Learning engagement: The importance of meaning, belonging and academic momentum.

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Abstract

Understanding the source of differences in first year students’ engagement would benefit retention and completion rates. Meaningfulness and belonging play important roles in meeting psychological needs and driving student engagement. Academic momentum enhances learning autonomy and may also contribute to engagement. The present study aimed to distinguish groups of first year students based on their level of engagement and compare these groups on meaningfulness, belonging, and academic momentum. A total of 390 first year university students completed an online questionnaire and latent class analysis revealed a two group solution to the data based on engagement levels. The higher engagement group were found to be higher in meaningfulness, belonging, and academic momentum. Higher engagement was related to deferred study, mature age, and higher average study hours. Results suggest an institutional focus on student’s autonomous learning via meaningfulness, belonging, and life experience would contribute to student engagement and learning success.

Introduction

The aim of this study is to identify groups of students within a first year cohort based on variations in levels of self-reported learning engagement. The retention of students and higher course completion rates has become a primary concern for higher education institutions and governments (DEEWR, 2009). As such, student engagement is a priority for higher education institutions seeking to improve retention and completion rates (Altbach, Reisberg, & Rumbley, 2009; Deakin-Crick, 2012). In addition, student disengagement can increase demands placed on lecturers and academic staff through more requests for special consideration and remedial intervention (McInnis, 2002). A major challenge for higher educational institutions is to maximise the engagement of their students (Biggs & Tang, 2011; Kift, Nelson, & Clarke, 2010). Understanding how different types of first year students vary in relation to engagement may assist with improving interventions aimed at engagement, retention, and completion rates.

According to Reschly, Huebner, Appleton, and Antaramain (2008) most student engagement literature has emphasised environmental variables in relation to the different engagement dimensions. Kift et al. (2010) provides an example implicating support services and belonging as vital to engagement. Alternatively, Deakin-Crick (2012) refers to a set of criteria for understanding differences in engagement that is based on the degree of personal integration or meaningfulness. At a base or primary level, engagement involves compliance or conformity, for example, attendance in class. Secondary or moderate levels of engagement involve commitment to external motives such as meeting performance criteria or passing tests. Engagement at a tertiary or optimum level involves a deeper, meaningful integration of activity with personal goals and values. Meaning is associated with reflection and personal understanding that
contextualises experience according to values and expectations (Henderson-King & Smith, 2006; Sheldon, 2002). Larmar and Lodge (2014) proposed that deeper metacognitive skills are central to a students’ capacity to make sense of their learning processes, which impacts on their motivation and engagement to learn. Therefore, the level of meaning as indicative of the degree of personal integration is likely to positively influence levels of learning engagement.

**Self-Determination Theory and Student Engagement**

Self-Determination Theory (Deci & Ryan, 1985, 2000) describes how personal integration, in the form of internal regulation rather than external regulation, may lead to positive outcomes such as engagement. Indeed, there are a number of consistencies between Deakin-Crick’s (2012) description of levels of engagement, and the spectrum of motivational regulation provided by Organismic Integration Theory (OIT), a sub-theory within Self-Determination Theory (SDT; Deci & Ryan, 1985, 2000). Amotivation occurs when there is no understanding or meaningfulness for action. Controlled regulation involves behaviour which is impelled by outside forces such as compliance (e.g., external regulation), or to avoid negative feelings such as guilt or anxiety from not meeting expectations (e.g., introjected regulation). In contrast, autonomous regulation involves engaging with an activity due to understanding the personal importance of doing so (e.g., identified regulation), or because doing so accords with one’s sense of self (e.g., integrated regulation). The highest form of autonomy, intrinsic regulation, occurs when the enjoyment of an activity is an inherent goal. The form of regulation varies according to the degree of personal integration. Thus, autonomous regulation in students involves learning behaviours which are motivated from within, involving volition and personal interest or meaningfulness (Deci, Vallerand, Pelletier, & Ryan, 1991; Ryan & Deci, 2002). Autonomous regulation is likely to produce a deeper level of learning engagement among students compared to external (i.e., controlled) regulation of learning behaviour (Kosmala-Anderson, Wallace, & Turner, 2010), including university students (Siu, Bakker, & Jiang, 2013).

Henderson-King and Mitchell (2011) found that independence, exploration of life direction, and engagement in personal growth were associated with student autonomy and that these students also reported higher levels of meaning in the lives. Similar findings have suggested that those who pursue a calling (i.e., an inherently meaningful passion or interest in one’s work; see Dobrow & Tosti-Kharas, 2011; Hall & Chandler, 2005; Peterson, Park, Hall, & Seligman, 2009; Wrzesniewski, McCauley, Rozin, & Schwartz, 1997; Wrzesniewski, Dutton, & Debebe, 2003), which can also be found in university students (Hirschi, 2011; Hunter, Dik, & Banning, 2010), experience greater levels of engagement (Fairlie, 2011; Hirschi, 2012; Van Zyl, Deacon, & Rothmann, 2010). Similar to that of a calling Ryan and Deci (2000) explained that engaged students have confidence in their ability to undertake a challenge and do so with volition. Otherwise, according to Sheldon (2002), endeavours without volition quickly lose the enthusiasm needed to succeed. For students, particularly those in first year studies, high levels of meaning in relation to their studies, consistent with a calling, is likely to promote autonomy and lead to learning engagement.

**Hypothesis 1:** First year students distinguished by high levels of engagement are also likely to report high levels of meaningfulness in their education.

The need for relatedness is also described by SDT and relates to a sense of connection to others and to the environment in general (Deci & Ryan, 1985, 2000; Deci et al., 1991). Generally, people are inclined to internalise social norms, rules, and behaviours to enhance their sense of relatedness and acceptance with others (Deci & Ryan, 1985, 2000). Reeve (2012) suggests that a student’s relationship with others can influence the integration of routine tasks such as study
tasks through the development of group norms and expectations. Additional research has found that belonging (similar to relatedness) is an important component of student engagement (e.g., Brooks, Brooks, & Goldstein, 2012; Finn & Zimmer, 2012; Tinker, Buzwell, & Leitch 2012), and first year student retention (Morrow & Ackermann, 2012). Engaged first year students may thus have a greater sense of belonging than less engaged students.

**Hypothesis 2:** First year students distinguished by high levels of engagement are also likely to report high levels of belonging in a learning environment.

**Academic Momentum**

Martin, Wilson, Liem, and Ginn (2013) explored issues related to academic momentum and the impact on student’s success at university. Findings from this study suggested that prior learning, life experience, and ongoing study experiences have an effect on academic momentum. Academic momentum has been used to explain completion and non-completion of academic degrees (Adelman, 1999, 2006) as well as the strength of student engagement (Strahan, 2008). Martin et al. (2013) found that deferring tertiary studies after the completion of high school was associated with higher levels of early and ongoing academic achievement. Martin et al. argued that the experience gained in deferment (e.g., from working, travelling or volunteering) enhanced self-regulated (autonomous) learning. While age or maturity may enhance academic success Martin et al. found that the experiences of the period of deferment were more influential than age. Therefore older students, and students who have previously deferred may report higher levels learning engagement.

**Hypothesis 3:** First year students distinguished by high levels of engagement will likely be those who deferred commencing tertiary studies after completing high school.

**Method**

**Participants.**

The sample comprised 390 (178 males, 212 females) first year undergraduate students aged from 18 to 63 ($M = 25.84, SD = 9.10$).

**Measures.**

**Learning Engagement:** To measure learning engagement at university, participants completed the Motivation and Engagement Scale (MES; Martin, 2010). The scale comprises 44 items rated on a seven-point scale (1, Strongly Disagree; 7, Strongly Agree) which cover 11 facets of motivation and engagement. These are adaptive cognitions (Self-belief, Valuing of education, Learning Focus), adaptive behaviours (Planning, Task Management, Persistence), maladaptive cognitions (Anxiety, Failure Avoidance, Uncertainty of Control), and maladaptive behaviours (Self-sabotage, Disengagement). Each facet is comprised of four items which are summed, divided by 28 and multiplied by 100 to create a score for each of the 11 facets. The MES was found to be reliable in the current study, $\alpha = .81$.

**Meaningfulness in education:** Participants were also provided with a five-item scale developed by the authors to measure meaningfulness in their studies (e.g., “My university course is really important and worthwhile”) measured on a 7-point scale (1, Strongly Disagree; 7, Strongly agree). Scores ranged from 5 to 35, with higher scores indicating a greater sense of meaningfulness. The five items were found to be highly reliable, $\alpha = .88$. 

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Sense of belonging: The authors also developed four items (e.g., “I feel part of a community at my university”) to assess students’ sense of belonging on campus. Each item was measured on a 7-point scale (1, Strongly Disagree; 7, Strongly agree). Scores ranged from 4 to 28, with higher scores indicating a greater sense of belonging. The measure displayed adequate reliability, $\alpha = .83$.

Deferment: Students were provided with a single question (“Have you commenced university in the year following completing secondary school?”). Those who had deferred their studies were given an option to specify why they had deferred. These responses were coded in two ways; students who had taken time away from study to work, and students who had undertaken a diploma course who had completed study previously.

Number of hours studied: To determine the level of investment students made towards their study a measure of the number of hours spent studying was used. Students were asked to self-report the number of hours studied each week with the following open-ended question, “How many hours of study do you do on an average week?”

Procedure

Students were informed about the survey via email messages. Participation was entirely voluntary, and completion of the survey was at their convenience. The survey was created specifically for first year students to raise awareness of important learning resources associated with engagement and academic achievement. In return for participation, students received a personal learning profile. These learning profiles were based on their scores from the survey and included descriptions and enhancement activities of the measured constructs (e.g., mastery, planning, and anxiety). Although primarily targeting first year students the survey was available for all undergraduate students, however, only first year student data is reported here.

Results

Assessment of meaningfulness and belonging scales.

Prior to conducting the main analyses, the five-item meaningfulness scale was evaluated. A confirmatory factor analysis using MPLUS version 6 (Muthen & Muthen, 2010) indicated that a one factor model provided an excellent fit with the data, $\chi^2(5) = 16.12, p = .01, \text{CFI} = 1.00, \text{TLI} = .99, \text{RMSEA} = .05, \text{SRMR} = .01$. The four items created to assess belonging were also assessed. The results of a CFA indicated that the four item, one factor model provided a good fit with the data, $\chi^2(2) = 5.02, p > .05, \text{CFI} = 1.00, \text{TLI} = .98, \text{RMSEA} = .06, \text{SRMR} = .01$.

Latent Class Analysis

To identify different types of first year students based on their levels of engagement, a Latent Class Analysis (LCA) was conducted on each MES facet in the first year sample. LCA is a method of classifying homogenous groups based on common characteristics within datasets (Borgen & Barnett, 1987). As shown below in Table 1, the results indicated that a two class model provided the best fit with the MES variable data.
Table 1.

Results of latent class analysis on first year students.

<table>
<thead>
<tr>
<th></th>
<th>1 class</th>
<th>2 classes</th>
<th>3 classes</th>
<th>4 classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIC</td>
<td>36208.82</td>
<td>35274.25</td>
<td>35046.86</td>
<td>34836.02</td>
</tr>
<tr>
<td>BIC</td>
<td>36296.08</td>
<td>35409.10</td>
<td>35229.30</td>
<td>35066.05</td>
</tr>
<tr>
<td>Sample adjusted BIC</td>
<td>36226.27</td>
<td>35301.22</td>
<td>35083.35</td>
<td>34882.02</td>
</tr>
<tr>
<td>Entropy</td>
<td>-.86</td>
<td>.85</td>
<td>.84</td>
<td></td>
</tr>
<tr>
<td>Lo, Mendell, Rubin</td>
<td>-</td>
<td>945.37*</td>
<td>247.93</td>
<td>231.61</td>
</tr>
<tr>
<td>N for each class</td>
<td>390</td>
<td>205</td>
<td>92</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>185</td>
<td>172</td>
<td>133</td>
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<td></td>
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<td>106</td>
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</tbody>
</table>

Note: * p < .001

Mean scores on each MES variable for the two classes are summarised in Table 2. The result of independent sample t-tests indicated that all mean scores between Class 1 and Class 2 were significantly different, p < .001. Thus, respondents comprising Class 2 reported significantly higher levels of engagement represented by adaptive cognitions (e.g., Self-belief) and behaviours (e.g., Planning), and lower levels of maladaptive cognitions (e.g., Anxiety) and behaviours (e.g., Disengagement).

Table 2.

Mean scores for each MES facet for classes 1 and 2.

<table>
<thead>
<tr>
<th></th>
<th>Class 1 (n = 205)</th>
<th>Class 2 (n = 185)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td><strong>Self-belief</strong></td>
<td>79.04 (11.43)</td>
<td>92.88 (7.31)</td>
</tr>
<tr>
<td><strong>Valuing</strong></td>
<td>79.32 (10.58)</td>
<td>91.78 (7.42)</td>
</tr>
<tr>
<td><strong>Learning Focus</strong></td>
<td>82.96 (10.48)</td>
<td>94.96 (6.46)</td>
</tr>
<tr>
<td><strong>Planning</strong></td>
<td>48.82 (14.19)</td>
<td>71.58 (15.51)</td>
</tr>
<tr>
<td><strong>Task Management</strong></td>
<td>62.98 (15.02)</td>
<td>82.80 (14.06)</td>
</tr>
<tr>
<td><strong>Persistence</strong></td>
<td>63.52 (12.90)</td>
<td>85.73 (11.03)</td>
</tr>
<tr>
<td><strong>Anxiety</strong></td>
<td>71.27 (20.11)</td>
<td>62.28 (21.94)</td>
</tr>
<tr>
<td><strong>Failure Avoidance</strong></td>
<td>44.67 (21.65)</td>
<td>32.01 (19.98)</td>
</tr>
<tr>
<td><strong>Uncertain Control</strong></td>
<td>53.64 (16.66)</td>
<td>36.26 (17.43)</td>
</tr>
<tr>
<td><strong>Self-sabotage</strong></td>
<td>45.37 (20.89)</td>
<td>26.16 (13.49)</td>
</tr>
<tr>
<td><strong>Disengagement</strong></td>
<td>45.03 (15.20)</td>
<td>24.04 (10.74)</td>
</tr>
</tbody>
</table>
Comparison of classes.

Further t-tests were used to compare each class on mean age, scores on meaningfulness and belonging, and the number of self-reported hours studied each week. To compare the categorical variable of whether or not study was previously deferred, crosstabulations were examined.

**Age:** Respondents in class 2 ($M = 28.87, SD = 10.59$) were significantly ($t(296.19) = -6.43, p < .001$) older than respondents in class 1, $M = 23.10, SD = 6.40$. **Meaningfulness:** Respondents in class 2 ($M = 29.53, SD = 4.35$) reported significantly ($t(388) = -14.20, p < .001$) higher levels of meaning in their studies than respondents comprising class 1, $M = 22.88, SD = 4.85$). **Belonging:** Respondents in class 2 ($M = 18.43, SD = 5.07$) reported significantly higher ($t(388) = -5.67, p < .001$) levels of belonging than respondents comprising class 1, $M = 15.62, SD = 4.71$. **Hours of study:** Class 2 ($M = 2.48, SD = 1.08$) reported studying for significantly ($t(363.59) = -5.55, p < .001$) more hours each week than respondents in class 1, $M = 1.91, SD = .93$. **Deferral of studies:** Crosstabulation results indicated that both classes were significantly different, $\chi^2(2) = 18.96, p < .001$. A significantly ($p < .05$) greater proportion of students in Class 1 (53.70%) commenced university study immediately after high school, in comparison to Class 2, 34.10%. Class 2 comprised a significantly ($p < .05$) higher proportion of students who previously deferred their studies (56.20%) compared to Class 1, 43.40%. Class 2 also included a significantly ($p < .05$) greater proportion of students who had completed a previous degree (9.70%) than Class 1, 2.90%.

**Discussion**

The aim was to identify different groups of first year students based on their level of engagement. In particular, it was expected that more engaged students may report higher levels of meaningfulness in their studies and belonging, and to potentially be older and more likely to have previously deferred their studies. The results indicated that there were two groups of students; one group that appeared to be highly engaged and a second group reporting lower levels of engagement. As expected, the more engaged group was older, more likely to have deferred their studies, and reported higher levels of meaningfulness and a greater sense of belonging. The more engaged group was also reported studying for significantly more hours each week. These results are in accordance with Deakin-Crick’s (2012) assertion that there are degrees or levels of engagement that have corresponding learning advantages.

The results of this study indicate that meaningfulness and belonging are important elements in first year students’ engagement in learning and might therefore become central to induction and pedagogical programs. Meaning in relation to learning is an important priority for first year students if they are to engage effectively in their studies and learning in general (Larmar & Lodge, 2014; Nash & Saurman, 1978). Generating meaningfulness in learning requires that attention is paid to underlying pedagogical processes (Bronkhorst, Meijer, Koster, & Vermunt, 2011; King, Baxter-Magolda, & Massé, 2011) such as linking subject matter to personal experience (Tinker et al., 2012). However, for first year students the imperative to find meaning in their studies has additional weight due to higher numbers of students now embarking on tertiary education that may be lacking in personal learning resources that motivate learning (Biggs & Tang, 2011; Kift et al., 2010). These issues are heightened for tertiary institutions given the trend to market education as a means to an end (e.g., to get a degree before moving into the workplace) rather than as a significant experience in its own right, thus providing students with little emphasis on the learning process and the journey of education (Kazmi, 2010).
Similar to building a sense of meaning around learning, first year students would also benefit through greater engagement in learning if university programs aimed to enhance their sense of belonging to the learning environment. As found in this study, belonging, along with meaningfulness, was associated with students’ self-determined approach to learning and may enable greater engagement with learning. Students that feel as if they belong to a learning environment such as a university appear in some way to have integrated aspects of that environment into one’s self-concept leading to adoption of social norms and values (e.g., Reeve, 2012) that manifest as learning engagement. The association between belonging and engagement may therefore be linked to a student’s identification as a student (see Tinker et al., 2012) as identification involves the adoption of group norms, values, and objective as one’s own (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). As such, belonging may also help build greater meaning for students through the integration of the learning environment into the students’ sense of self (Henderson-King & Smith, 2006). Programs that generate a sense of belonging would appear to have important advantages towards the engagement of first year students by enabling the process of personal integration of the learning environment.

This study also found that students who were more engaged with learning were also more likely to have deferred their studies, study for more hours, and report being older then students in the less engaged group. According to Martin et al., (2013) deferred studies and number of hours spent in study are indicative of academic momentum that has a positive effect on progression from first year to second year studies. Martin et al. (2013) suggested that the deferment of studies enhances autonomy towards learning through the knowledge and skill gained in the experiences encountered while taking a break in study. Programs that encourage volunteering, vocational, or developmental pursuits for first year students may help to create positive academic momentum and engagement in learning.

Interestingly, the two groups distinguished by levels of learning engagement were also characterised by differences in age. More engaged students tended to be older than less engaged students. This is contrary to Martin et al’s (2013) finding that being older held little advantage over academic outcomes. Despite this, the correlational results in the current study indicated that older students reported higher levels of meaning in their studies and lower levels of belonging, whilst higher levels of meaning were independently associated with higher levels of belonging. Thus, older students may experience less belonging due to difficulties relating to younger students, or they may not develop a strong sense of belonging due to reduced time spent on campus (e.g., working full-time whilst studying part-time). However, due to maturity or increased life experience, older students may have reported a greater sense of meaning in education. Younger students in contrast, may require a sense of belonging on campus in order to internalise social norms (e.g., study habits) which may facilitate the meaningfulness of their university experience. Furthermore, older students may have well-established social networks outside university. In comparison, younger students may develop their social networks more readily within educational environments. This may therefore justify the significant correlation between meaning and belonging found in this study.

An alternative, yet compatible explanation to the previous argument is that the measure of belonging captured social interaction more so than a social resource with direct practical application towards learning. Belonging in relation to learning environments was an attempt to capture the functional support for learning that is important to optimised learning outcomes. Such a resource does not appear to have obvious variance that would be related to age. However, differences based on age in relation to social interaction, independent of learning does appear to have an intuitively more viable explanation and appeal. Further research is required to test these assertions.
Study Limitations

Some potential limitations have been identified in relation to this study. The data was collected from students based at a single university. While expectations are that these students are representative of typical university students in first year study, the possibility of differences with students attending another university cannot be discounted. Deci and Ryan (1985, 2000) and Niemiec and Ryan (2009) suggest that an environment that helps satisfy basic psychological needs of autonomy and relatedness is likely to be more meaningful and support autonomous regulation and engagement. Therefore, different institutions which may support or undermine autonomy or relatedness to differing extents may yield different levels of meaning and engagement. In addition, students from the university in this study may be predominantly form a demographic catchment at has unique qualities that enhance engagement through personal, social, or financial resources. Further studies conducted with different first year cohorts would help address these issues. Similarly, future studies might also explore similarities and differences between students engaged in different study disciplines. Information about student’s study discipline or course was not gathered in the current study in order to allay concerns about how such data may be applied. Another limitation of the current study is that the data was self-reported and therefore may be subject to social desirability. However, if social desirability was present in the data (e.g., number of hours of study each week) the bias would be assumed to affect results in both engagement groups found in this study. Therefore, the magnitude of differences found between these two groups would be unaffected by the presence of such bias.

Conclusions

This study found that the level of engagement of first year students is associated with the important learning resources of meaning and belonging. Both meaning and belonging are key ingredients of students’ motivation to learn through the positive impact on self-directed behaviour. Furthermore, more engaged students appear to benefit from life experience such as deferring the commencement of university studies after high school. These findings advance understanding of the mechanisms that may enhance student engagement, in turn improving retention and completion rates. Interventions that build a sense of meaning and belonging are recommended in order to enhance first year student engagement. Volunteering, vocational, and personal development programs are also suggested as ways of enhancing first year student engagement.

References

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