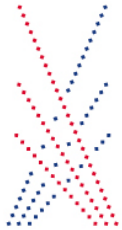

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The effect of social support and learning style differences between mature age and younger students on overall engagement with university

SUMMARY

Academic engagement is positively correlated with success rates among university students, but many attempts to increase engagement levels use standardised approaches and techniques that may not be effective for all students. In particular, this study examines the differences between first year students who are still in the process of transitioning from adolescents into adults with first-year students who are beginning their university experience as mature age students. We examine several precursors to academic engagement, such as learning styles, transition engagement, and support relationships, finding partial support for most of the hypothesised differences. Findings are then considered in terms of implications for higher education institutions and management education researchers.

Track: 12 – Knowledge and Learning

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Higher education institutions face numerous challenges in ensuring that students effectively meet the learning outcomes of the courses of study they offer (Bruno & Dell'Aversana, 2018). One area of particular concern is the ability to foster engagement, particularly for first year students (Kahu & Nelson, 2018). This is a complex challenge for universities, as a wide range of variables can influence engagement (van der Zanden, Denessen, Cillessen, & Meijer, 2018). Some of these Factors include supportive relationships between staff and students, and amongst peers, as well as engaging in different levels of learning styles (Burton, Taylor, Dowling & Lawrence, 2009). Moreover, recent evidence suggests that the factors influencing engagement differ between younger students and mature age students, however this evidence is still emerging (Timms, Fishman, Godineau, Granger & Sibanda, 2018). This study, therefore, adds to this emerging body of literature and explores the differences in the precursors to student engagement between mature age and school leaver students. Specifically, the following research question guided the development of this study:

RQ1. How does engagement, and the precursors to engagement (support relationships and learning styles), differ between mature age university students and school leavers?

To answer this question effectively, a theoretical framework of cognitive development theory and social support theory formed the foundation for the study.

THEORETICAL FRAMEWORK

Cognitive Development

Much of the research in the field of cognitive development focuses on the changes that occur as people transition from adolescents into adults. There is no universal agreement regarding the specific age of adolescents, but the term 'adolescence' typically refers to people aged anywhere between 12 and 18 (Jaworska & MacQueen, 2015). As a high percentage of first year university students, particularly in Queensland where students have started school at a younger age, will fall into this adolescent age bracket, it is important to consider whether there are elements of higher education that could be more effectively delivered in light of the differences between these younger students and their older counterparts. According to Piaget's theory of cognitive development, adolescents are still developing the ability to engage in formal operational thinking, which includes the ability to think abstractly about concepts and come up with their own solutions to problems (Ojose, 2008).

Even though many higher order thinking skills are developed by late adolescence, parts of the prefrontal cortex are still developing well into adulthood (Luna & Sweeney, 2004: Paus, 2005). The slower development of the prefrontal cortex results in significant effects on adolescents between the ages of 16 and 20 in regard to their ability to regulate emotions, consider others, engage in social interactions, and demonstrate moral reasoning. Additionally, the later development of this part of the brain results in young adults engaging in more risky behaviour (Crone,2014; Steinberg, 2005; Vetter, Weigelt, Dohnel, Smolka & Kliegel, 2014).

Rodriguez (2009) studied 131 undergraduate business students to see how their self-concept influenced their selection of learning approaches and overall academic achievement. The findings suggested that a positive self-concept typically resulted in better learning strategies, which in turn resulted in better academic performance. Further to this, another study has suggested that the search for self-identity and building of self-concept can use a lot of an adolescent's mental capacity, and can lead to anxiety and negative self-esteem, which

in turn results in poorer academic achievement (Ntemsia, Triadafyllidou, Papageorgiou & Roussou, 2017). It seems evident from these findings that the more support young adults can receive when building their self-concept, the more likely they will be able to engage effectively with their studies.

In addition to their search for self-identity, when adolescents arrive at university, they are often expected to become self-motivated, autonomous learners. This typically differs greatly from their experience in secondary school, which provides a much more structured learning experience (Petra, Jaidin, Perera & Linn, 2016). Autonomous learners have to set up their own study plans and habits, and after only a small amount of guidance, are usually left to their own devices to engage with the learning and complete assessment tasks (Oxford, 2015). However, research suggests that young adults struggle to plan or structure their study habits (Cleary & Zimmerman, 2004), which may be due to the proclivity for risky behaviour (Crone, 2014). In addition, due to their developing prefrontal cortex, they are often influenced by peers to neglect academic work and engage in activities that involve more immediate rewards (Steinberg, 2005).

By comparison, older adult learners are generally much more self-motivated, self-regulated and self-directed, who proactively employ specific strategies to achieve their self-set goals (Cleary & Zimmerman, 2004; Zimmerman, 1989). These strategies include goal setting, self-observation, time management, maintaining high self-efficacy, and having the desire to learn about a particular topic (Cleary & Zimmerman, 2004). Due to the differences in physiology, younger adult learners often struggle to engage in these kinds of strategies to the same degree of effectiveness.

Amongst other crucial assumptions of adult learners, Knowles (1978; 1984) suggested that older adults are able to utilise their experiences in life as a rich resource for learning, and relating to concepts and ideas more effectively. He also theorised that adult learners could be the best resources for each other, and encouraged adult students to engage in group discussions, which results in the sharing of diversified, expertise knowledge within the group. Recent studies have supported the idea that adults learn effectively through group problem solving and discussions (Chinnasamy, 2013).

However, not everything is easier for older adults in a higher education setting. While the literature generally agrees that mature age learners are more self-motivated, self-regulated and self-directed than younger learners, there have also been findings that suggest older adults may struggle with the writing component of university studies (Connell, 2011). Their fully developed prefrontal cortex often gives them an advantage in terms of their verbal communication skills, but they often find it very challenging to demonstrate effective academic writing (something that the more structure-focused younger learners pick up more quickly.

As shown, cognitive development theory supports the notion that younger students who are transitioning from adolescence to adulthood have physiological differences to mature age students, and these differences affect their thought processes and behaviour. It is hypothesised that differences will be found when comparing the way that younger and older students engage in university activities.

H1: Younger first year students engage in university activities differently than older mature age students

Social Support Theory and Support Relationships

To complement cognitive development theory, social support theory is also included in the theoretical framework for this study, as support relationships have been found to be a crucial precursor to engagement in higher education settings (Wilson, Broughan & Marselle, 2018; Xerri, Radford & Shacklock, 2017; Cornelius, Wood & Lai, 2016; Mahmoud, Staten, Lennie & Hall, 2015; Menzies & Baron, 2014). Support relationships within a university context typically are either mentor-based student-teacher relationships, or peer-based student-student relationships.

As one of the primary personal contacts that students make in their first-year, a tutor or lecturer can have a significant influence over how engaged a student will become overall. This influence extends beyond the obvious role of the teacher as an individual who delivers the learning content and assesses the students' understanding through assessment tasks and exams. There is a large capacity for a teacher to provide both academic and social support to students.

Academically, a teacher can provide additional support to students through their usual role of answering questions, clarifying concerns, providing additional guidance, and ensuring that assessment feedback is constructive, particularly for formative assessment tasks (Christie, Tett, Cree, Hounsell, McCune, 2008; Crimmons et al 2006). However, a teacher can also provide psychological support to students to support their transition to university (Wilcox, Winn & Fyvie-Gauld, 2005). While the role of an academic educator does not specifically extend to social support, students will often seek guidance and counselling from their lecturers and tutors when personal circumstances have made it difficult for them to engage with their study or complete their assignments.

The inherent power dynamics that exist within a student-teacher support relationship limit the degree to which the teacher can genuinely provide the type of support that a student needs. In this sense, it becomes important for many students to have strong network of peer-based support relationships to assist in both the academic and social contexts (Cornelius, Wood & Lai, 2016).

For school-leavers, while it can be a difficult process to form a new support network, the majority of school-leavers will have the benefit of being very accustomed to having a network of friends in a learning environment, having just come from such a situation in high school. Additionally, with a large proportion of first-year students being school-leavers, they are likely to feel much more like they 'fit in', and will share many generational interests and knowledge with their peers (Anderson & Carta-Falsa,2002; Braxton, Milem & Sullivan, 2000). For mature age students it can be much harder to form this network, as it has been longer since they have been part of such a network. Compounding this is the fact that they often find it much more difficult to 'fit in' as the majority of students are younger than they are, and hence do not share the same experiences or generational interests (Stone & O'Shea, 2013).

As discussed above, and evidenced by social support theory, it is hypothesised that mature age students will be more likely to form student-teacher based support relationships, and school leavers will be more likely to form student-student based support relationships. In

addition, it is hypothesised that the nature of student-teacher relationships, and student-student relationships, will be different between students of different ages.

H2: There is a difference between younger and mature age student relationships with their teachers and peers

LITERATURE REVIEW

Academic Engagement

Henrie, Halverson and Graham (2015) define academic student engagement as being an investment, commitment, or effortful involvement in learning. Trowler (2010) explains that while holistic definitions of engagement like the one above can be useful, the term itself is a meta-construct of many other factors, such as motivation, self-esteem, and self-efficacy, among others. Shernoff, Csikszentmihalyi, Schneider and Shernoff (2014) outline the benefits associated with high levels of engagement, making it a clear benefit to higher education students at any stage of their enrolment.

There are numerous elements that impact academic engagement of higher education students. Several researchers (e.g. Bookallil & Rolfe, 2016; Li & Guo, 2015) discuss how the rise of distance education has presented a new challenge for maintaining high levels of engagement in higher education. This is particularly so for students transitioning from high school, which does not have the same range of distance-based learning options. The increase in distance-based education technology, from online learning platforms right through to entirely distance-based courses, puts much more responsibility and accountability on the learner. For young people coming into university straight from high school, this level of responsibility can be an impediment to high levels of engagement.

Transition Engagement

Kift and Nelson (2005) called for consideration of transition engagement among university students, referring to the importance of academic engagement, and the 'transition experience' of new university students. This foundation led to studies examining factors that affect the engagement of students progressing through this transition process. Kasworm (2010) suggested that mature age students were actually more likely to exhibit higher levels of academic engagement, suggesting that they are more able to transition from their current life situation into university life than younger students are.

Egege and Kutieleh (2015) discuss transition engagement specifically in the context of academic engagement during the transition from high school to university. They suggest that this transition process can be crucial to establishing a pattern of ongoing success in higher education students. Wilson et al. (2014) explain that, regardless of where they are transitioning from, the first few weeks of the first term of enrolment are especially critical for engagement, as this is where the transition to university is most confronting. These authors also outlined that transition engagement was impacted by factors such as access to resources, the balance between study, work, and family commitments, peer relationships, and the clarity of explanations provided for assessment tasks.

The commonality found across all transition engagement studies is that students who are new to university have specific requirements that need to be met to maximise their potential for a successful higher education experience. However, as discussed, it is important to remember that not all students who are new to university are transitioning from high

school. There is a large diversity in the age of new students, and similarity, there is a large diversity in terms of learning styles.

Learning Styles

Approaches to learning refer to the way students engage in their academic tasks (Biggs, 1999). A deep approach to learning reflects a student's desire to focus on the meaning of the material, in an attempt to relate parts of the learning material to each other and apply ideas to previous knowledge. To engage in deep learning, students make the material personally meaningful to them and their world (Chin & Brown, 2000). Those who undertake deep learning approaches have been found to engage in new, sophisticated conceptions about the topic and more broadly, the world (Gibbs & Coffey 2004). In contrast, surface learning is more task-oriented, as the student examines the tasks to be completed, viewing each task in isolation (Chin & Brown, 2000). Research examining surface and deep approaches to learning tends to find that students alternate their learning approach dependent on the context (Chin & Brown, 2000; Ramsden, 1992). This finding supports the view that the teaching style used influences the type of learning outcome achieved (Trigwell & Prosser, 1991).

The approach taken by students in their learning experience is a function of both their own characteristics and the context they find themselves in (Trigwell & Prosser, 1991). While teachers cannot influence the characteristics of the students, they can influence the context (English, Luckett, & Mladenovic, 2007). Consequently, the following strategies are suggested to encourage students to adopt a deep approach to learning. First, the use of reflective assessments within subjects encourages students to reflect on their learning in context (English, Luckett, & Mladenovic, 2007). Second, using real world examples to relate the theory to practical situations assists students engage in deeper learning (Chin & Brown 2000). Third, encouraging students to question the content critically allows students to engage with the course at a deeper level (Biggs, 1999). For example, asking the question 'But why?' or playing 'devil's advocate' in class ensures that students 'own' their views by testing the theories proposed in the literature to their real life circumstances. Current research would suggest that these techniques would be more effective with mature age students, who have been shown to engage in deep-level learning more frequently than younger students (Burton et al 2009; Grosset, 1991).

H3: Younger first year students are more likely to engage in surface level learning, and mature age students are more likely to engage in deep level learning.

Evidence suggests that while support relationships will differ between younger and older students, the impact that these relationships have on engagement should be similar for both groups. Similarly, while it is hypothesised that there will be differences in transition engagement and learning styles, the degree to which these factors influence academic engagement should be fairly similar for both groups, as the literature would suggest that all students, regardless of age, are equally influenced by these precursors. Accordingly, the fourth and final hypothesis suggests that all of the precursors above will have a similar degree of predictive value when it comes to academic engagement of both younger students and mature age students.

H4: Support relationships, transition engagement, and learning styles will predict similar levels of academic engagement when comparing mature age and younger first year students.

METHOD

Participants

All first year students studying the first year course, Management Concepts, at a large Australian University were invited to participate in the online survey. The total population studied was 626 students, with 204 (32.58%) students completing the survey in the final two weeks of the trimester. Participants completed an online survey that took approximately 20 minutes to complete.

Measures

Age - Age was measured by asking participants the open-ended question, "what year were you born?" This was then coded to 0 for 0-18 years (inclusive) and 1 for 19+ years (inclusive) to get the final age of either school leaver or mature age student.

Student-student relationships and Student-teacher relationships - Using a four-item scale by Kember and Leung (2006), student-student relationships included two sub-scales including relationships with other students and cooperative learning. Previous studies have found its reliability and validity to be good (AVE .607, composite reliability .901) (Xerri, Radford & Shacklock, 2017). An example item is: "I have found that discussing course material with other students outside of classes has helped me reach an understanding of the material".

Student-teacher relationships were measured using seven items by Kember and Leung (2006). Previous research has established the scale to have good reliability and validity (AVE = 0.575 and composite reliability 0.890) (Xerri, Radford & Shacklock 2017). An example item is: "The communication between teaching staff and students is good". For both of these measures, participants responded the degree to which they agreed with the statement on a six point likert scale ranging from 1 – strongly disagree to 6 – strongly agree.

Learning styles - Learning styles were measured using the two-factor study process questionnaire (R-SPQ-2F) developed by Biggs, Kember and Leung (2001). This questionnaire consists of 20 items, 10 of which examine the degree to which students participate in deep level learning, and 10 examine the extent to which students' participate in surface level learning. This questionnaire has been previously identified as having good reliability and validity (Kubischta, 2014; Lindblom-Ylänne, Parpala & Postareff, 2018). An example item is: "I spend a lot of my free time finding out more about interesting topics which have been discussed in different classes." Participants reported the extent to which this was true to them on a five point scale (1= this item is never true for me, to 5-this item is always true of me).

Transition engagement - Using a 7-item measure by Pascarella and Terenzini (2005), transition engagement measured the extent to which students engage with university life during their transition process in the first year of study. An example item is: "I was given helpful advice when choosing my degree/courses." Participants rated the extent to which they agreed to this statement on a six point likert scale ranging from 1 – strongly disagree, to 6 – strongly agree.

Dependent Variable - The dependent variable is academic engagement, which is defined as how effectively a student can manage their time, study habits and strategies for academic success. This was measured on an 8-item scale developed by Krause and Coates (2008). An example item is: "I regularly borrow books or download materials from the university library." Prior research has established good reliability and validity (AVE = 0.535, composite reliability 0.771) (Xerri, Radford & Shacklock, 2017).

RESULTS

After removing cases with more than 10% missing per scale, the total sample size reduced from 204 completions to 190 participants (30.35%) across all scales. Of these 38.2% were female (N = 85) and 50.5% were male (N=103), with 8 participants not revealing their gender in this study. In addition, 38.2% (N=78) were first in their family to attend university, with 46.1% reporting not being the first in their family (N=94). A total of 18 participants did not respond to this question. Table 1 presents the means, standard deviations and correlations for each variable in this study.

insert Table 1 around here

Table 1 highlights that on a whole, students felt their relationships with their peers and teachers were acceptable, and that they had better than average transition engagement scores. However, students did tend to report lower academic engagement scores in the sample. In addition, the four main predictors (student-student relationships, student-teacher relationships, transition engagement, learning styles (deep and surface) were correlated in the expected directions with academic engagement.

To examine the first hypothesis in this study, an independent T-test was conducted. This revealed that younger first year students (M=3.67, SD: .90) engaged in lower levels of academic engagement than mature age students (M=4.11, SD: .97), t (188,1)= -3.13, p<.05. However, no significant difference was found in the levels of transition engagement experienced by younger or older students, t(188,1)= -.80, p = .425. The first hypothesis was partially supported in this study.

To examine the difference between younger and mature age students relationships with their teachers and peers, another independent samples T-test was conducted. This test revealed that there were no significant differences between the way students' reported their relationships with peers, t (188,1)=0.885, p = .377. However older students (M=4.45, SD=.79) reported higher levels of student-teacher relationships than younger students (M=4.14, SD = .91). Consequently, this hypothesis was also partially supported.

The third hypothesis proposed that younger students would be more likely to engage in surface level learning than mature age students, who would be more likely to engage in deep level learning. To test this hypothesis, an independent T test was performed. This analysis revealed partial acceptance of this hypothesis. Specficailly, younger students (M=2.78, SD= .68) were more likely to engage in surface level learning than mature students (M=2.38, SD=.69), t (188) =3.95, p = <.001. However, while there was a trend for mature students to engage in higher levels of deeper level learning (M=2.92, SD = .72) than younger students (M=2.80, SD = 0.61), this was not significant, t (188) =- 1.21, p = .229.

The final hypothesis argued that support relationships, transition engagement, and learning styles will predict similar levels of academic engagement when comparing mature age and younger first year students. To examine this hypothesis a regression analysis was performed with the sample split at age for comparison. Table 2 presents the regression results.

Insert Table 2 here

As evident in Table 2, predictors of academic engagement in mature and younger students differed, with the model predicting more variance in mature age students than younger students. Specifically, the model explained 36.9% of variance in mature age students, and 26.2% of variance in younger students. In addition, there were differences in the unique contributions of each variable. For example, student-student relationships, student-teacher relationships and transition engagement variables all had a unique contribution to the model in younger students, but they did not in older mature age students. This suggests that while these factors help to explaining academic engagement in both populations, there are also other factors that need to be investigated which impact this relationship.

DISCUSSION

The first hypothesis of the study was partially supported, as younger first year students engaged in lower levels of academic engagement than mature age students. This finding supports the existing research of Kasworm (2010) and Cleary and Zimmerman (2004), who suggest that older students will likely have higher self-efficacy and motivation, leading to higher levels of engagement. Interestingly though, no significant difference was found in the levels of transition engagement experienced by younger or older students, showing that older students also can struggle with transitioning into university life despite having very different circumstances to the younger school leavers.

The second hypothesis was also only partially supported, as older students reported higher levels of student-teacher relationships than younger students. This finding was as expected, but previous research (Stone & O'Shea, 2013) would suggest that younger students would report higher levels of student-student relationships than mature age students, but this was not the case. In fact, the results suggest that there was no significant differences in how younger and older students' reported their relationships with peers. This could reflect the fact that distance-based learning technologies are changing the nature of university peer groups, and the reliance of physical co-location is diminishing, thus further distinguishing the social environment of university from that of a typical high school.

The third hypothesis was again, only partially supported. As expected, younger students were more likely to engage in surface level learning than mature students (Burton et al 2009; Grosset, 1991). While there was a trend for mature students to engage in higher levels of deeper level learning, as would be expected, this finding was not statistically significant, suggesting that more effort could be made across the entire student cohort to assist students to adopt more deep-level learning styles.

Possibly the most interesting finding of the student presented though is that adopting a one-size-fits-all approach to building academic engagement among all first year students seems to be an ineffective approach. While the expected result was found for younger students, with student-student relationships, student-teacher relationships and transition engagement variables all having a unique contribution to academic engagement, this was not the case for older students.

IMPLICATIONS AND CONCLUSIONS

While the study presented has the limitation of being restricted to a single university, the findings still provide a useful contribution to the field. Furthermore, this limitation serves as an opportunity for future studies to further verify the findings presented here across a broader context. In addition, future studies could delve deeper into the findings by qualitatively

exploring the factors that influence academic engagement among younger and older first year university students.

This study has a number of implications for both researchers and higher education providers. For management academics, the findings contribute to the field of study, supporting some existing research, and presenting some questions for future study. For teachers, the findings suggest that benefits will be gained from adopting a more tailored approach to engaging students of different ages, and who are using different learning styles. The findings show that transition engagement is vital for all first year students, regardless of their age, but the approach to fostering this engagement needs to consider students of different ages and learning styles. The techniques used when engaging a younger student with a more surface-level learning style can and should look very different to the techniques used when engaging mature aged students with a more deep-level learning style.

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Table 1 ***Descriptive Statistics and Correlations between Demographic and Employment-Related Variables (N = 206).***

Variable	Mean	SD	α	Correlations						
				1	2	3	4	5	6	7
1. Age (binary)[a]	-	-	-	-						
2. Student-student relationships	4.19	0.98	0.91	-0.93	-					
3. Student-teacher relationships	4.32	0.86	0.92	.21**	.45***	-				
4. Learning styles – deep level	2.87	0.67	0.84	.33***	.20**	.42***	-			
5. Learning styles – surface level	2.56	0.72	0.83	-.40	.02	-.28***	-.33***	-		
6. Transitional engagement	4.19	0.87	0.83	.10	.39***	.41**	.35***	-.15*	-	
7. Academic engagement	3.91	0.96	0.83	.28***	.25***	.27***	.47***	-.39***	.39***	-

[a]Age was coded 0 for 0-18 years (inclusive) and 1 for 19+ years (inclusive) to get the final age of either school leaver or mature age student. As this was a binary variable, no means and standard deviation are provided. Student-student relationships, student teaching relationships, transitional engagement and academic engagement were rated on a 6-point likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). Whereas, Learnings styles (both deep and surface) were rated on a 5 point likert scale (1 – never true, 5 - always true).
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2: ***Regression results for younger and mature age students on academic engagement***

Predictor Variable	**Younger students (school leavers)**					**Mature age students**			
	B	***SE B***	**β**	**R^2 ($Adj.R^2$)**		***B***	***SE B***	**B**	**R^2 ($Adj.R^2$)**
Student-student relationships	0.32	0.12	0.31**			0.11	0.95	0.12	
Teacher-student relationships	-0.23	0.13	-0.23*			-0.48	0.12	-0.04	
Deep level learning	0.20	0.16	0.14			0.58	0.12	0.43***	
Surface level learning	-0.41	.14	-.,31**			-0.32	0.12	-0.23**	
Transitional engagement	0..26	0.10	0.28*	0.306 (0.262)***		0.19	0.12	0.15	0.400 (0.369)***

DV: Academic engagement * $p < .05$. ** $p < .01$. *** $p < .001$.