The Relationships between Personality, Learning Approaches, Satisfaction with Student Support Services, and Academic Success

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Abstract

The first year at university is crucial for students as it can often lay the platform for future academic success. The current study was designed to examine various factors that might influence student transition to higher education. The main aim was to examine the relationships between personality, learning approaches, and academic success in 647 first-year students, enrolled both on-campus and via distance education, at the University of Southern Queensland (USQ). Academic success was measured by Grade Point Average (GPA) at the end of students' first year of tertiary study. Additionally, this study examined students' satisfaction with USQ student support services. Consistent with previous research, Conscientiousness positively predicted GPA. Other key findings were that the Surface approach negatively predicted GPA; the Strategic approach positively predicted GPA. Both Conscientiousness and Intellect positively predicted the Deep and the Strategic approaches, respectively; Neuroticism positively predicted the Surface approach. Together, these findings provide implications for curriculum design and delivery and for transition programs for commencing students. Further research is required to determine whether student engagement and satisfaction with student support services predicts academic success, for both on-campus and distance student cohorts. Research that tracks the academic performance of these students until they complete their degrees or leave the university is recommended.

Introduction

Today's universities are under pressure to provide students with quality learning experiences. To remain competitive, universities are embracing a move to more flexible learning environments that support the diverse range of student learning styles and motivations (Wimshurst, Wortley, Bates, & Allard, 2006). While the core business of universities remains to equip students with high quality graduate qualities and skills for success in society, the impact of student support services on learning outcomes is gaining interest (Smith, 2007). Investigation into why students either fail or succeed reveals a variety of cultural, institutional, and individual differences factors (Thompson, 2008; Wimshurst et al.). Attrition rates are estimated to be approximately 20% during the first year, almost double that of second year (Marks, 2007). First-year students face a unique set of challenges and some adjustments are often required to achieve academic success (Keup, 2006; Weisenberg & Stacey, 2005). Many first-year students enter university with high expectations for success yet are often unprepared for the demands of academic life - they subsequently experience feelings of dissatisfaction, low levels of engagement, and declines in academic achievement (Keup). To this end, the current study aimed to provide insight into individual differences factors thought to influence student transition, such as learning approaches and personality, to determine their relationship with academic success. The study also explored the role of student engagement and satisfaction with USQ support services.

USQ is a multi-campus university with approximately 80% of its students learning via distance education. The University's support services include: assistance with accommodation and finance, advice on career and employment, counselling, welfare and medical services, and study skills programs, among others. Distance students often access such support through a quality integrated support system, including online career services, electronic course discussion groups, online databases, online bookstore, and an extensive virtual library. Such support services add value to the student learning experience, equipping students with various learning tools and encouraging students to develop coping skills that facilitate engagement (Smith, 2007).

Approaches to Learning

Approaches to learning reflect the individual differences in strategies used to achieve a particular learning task (Diseth, 2003). The student approach to learning (SAL) tradition distinguishes between Deep, Surface, and Strategic learning approaches (see

Entwistle & Peterson, 2004). A Deep approach involves finding meaning in what is being studied to maximise understanding. A Surface approach involves investing little time in the academic task and memorising information with rote-learning. A Strategic approach involves being guided by the assessment criteria and enhancing self-esteem through competition.

Research has investigated the relationships between these three learning approaches and academic success. The SAL paradigm argues that high achievement can be predicted by a Deep approach, either alone or in combination with a Strategic approach (Diseth & Martinsen, 2003; Diseth, Pallesen, Hovland, & Larsen, 2006). In contrast, low achievement can be predicted by a Surface approach to learning (Diseth & Martinsen).

Personality

Debate continues about the exact number of factors comprising personality, however, most research favours a five-factor model (McCrae & Costa, 2007): Neuroticism, Extraversion, Openness to Experience, Conscientiousness, and Agreeableness. Each factor is bipolar. People high on the Neuroticism trait (i.e., low on the Emotional Stability trait) tend to be nervous and tense. Individuals high on the Extraversion trait tend to be social, energetic, and self-confident; introverted people tend to be timid, reserved, and quiet. The Openness to Experience trait, also known as Intellect, is characterised by an open-mind and a willingness to experience new situations. Individuals high on the Agreeableness trait are altruistic, adaptable, and supportive. Conscientiousness is characterised as being responsible, hardworking, and dependable.

Evidence to support the relationship between academic success and personality is mixed (Diseth et al., 2006). Conscientiousness is the trait most consistently positively correlated with academic performance (Nguyen, Allen, & Fraccastoro, 2005). Intellect has also been positively associated with academic success in undergraduate studies (Burton & Nelson, 2006). Introverted students are expected to outperform extraverts (Entwistle & McCune, 2004), however, findings are inconsistent. In contrast, Neuroticism and Agreeableness are generally not associated with academic success (Diseth et al.).

Satisfaction with Student Support Services

The first year student experience can often lay the platform for future academic success (Keup, 2006; Thompson, 2008). For distance students, issues such as understanding the course material, balancing study with family and work commitments, and coping with an isolated teaching environment and a limited sense of connection with peers (Burton & Nelson, 2006), become paramount. Failure to provide quality learning and administrative support may result in student dissatisfaction and withdrawal (Krause, Hartley, James, & McInnis, 2005). According to Thompson, the critical role of social support offered by peers in creating relationships can increase satisfaction and engagement; such support can also help to decrease academic stress. Zhao and Kuh (2004) likewise found that participating in learning communities was positively linked with engagement and learning outcomes and to overall satisfaction with the first year experience. Thus, students should engage earlier with support services to minimise drop-out rates (McClenney, 2007).

Academic Success

The current study used grade point average (GPA) as the measure of academic success. GPA is a standardised measure of overall academic performance across all courses completed by the student (Zeegers, 2001).

Research Aims

The main aim of this study was to examine the relationships between personality, learning approaches, and academic success in a sample of first-year students at USQ. On-campus and distance cohorts were included in the sample. First, it was hypothesised that the Strategic and Deep approaches will each positively predict GPA; the Surface approach will negatively predict GPA. Second, it was hypothesised that Conscientiousness will positively predict GPA. Third, the relationship between learning approaches and personality was also examined. The nature of the relationship between satisfaction with student support services and academic success was also examined.

Method

Participants

A total of 647 first-year students (417 females and 230 males) at USQ participated (response rate = 10.9%), however, only 556 had complete data for analysis. The sample comprised 36.9% on-campus students (152 females and 53 males) and 63.1% distance students (211 females and 140 males). This was considered representative of the first-year USQ student population. The overall age range was from 17 to 64 years ($M = 30.82$, $SD = 11.21$). The average age for on-campus students was 25.57 years ($SD = 10.61$); the average age for distance students was 33.85 years ($SD = 10.43$).

Measures

The self-report survey was developed for use in a longitudinal study of individual differences in student achievement. However, only those measures relevant to the current research aims are discussed here.

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The 52-item Approaches and Study Skills Inventory for Students was used to measure the three learning approaches (Entwistle & McCune, 2004). Participants indicated their relative agreement using a 5-point Likert-type scale, ranging from 1 (*disagree*) to 5 (*agree*). The 16-item Deep approach scale measures whether students (a) seek meaning, (b) relate ideas, (c) use evidence, and (d) show interest in concepts. The 16-item Surface approach scale measures whether students (a) lack purpose, (b) memorise material, (c) are syllabus bound, and (d) show a fear of failure. The 20-item Strategic approach scale measures whether students (a) organise their study, (b) can time manage, (c) are alert to assessment demands, and (d) monitor their performance. Total scale scores for both the Deep and Surface approaches could theoretically range between 16 and 80; total scores ranged between 20 and 100 for the Strategic approach scale. Entwistle and McCune reported acceptable reliabilities for the Deep ($\alpha = .84$), Strategic ($\alpha = .80$), and Surface ($\alpha = .87$) scales.

The NEO Five Factor Inventory (NEO-FFI) Form S (self-report) is a short form of the NEO-PI developed by Costa and McCrae (1991) designed to measure the Big-Five factors of personality: Neuroticism, Extraversion, Agreeableness, Conscientiousness., and , Openness to Experience. Participants completed the 60-item NEO-FFI using a 5-point Likert scale (1 = *very inaccurate;* 5 = *very accurate*). Total scores for each major trait could theoretically range between 12 and 60. McCrae and Costa (2007) showed that each of the five scales demonstrated acceptable internal reliabilities.

Academic success was measured by GPA. Scores range from 1.50 (*fail*) to 4 (*pass*) to 7 (*high distinction*).

Students' satisfaction with the various support services and facilities provided by USQ were measured using the following subscales: administration services (23 items), library (10 items), information and communication technology services (13 items), student support (10 items), distance education services (4 items), and university facilities (10 items). Participants rated their degree of satisfaction using a 5-point Likert scale (1 = *very dissatisfied;* 5 = *very satisfied*). Additionally, four items were used to measure overall student satisfaction with the University's services with total scores ranging between 1 and 20 (Overall Satisfaction). This was the measure carried forward for main analyses.

Procedure

The current data was collected online. Students across the University were invited to participate in the study via an email from the USQ Academic Registrar. The total testing time for the Internet-administered survey was about 1 hour. Testing was carried out over a 3-month period, prior to students completing their first semester of study. Personalised feedback was provided to each participant, summarising each student's learning approaches and major personality traits and outlining strategies for optimising individual learning environments.

Results and Discussion

Table 1 shows means and standard deviations for key variables. The average GPA was above a credit level (B) for both on-campus and distance students. Both student cohorts indicated they were generally satisfied with the various services provided by the University, however, the vast majority of participants (90.5%) indicated that they had never used some of the support services on offer. For example, only 12.4% of the students indicated they had accessed the student support service, and of these, most had only accessed the support only one or two times. Given that the majority of USQ students learn via distance education, it is important that all students are alerted to the various support services available to encourage them to persist in the crucial first-year of study.

Table 1: Summary Statistics: Learning Approaches, Personality, Student Support, and Academic Success.

Scale	On-campus (*n = 205*)		Distance (*n = 351*)		α
	M	*SD*	*M*	*SD*	
Learning Approaches					
Deep	58.74	8.67	60.56	8.23	.85
Strategic	69.53	13.79	71.72	12.59	.90
Surface	44.79	10.66	40.93	10.30	.85
Personality					
Extraversion	38.63	6.90	37.88	6.62	.81
Agreeableness	40.68	5.89	41.20	5.97	.76
Conscientiousness	39.76	7.04	42.43	6.64	.85
Neuroticism	32.83	8.68	29.99	8.70	.89
Intellect	37.76	5.80	38.12	5.83	.71
Support Services					
Overall Satisfaction	18.77	1.71	16.29	2.59	.85
Academic Success					
GPA	5.42	1.07	5.53	1.12	-

As shown in Table 1, on-campus students showed personality profiles similar to those for distance students. The learning approaches for on-campus students were also comparable to those reported for the distance students.

Pearson's product moment correlations were computed for the key variables shown in Table 1. As

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shown in Table 2, as expected, the Strategic and Deep approaches were both significantly correlated with GPA; the Surface approach significantly negatively correlated with GPA ($p < .01$). Conscientiousness correlated significantly with GPA ($p < .01$). The Deep approach correlated positively with the traits Conscientiousness and Intellect ($p < .01$). The Strategic approach was significantly correlated with Conscientiousness ($p < .01$). The Surface approach correlated positively with Neuroticism ($p < .01$).

A series of multiple regression analyses were then conducted to further examine the relationships between learning approaches, personality, and academic success (GPA). In the following analyses, all Beta results that relate to individual predictors within a multiple regression model reflect the significance of the unique contribution of the predictor within that model. A full test of the model was beyond the scope of this paper.

First, GPA was regressed onto the three approaches to learning ($R^2 = .18$, $F[3, 527] = 38.89$, $p < .001$). As expected, the Surface approach ($\beta = -.24$, $p = .01$) negatively predicted GPA; the Strategic approach ($\beta = .26$, $p = .01$) positively predicted GPA. About 18% of the variance in GPA was accounted for by these predictors. The Deep approach was not a significant predictor of GPA. Surface learning appears to be driven by a fear of failure and excessive worry when attempting to cope with the demands of the task. Thus, shallow understanding and rote learning are typically used to reproduce the material to meet the course requirements, however, a lack of interest in content and meaningful understanding tends to result in low achievement (cf. Entwistle & McCune, 2004). In contrast, strategic learning is organised and involves making specific plans to achieve academic success.

Second, GPA was regressed onto the five personality traits ($R^2 = .13$, $F[5, 517] = 14.74$, $p < .001$). The personality traits accounted for 13% of the variance in GPA. Conscientiousness ($\beta = .27$, $p = .01$) contributed strongly to GPA, accounting for 5.8% of the total variance. Conscientious individuals are typically dependable, organised, and responsible, therefore it is not surprising that this trait predicts academic success.

Third, the three approaches to learning were each regressed onto the five personality traits. Both Conscientiousness ($\beta = .28$, $p = .01$) and Intellect ($\beta = .34$, $p = .01$) positively predicted the Deep approach ($R^2 = .24$, $F[5, 545] = 33.56$, $p < .01$). These same traits also positively predicted the Strategic approach ($R^2 =$

$.45$, $F[5, 546] = 89.35$, $p < .001$) - Conscientiousness ($\beta = .62$, $p = .01$) and Intellect ($\beta = .08$, $p = .01$), respectively. Neuroticism ($\beta = -.08$, $p = .01$) was also a negative predictor of the Strategic approach. In contrast, all but one personality trait significantly predicted the Surface approach ($R^2 = .42$, $F[5, 545] = 77.79$, $p < .001$). Conscientiousness ($\beta = -.17$, $p = .01$) and Intellect ($\beta = -.32$, $p = .01$) each negatively predicted the Surface approach; Neuroticism ($\beta = .45$, $p = .01$) and Extraversion ($\beta = .09$, $p = .01$) each positively predicted the Surface approach.

Overall Satisfaction was significantly positively correlated with GPA ($p < .01$) and a subsequent post-hoc multiple regression analysis showed this result to be significant ($R^2 = .02$, $F[1, 412] = 7.16$, $p = .008$). However, given that a large proportion of students had never used the support services, it is uncertain whether satisfaction with student support services is an epiphenomenon of reasonably successful engagement with the University and therefore has no causative role in predicting academic success. Further research is warranted and should include following-up on those students who disengaged from the University and determining their level of engagement and satisfaction with student support services.

Conclusion

The current findings contribute to our understanding of the first year student experience. A key finding of this study is that the Strategic approach positively predicted GPA; the Surface relationship negatively predicted GPA. Strategic learners intend to do well in the course by organising and planning their study in response to assessment requirements and criteria; they manage time and effort effectively. In contrast, Surface learners are more syllabus bound and use more unrelated memorising in their learning (Entwistle & Peterson, 2004).

Both Intellect and Conscientiousness positively predicted the Deep approach. Individuals scoring high in Intellect are intelligent, imaginative and perceptive – they aim to understand what they learn and relate new concepts to ideas already assimilated, indicative of a Deep approach. Conscientiousness also positively predicted the Strategic approach. Conscientious individuals and determined, self-disciplined and organised, and have high aspirations for academic success, as evident in the current data. In contrast, Neuroticism positively predicted the Surface approach.

Table 2: Correlation matrix: GPA, overall satisfaction, approaches to learning, and personality.

Variable	1	2	3	4	5	6	7	8	9	10
1 GPA	1.00									
2 Satisfaction	.13**	1.00								
3 Deep	.22**	.23**	1.00							
4 Strategic	.38**	.25**	.57**	1.00						
5 Surface	-.33**	-.23**	-.43**	-.47**	1.00					
6 Extraversion	.02	.08	.16**	.21**	-.17**	1.00				
7 Agreeable	.14**	.19**	.10*	.19**	-.24**	.30**	1.00			
8 Conscientious	.26**	.13**	.31**	.69**	-.36**	.24**	.25**	1.00		
9 Neuroticism	-.16**	-.01	-.17**	-.33**	.53**	-.40**	-.28**	-.40**	1.00	
10 Intellect	.12**	.10*	.34**	.13**	-.36**	.10*	.13**	.07	-.08*	1.00

Note. Satisfaction = Overall Satisfaction; Agreeable = Agreeableness; Conscientious = Conscientiousness.
$* p < .05$, $** p < .01$.

Neurotic individuals tend to manifest anxiety and are easily stressed. It is therefore not surprising that people with these characteristics favour reproducing content to cope with course requirements. Thus, educators of first-year students need to ensure students are equipped with self-management and study skills to help them organise their study time more effectively and experience success.

Although satisfaction with student support services appears related to academic success, it is likely this relationship is a function of the large sample size. The key finding that the University support services are greatly under-utilised by first-year students deserves further attention. Follow-up research is required to determine whether those who access student support services differ from those who do not. More needs to be done to alert students to the full range of support services and facilities available as they have the potential to enrich their early student learning experiences. Academics and University support staff could collaborate to develop transition programs that help those students new to tertiary life achieve success. Further research could examine how these support services might influence academic success beyond the first-year program.

References

Burton, L. J., & Nelson, L. J. (2006). The relationships between personality, approaches to learning, and academic success in first-year psychology distance education students. *Proceedings of the 2006 Higher Education Research and Development Society of Australasia annual conference.* Australia: UWA.

Costa. P. T., Jr., & McCrae, R. R. (1991). *NEO Five-Factor Inventory: Professional manual.* Odessa, FL: Psychological Assessment Resources.

Diseth, A. (2003). Personality and approaches to learning as predictors of academic achievement [Electronic version]. *European Journal of Personality, 17,* 143-155.

Diseth, A., & Martinsen, O. (2003). Approaches to learning, cognitive style, and motives as predictors of academic achievement [Electronic version]. *Educational Psychology, 23*, 195-207.

Diseth, A., Pallesen, S., Hovland, A., & Larsen, S. (2006). Course experience, approaches to learning and academic achievement [Electronic version]. *Education and Training, 48,* 156-169.

Entwistle, N., & McCune, V. (2004). The conceptual bases of study strategy inventories [Electronic version]. *Educational Psychology Review, 16*, 325-345.

Entwistle, N. J., & Peterson, E. R. (2004). Conception of learning and knowledge in higher education – Relationships with study behavior and influences of learning environments. *International Journal of Educational Research, 41,* 407-428.

Keup, J. R. (2006). Promoting new-student success: Assessing academic development and achievement among first-year students. *New Directions For Student Services,* 27-46. Retrieved April 3, 2008, from PsycARTICLES database.

Krause, K., Hartley, R., James, R., & McInnis, C. (2005). *The first year experience in Australian universities: Findings from a decade of national studies.* Canberra, Australia: DEST. Retrieved March 3, 2009, from: http://www.dest.gov.au/sectors/

Marks, G. N. (2007). Completing university: Characteristics and outcomes of completing and non-completing students. Camberwell, Victoria: The Australian Council for Educational Research. Retrieved April 15, 2008, from http://www.universitiesaustralia.edu.au/

McClenney, K. M. (2007). The community college survey of student engagement. Community College Review, 35. [Electronic version] Retrieved April, 15, 2008, from Academic Search Premier database.

McCrae, R. R. & Costa, P. T. Jr., (2007). Brief versions of the NEO-PI-3 [Electronic version]. *Individual Differences, 28*, 116-128.

Nguyen, N. T., Allen, L. C., & Fraccastoro, K. (2005). Personality predicts academic performance: Exploring the moderating role of gender. *Journal of Higher Education Policy&Management, 27,* 105-116.

Smith, R. (2007). An overview of research on student support: Helping students to achieve or achieving institutional targets? Nurture or de-nature? [Electronic version]. *Teaching in Higher Education, 12,* 683-695.

Thompson, B. (2008). How college freshmen communicate student academic support: a grounded theory study [Electronic version]. *Communication Education, 57,* 123-144.

Weisenberg, F., & Stacey, E. (2005). Reflections on teaching and learning online: Quality program design, delivery and support issues from a cross-global perspective [Electronic version]. *Distance Education, 26,* 385-404.

Wimshurst, K., Wortley, R., Bates, M., & Allard, T. (2006). The impact of institutional factors on student academic results: implications for 'quality' in universities [Electronic version]. *Higher Education Research & Development, 25,* 131-145.

Zeegers, P. (2001). Approaches to learning in science: A longitudinal study [Electronic version]. *British Journal of Educational Psychology, 71,* 115-132.

Zhao, C., & Kuh, G. D. (2004). Adding value: Learning communities and student engagement [Electronic version]. *Research in Higher Education, 45,* 115-138.