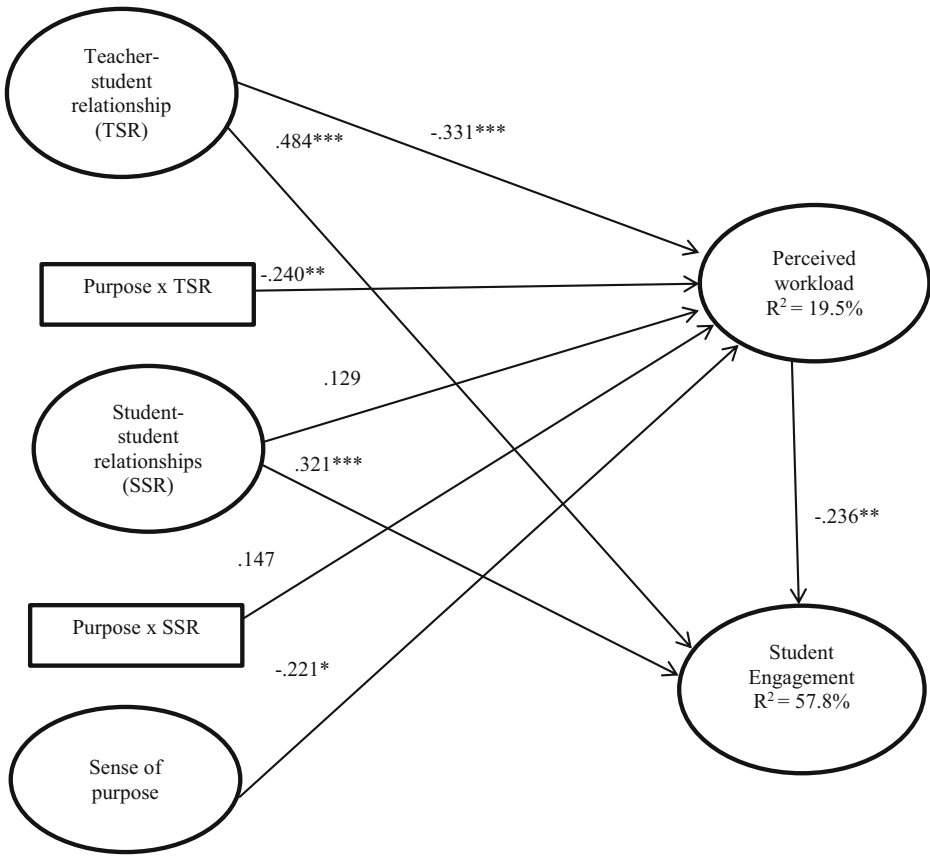
Notes:

*p < .05, **p <.01, ***p < .001.

SSR = student-teacher relationships; TSR = teacher-student relationships; Purpose = sense of purpose.

Fig. 2 Standardised structural model results. Notes: *p < .05, **p < .01, ***p < .001. SSR = student-teacher relationships; TSR = teacher-student relationships; Purpose = sense of purpose

The nature of the moderation is graphically represented in Fig. 3, which depicts that sense of purpose reduces the effect of teacher-student relationships on perceived workload. Also while perceived workload reduces more from low to high teacher-student relationships, when sense of purpose is high, perceived workload remains greater than when sense of purpose is low (see Fig. 3). Such a finding provides some support that if sense of purpose is low, the negative impact of teacher-student relationships upon perceived workload is reduced.

Discussion

This study investigated the role that student-student relationships, teacher-student relationships, and sense of purpose have on first-year students' perceptions of workload and
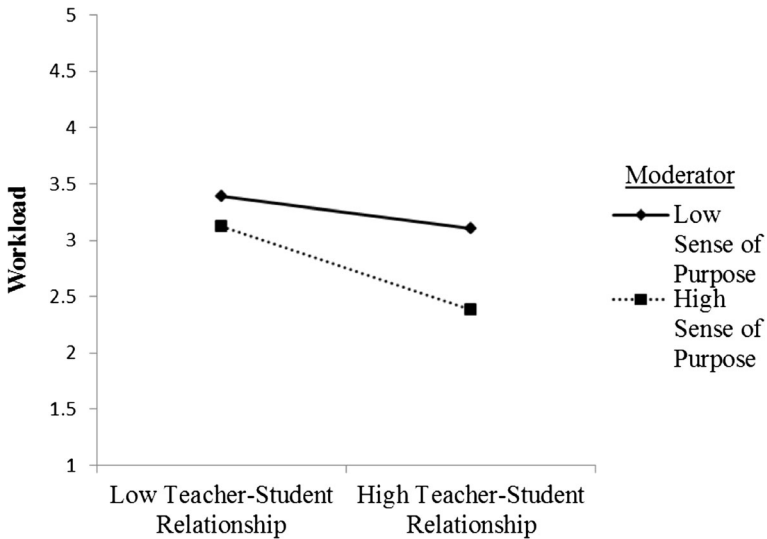
Fig. 3 The moderating role of student sense of purpose between teacher-student relationships and student workload

engagement in academic activities. We found that teacher-student relationships had a significant negative effect on perceptions of workload, which were reported as higher when teacher-student relationships were poor. This finding is consistent with previous research by Kember (2004); Malecki and Demaray (2003) and, McGrath and Noble (2010). One possible reason for this could be that students with good teacher relationships ask more questions, obtain more feedback, and gain clarification on reducing the workload and providing study structure. Simultaneously, teachers may inadvertently play a role in reducing anxieties about student workload by having good working relationships with their students. The reason that our finding is important is because it means better teacher-student relationships lead to lower perceptions of workload, which then leads to higher student engagement in academic activities. However, further investigations of the emotional and relational impact of teacher-student relationships are required to establish which specific elements of the teacher-student relationship assist with improving perceptions of workload.

In addition to influencing perceptions of workload, teacher-student relationships also had a positive impact upon student engagement. Specifically, our study found that when teacher-student relationships were stronger, student engagement in academic activities was reported to be higher than when these relationships were weaker. This finding is in line with previous research by Nyadanu et al. (2015), and Jackling and Natoli (2011), who found teacher-student relationships to be significantly related to student engagement. Possible reasons for this finding include that those teachers with strong teacher-student relationships are more highly invested in their students, and employ strategies that engage students in deeper learning approaches, resulting in improved student engagement in academic activities. However, further investigation with diverse types of students is required, to explore the outcomes of teacher-student relationships and approaches to cultivating strong teacher-student relationships.

No significant relationship was found between student-student relationships and perceptions of workload. That is, student-student relationships did not impact upon students' perceptions of workload. This was surprising given that previous studies by Kember (2004)

and Mottet et al. (2005) concluded that these relationships were effective in reducing students' negative perceptions of workload. One possible reason for this difference could be the sample size or timing of the study. To explain, this study was conducted at the end of the second semester (courses are offered during two semesters per year, one in the first half and the other in the second half of each calendar year), when students may be tired from their year of studying at university level. Also, the survey was only offered electronically, and as a result, some students may not have responded to the survey as they were busy preparing for exams, or would have preferred 'hard copy' surveys. Alternatively, our result may identify a shift in the value that student-student relationships have on an individual's perceptions of workloads due to technological influences, changes to workload expectations, and/or the reduction in time that university students spend on campus (Krause et al. 2005). Consequently, further research is necessary to investigate the role that student-students relationships may have in student perceptions of their university studies.

As expected though, in our study student-student relationships were significant in improving student engagement. This finding is in line with previous studies by Kember (2004); McGrath and Noble (2010); and Anderson and Carta-Falsa (2002). Consequently, our study provides further support for creating a learning community that is developed between students to further foster student engagement in academic activities.

Having a sense of purpose was found to impact students' perceptions of workload and engagement in academic activities. This finding is in line with previous research by Wilson (2009), who found that understanding the reason/goal for attending university was important for fostering positive relationships with other students and teachers, and effectively managing perceived workloads. Furthermore, our finding supports the need to communicate and help students understand the link between their chosen course/program objectives and their overall career goals, as suggested by Lizzio and Wilson (2010) and James et al. (2010). However, understanding how these messages are best communicated remains under-researched. Consequently, further research is required in this area.

While this was the first study of its kind to combine these particular variables and look at the influence they have upon student perceptions of engagement and workload, it is not without its limitations. First, this study is limited by the sample obtained: cross-sectional data was obtained from only one university in one state in Australia. Care therefore should be taken when generalising these results to other settings and organisations. Second, the results apply to university business students and the results may differ in other disciplines. Further research is needed to confirm, or otherwise, our findings in different contexts.

Conclusion

Within the context of rising costs of tertiary education, which in most western countries is heavily funded by or at least subsidised by the public purse, our study has examined ways to improve potential outcomes by examining the role that students and teachers can play in student success. One key implication of our findings is based on the notion that teacher-student relationships influence students' perceptions of workload and student engagement in academic activities. Notably, our results suggest that when students have a strong sense of purpose for why they are studying, then teacher-student relationships can help reduce students' perceptions of workload even more. Importantly, we know that the consequence of that reduction is the more likely continuation of the student at the university and more likely success in completing

the degree program. Further, we know from previous research that enhancing teacher-student relationships is possible. In conclusion, the findings from our study support the need for developing effective teacher-student relationships, encouraging positive student-student relationships and communicating a clear sense of purpose to students, in order to improve student engagement and minimise their perceptions of high workloads. This combination will positively influence student engagement in academic activities.

References

Anderson, L. E., & Carta-Falsa, J. (2002). Factors that make faculty and student relationships effective. *College Teaching, 50*(4), 134–138.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411–423.

Armstrong, J., & Overton, T. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing Research, 14*, 396–402.

Bentler, P. M. (2005). *EQS 6 structural equations program manual*. Encino: Multivariate Software.

Braxton, J. M., Milem, J. F., & Sullivan, A. S. (2000). The influence of active learning on the college student departure process: Toward a revision of Tinto's theory. *Journal of Higher Education, 71*(5), 569–590.

Bridgstock, R. S., Thomas, A., Lyons, K., Carr, L., & Zelenko, O. (2012). *Putting the cart before the horse? Driving student engagement through first year career identity development in a large multidisciplinary creative industries cohort*. Paper presented at the First Year in Higher Education Conference, Sofitel Brisbane Central, Brisbane, QLD.

Bryson, C., & Hand, L. (2007). The role of engagement in inspiring teaching and learning. *Innovations in Education and Teaching International, 44*(4), 349–362.

Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd ed.). New York: Routledge.

Carini, R. M., Kuh, G. D., & Klein, S. P. (2006). Student engagement and student learning: Testing the linkages. *Research in Higher Education, 47*(1), 1–32.

Chambers, E. (1992). Work-load and the quality of student learning. *Studies in Higher Education, 17*(2), 141–153.

Coates, H. (2005). The value of student engagement for higher education quality assurance. *Quality in Higher Education, 11*(1), 25–36.

Cohen, S., & McKay, G. (1984). Social support, stress and the buffering hypothesis: A theoretical analysis. *Handbook of Psychology and Health, 4*, 253–267.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98*(2), 310–357.

Feldon, D. F. (2007). Cognitive load and classroom teaching: The double-edged sword of automaticity. *Educational Psychologist, 42*(3), 123–137.

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*(1), 59–109.

Ganotice Jr., F. A., & King, R. B. (2014). Social influences on students' academic engagement and science achievement. *Psychological Studies, 59*(1), 30–35.

Gerdes, H., & Mallinckrodt, B. (1994). Emotional, social, and academic adjustment of college students: A longitudinal study of retention. *Journal of Counseling and Development, 72*(3), 281–288.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis: A global perspective*. Upper Saddle River: Pearson Education.

Haley, W. E., Levine, E. G., Brown, S. L., & Bartolucci, A. A. (1987). Stress, appraisal, coping, and social support as predictors of adaptational outcome among dementia caregivers. *Psychology and Aging, 2*(4), 323–330.

Harrison, J. L. (2009). Untangling the value of information scope: An investigation in retail pharmacies. *Journal of Management & Organization, 15*(4), 470–485.

Hart, S. G., & Staveland, L. E. (1988). Development of NASA-TLX (Task load Index): Results of empirical and theoretical research. *Advances in Psychology, 52*, 139–183.

Hopwood, C. J. (2007). Moderation and mediation in structural equation modeling: Applications for early intervention research. *Journal of Early Intervention, 29*(3), 262–272.

House, R. J. (1971). A path goal theory of leader effectiveness. *Administrative Science Quarterly, 16*(3), 321–339.

Jackling, B., & Natoli, R. (2011). Student engagement and departure intention: An Australian university perspective. *Journal of Further and Higher Education, 35*(4), 561–579.

James, R., Krause, K.-L., & Jennings, C. (2010). *The first year experience in Australian universities: Findings from 1994 to 2009*. Melbourne: Centre for Studies in Higher Education.

Jogaratnam, G., & Buchanan, P. (2004). Balancing the demands of school and work: Stress and employed hospitality students. *International Journal of Contemporary Hospitality Management, 16*(4), 237–245.

Kahu, E. R. (2013). Framing student engagement in higher education. *Studies in Higher Education, 38*(5), 758–773.

Karimi, L., Leggat, S. G., Donohue, L., Farrell, G., & Couper, G. E. (2014). Emotional rescue: The role of emotional intelligence and emotional labour on well-being and job-stress among community nurses. *Journal of Advanced Nursing, 70*(1), 176–186.

Kember, D. (2004). Interpreting student workload and the factors which shape students' perceptions of their workload. *Studies in Higher Education, 29*(2), 165–184.

Kember, D., & Leung, D. Y. (2006). Characterising a teaching and learning environment conducive to making demands on students while not making their workload excessive. *Studies in Higher Education, 31*(2), 185–198.

Kember, D., Ho, A., & Hong, C. (2010). Characterising a teaching and learning environment capable of motivating student learning. *Learning Environments Research, 13*(1), 43–57.

Kline, R. B. (2011). *Principles and practice of structural equation modeling*. New York: The Guilford Press.

Krause, K. L., & Coates, H. (2008). Students' engagement in first-year university. *Assessment & Evaluation in Higher Education, 33*(5), 493–505.

Krause, K. L., Hartley, R., James, R., & McInnis, C. (2005). *The first year experience in Australian universities: Findings from a decade of national studies*. Melbourne: Centre for the Study of Higher Education, University of Melbourne.

Kuh, G. D., Cruce, T. M., Shoup, R., Kinzie, J., & Gonyea, R. M. (2008). Unmasking the effects of student engagement on first-year college grades and persistence. *The Journal of Higher Education, 79*(5), 540–563.

Kuh, G. D. (2009). What student affairs professionals need to know about student engagement. *Journal of College Student Development*, 50(6), 683–706.

LaNasa, S. M., Olson, E., & Alleman, N. (2007). The impact of on-campus student growth on first-year student engagement and success. *Research in Higher Education, 48*(8), 941–966.

Lizzio, A., & Wilson, K. (2010). *Strengthening commencing students' sense of purpose: Integrating theory and practice*. Paper presented ate the 13th Pacific Rim First Year in Higher Education Conference, Adelaide: Australia.

Lizzio, A., Wilson, K., & Simons, R. (2002). University students' perceptions of the learning environment and academic outcomes: Implications for theory and practice. *Studies in Higher Education, 27*(1), 27–52.

Malecki, C. K., & Demaray, M. K. (2003). What type of support do they need? Investigating student adjustment as related to emotional, informational, appraisal, and instrumental support. *School Psychology Quarterly, 18*(3), 231–252.

Mann, S. J. (2001). Alternative perspectives on the student experience: Alienation and engagement. *Studies in Higher Education, 26*(1), 7–19.

Mardia, K. V. (1970). Measures of multivariate skewness and kurtosis with applications. *Biometrika, 57*, 519–530.

Mardia, K. V. (1974). Applications of some measures of multivaraite skewness and kurtosis in testing normality and robustness studies. *Sankhya, B36*, 115–128.

McGrath, H., & Noble, T. (2010). Supporting positive pupil relationships: Research to practice. *Educational and Child Psychology, 27*(1), 82–94.

Mehdinezhad, V. (2011). First year students' engagement at the university. *International Online Journal of Educational Sciences, 3*(1), 47–66.

Mehrabian, A. (1966). Immediacy: An indicator of attitudes in linguistic communication. *Journal of Personality, 34*(1), 26–34.

Mottet, T. P., Parker-Raley, J., Cunningham, C., & Beebe, S. A. (2005). The relationships between teacher nonverbal immediacy and student course workload and teacher availability expectations. *Communication Research Reports, 22*(4), 275–282.

Mottet, T. P., Richmond, V. P., & McCroskey, J. C. (Eds.). (2006). *Handbook of instructional communication: Rhetorical and relational perspectives*. Boston: Allyn & Bacon.

Nyadanu, S. D., Garglo, M. Y., Adampah, T., & Garglo, R. L. (2015). The impact of lecturer-student relationship on self-esteem and academic performance at higher education. *Journal of Social Science Studies, 2*(1), 264–281.

Pitkethly, A., & Prosser, M. (2001). The first year experience project: A model for university-wide change. *Higher Education Research and Development, 20*(2), 185–198.

Prussia, G. E., & Weis, W. L. (2004). Experiential learning effects on retention: Results from a required MBA course. *Journal of College Student Retention: Research, Theory & Practice, 5*(4), 397–407.

Raykov, T. (1997). Estimation of composite reliability for congeneric measures. *Applied Psychological Measurement, 21*(2), 173–184.

Robertson, J., & Blackler, G. (2006). Students' experiences of learning in a research environment. *Higher Education Research & Development, 25*(3), 215–229.

Ross, J., Head, K., King, L., Perry, P. M., & Smith, S. (2014). The personal development tutor role: An exploration of student and lecturer experiences and perceptions of that relationship. *Nurse Education Today, 34*(9), 1207–1213.

Ruiz-Gallardo, J.-R., Castaño, S., Gómez-Alday, J. J., & Valdés, A. (2011). Assessing student workload in problem based learning: Relationships among teaching method, student workload and achievement. A case study in natural Sciences. *Teaching and Teacher Education, 27*(3), 619–627.

Ruohoniemi, M., & Lindblom-Ylänne, S. (2009). Students' experiences concerning course workload and factors enhancing and impeding their learning–a useful resource for quality enhancement in teaching and curriculum planning. *International Journal for Academic Development, 14*(1), 69–81.

Schoffstall, D. G., Arendt, S. W., & Brown, E. A. (2013). Academic engagement of hospitality students. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 13, 141–153.

Semmer, N. K., Elfering, A., Jacobshagen, N., Perrot, T., Beehr, T. A., & Boos, N. (2008). The emotional meaning of instrumental social support. *International Journal of Stress Management, 15*(3), 235–251.

Southgate, E., Douglas, H., Scevak, J., Macqueen, S., Rubin, M., & Lindell, C. (2014). The academic outcomes of first-in-family in an Australian university: An exploratory study. *International Studies in Widening Participation, 1*(2), 31–45.

University Experience Survey (2015). 2014 University Experience Survey National Report: March 2015. Retrieved 6/6/16 at: https://www.qilt.edu.au/docs/default-source/ues-national-report/2014-university-experience-survey-national-report/ues14_report_final_access2a.pdf?sfvrsn=4

Whiteman, S. D., Barry, A. E., Mroczek, D. K., & MacDermid Wadsworth, S. (2013). The development and implications of peer emotional support for student service members/veterans and civilian college students. *Journal of Counseling Psychology, 60*(2), 265–278.

Wilcox, P., Winn, S., & Fyvie-Gauld, M. (2005). 'it was nothing to do with the university, it was just the people': The role of social support in the first-year experience of higher education. *Studies in Higher Education, 30*(6), 707–722.

Wilson, K. (2009). *Success in first year: the impact of institutional, programmatic and personal interventions on an effective and sustainable first-year student experience*. Paper presented at the 12th Pacific Rim First Year in Higher Education Conference - Preparing for tomorrow today: The First Year Experience as foundation., Queensland, Australia Available at www.fyhe.com.au/past_papers/papers09/content/html/keynote.html

Wintre, M. G., & Yaffe, M. (2000). First-year students' adjustment to university life as a function of relationships with parents. *Journal of Adolescent Research, 15*(1), 9–37.