Spring 4-2021

The Impact of Personality Characteristics on Online Academic Experience and Performance

Arian M. Shiell
Brescia University College, ashiell3@uwo.ca

The Impact of Personality Characteristics on Online Academic Experience and Performance

Arian M. Shiell

Honours Specialization Psychology Thesis

School of Behavioural and Social Sciences

Brescia University College

April 12, 2021

Thesis Advisor: Dr. John Mitchell

Abstract

The literature has demonstrated clear relationships between personality traits, locus of control, academic self-efficacy, and academic achievement. However, past research has seldom investigated personality characteristics and subjective measures of academic success. The current study investigated how personality impacted the academic experience and grades of university students using an online self-report questionnaire. All measures of personality traits, academic self-efficacy, and locus of control were correlated with measures of a successful online academic experience. Academic self-efficacy was the only significant predictor of life satisfaction, effort regulation, and course value/enjoyment, while locus of control was the single predictor of perceived control over learning. Openness, academic self-efficacy, and locus of control were correlated with students' final grades, and academic self-efficacy was the only significant predictor. These findings are generally consistent with prior research and suggest that individual differences significantly impact online grades and educational experiences.

Keywords: Five Factor Model, academic self-efficacy, locus of control, life satisfaction, control of learning beliefs, effort regulation, perceived course value, course enjoyment

The Impact of Personality Characteristics on Online Academic Experience and Performance

With the increase of online education due to the Covid-19 pandemic, it is vital to understand factors that impact online learning success. Atchley et al. (2013) found that significantly fewer students completed online courses than in-person courses, and those who finished online courses were more likely to receive a failing grade than those in traditional classrooms. Moreover, there is a significant difference in online course completion when broken down by discipline— Psychology students fared poorer than students in all other fields (Atchley et al., 2013). Further research is needed to understand the student experience and establish factors that bolster online academic success and avoid the adverse outcomes mentioned above.

To better understand the experience of students enrolled in online education, it is essential to establish the role of personal characteristics on different academic success measures (Atchley et al., 2013). Many factors influence academic success, including several of the personality traits identified by the Five-Factor Model (McCrae & Costa, 1987), locus of control, and academic self-efficacy (Alkış & Temizel, 2018; Honicke & Broadbent, 2016; Joo et al., 2013; Schneider & Preckel, 2017; Talsma et al., 2018; Theobald et al., 2018; Yokoyama, 2019). Additionally, measures of academic success should include subjective assessments, such as student life satisfaction, control of learning beliefs, effort regulation, perceived course value, and course enjoyment, as evidenced by past research demonstrating its importance (Evelyn, 2015; Fogarty et al., 2014; Joo et al., 2013; Karaman et al., 2017; Liu et al., 2013; Trapmann et al., 2007; Wach et al., 2016). Student life satisfaction can be assessed by examining students' satisfaction with family, friends, school, their environment, and themselves (Seligson et al., 2003). Control of learning beliefs refers to students' expectations about their ability to control their learning (Pintruch et al., 1993). Effort regulation refers to the students' perception of their

ability to commit to schoolwork regardless of their investment in the material (Pintruch et al., 1991). Perceived course value

McCrae and Costa (1987) proposed a theory of personality, known as 'The Big Five' or the Five-Factor Model, which includes dimensions of conscientiousness, extraversion, neuroticism, agreeableness, and openness. Conscientiousness, opposite on the continuum to non-directiveness, is typified as dutiful or scrupulous. Extraversion, opposite on the continuum to introversion, is defined as sociable and person-oriented. As opposed to emotional stability, neuroticism is associated with being worried and nervous. Agreeableness, compared to antagonism, is described as good-natured and flexible. Openness to experience, rather than close-mindedness, is associated with being imaginative and creative. A significant amount of research has been conducted to connect these personality traits to academic accomplishment.

Conscientiousness has been repeatedly implicated as a significant factor in academic success, both in traditional (Schneider & Preckel, 2017; Theobald et al., 2018; Trapmann et al., 2007) and online education (Alkış & Temizel, 2018; Bahçekapılı & Karaman, 2020; Schniederjans & Kim, 2005). In a meta-analysis conducted by Trapmann et al. (2007) on the impact of personality traits on grades, retention, and satisfaction in a traditional school setting, conscientiousness emerged as the only Big Five trait with a significant positive correlation to college grades. These findings were confirmed in a meta-analysis by Schneider and Preckel (2017), who reported a moderate, positive effect size of conscientiousness on achievement in traditional higher education. Furthermore, these results are consistent across different educational settings: Alkış and Temizel (2018) found that conscientiousness predicted course grades in online and blended educational settings. Conscientiousness has also been associated with measures of success beyond grades. Although research on academic satisfaction is lacking,

Fogarty et al. (2014) found that both adolescents' self- and parent-ratings of industriousness (a component of conscientiousness), feelings about school, and life satisfaction predicted grade point average (GPA) in traditional education. Similarly, Wach et al. (2016) noted that conscientiousness has been associated with job satisfaction in past literature and is likely comparable to academic satisfaction. Compared to other Big Five personality traits, conscientiousness has been most consistently associated with a successful academic experience, and findings on the other traits are less consistent (Alkış & Temizel, 2018; Bahçekapılı & Karaman, 2020; Lin & Overbaugh, 2007; Trapmann et al., 2007).

Research on extraversion's relationship to both traditional and online academic success is inconsistent across studies. For instance, Bahçekapılı and Karaman (2020) investigated the impact of the Big Five personality traits, self-efficacy, and locus of control on GPA in an online school environment. However, there was no meaningful relationship between extraversion and GPA. This agrees with Schniederjans and Kim's (2005) earlier findings, who found no association between extraversion and academic achievement in online school undergraduate students. This appears to be a trend in traditional higher education also; Schneider and Preckel (2017) conducted a meta-analysis and found no significant relationship between extraversion and grades. Trapmann et al. (2007) also reported no association between extraversion and academic performance. While more recent research suggests no association, older studies have demonstrated both positive and negative effects of extraversion on academic achievement (Bahçekapılı & Karaman, 2020; Schneider & Preckel, 2017; Schniederjans & Kim, 2005). Further, extraversion has been weakly positively correlated with job satisfaction; therefore, it might also influence academic satisfaction (Wach et al., 2016). However, Wach et al. (2016) found no such association between extraversion and satisfaction with academic studies. Research

on most of the personality traits, most notably neuroticism, and academic achievement have resulted in inconsistent findings, highlighting a need for further investigation.

Findings on the relationship between neuroticism and academic success is mixed. Past research has demonstrated positive, negative, and no effect of neuroticism on academic performance in traditional school (De Feyter et al., 2012; Schneider & Preckel, 2017). In more recent research, Bahçekapılı and Karaman (2020) found that neuroticism negatively impacted online academic achievement. This mirrors findings from Schniederjans and Kim (2005), who found that emotional stability—the opposite of neuroticism—had a strong, positive correlation with grades. Neuroticism has also been implicated as a reliable predictor of poor work-related performance (De Feyter et al., 2012). Further, neuroticism has been strongly associated with poorer academic, job, and life satisfaction (Trapmann et al., 2007; Wach et al., 2016). This is important because academic and life satisfaction directly impact academic experience (Wach et al., 2016). Aside from conscientiousness, findings linking personality traits like neuroticism and agreeableness to academic success are discordant (Schneider & Preckel, 2017; Trapmann et al., 2007).

Some of the literature concurs that agreeableness is not significantly associated with academic performance in traditional and online schools (Bahçekapılı & Karaman, 2020; Trapmann et al., 2007), while others have found a positive, weak correlation to achievement (Schneider & Preckel, 2017). Similarly, De Feyter et al. (2012) found a significant, positive relationship between agreeableness and academic performance and motivation in in-person education. This finding is consistent with Schniederjans and Kim's (2005) research, which found a significant, positive relationship between agreeableness and grades in online school. Agreeableness does not seem to be related to other measures of a successful academic

experience, notably academic satisfaction (Wach et al., 2016). Contrary to research on agreeableness, studies on openness seem to concur within online and traditional education settings but have contradictory findings across these learning platforms (Schneider & Preckel, 2017; Schniederjans & Kim, 2005; Trapmann et al., 2007).

Research on openness to experience suggests either a positive or not significant impact on academic achievement, depending on the platform (Schneider & Preckel, 2017; Schniederjans & Kim, 2005; Trapmann et al., 2007; Wilcox & Nordstokke, 2019). A recent meta-analysis showed a positive, weak correlation between openness and online academic achievement (Schneider & Preckel, 2017). This was confirmed by Schniederjans and Kim (2005), who also investigated this relationship in online education. However, this finding is not consistent across all educational platforms: in their meta-analysis, Trapmann et al. (2007) concluded there was no significant impact of openness on academic achievement in a traditional learning environment, suggesting there could be a difference between these academic settings. Little research on openness has been done on subjective measures of academic experience, but Wach et al. (2016) reported that openness was not associated with any academic satisfaction measures. However, openness to experience does seem to contribute to academic self-efficacy in high-school students (Wilcox & Nordstokke, 2019). While research on openness seems to be lacking, locus of control is well-founded for its role in achievement in the literature (Findley & Cooper, 1983).

Rotter (1966) published the Locus of Control Scale, which assessed beliefs about whether an individual feels they can control (internal locus of control) or cannot control (external locus of control) the outcomes of their actions. An internal locus of control orientation has been established as a significant correlate of high academic achievement for nearly forty years (Bahçekapılı & Karaman, 2020; Evelyn, 2015; Findley & Cooper, 1983; Joo et al., 2013;

Karaman et al., 2017; Schneider & Preckel, 2017). Schneider and Preckel (2017) found a positive, albeit weak, association between internal locus of control and academic achievement in a traditional education setting. Likewise, Bahçekapılı and Karaman (2020) reported a positive association between internal locus of control and online school GPA. Evelyn (2015) investigated the role of locus of control on the academic experience and found that internal locus of control was correlated with higher perceived control over grades as well as lower perceived stress. This is closely related to findings from Karaman et al. (2017), who established that undergraduate students with an external locus of control reported lower satisfaction with life and higher academic stress. This is consistent with other findings that those with an internal orientation report more satisfaction with their lives (Karaman et al., 2017). Additionally, those enrolled in online school with an internal orientation tend to be more satisfied with their learning (Joo et al., 2013). In their literature review, Joo et al. (2013) highlight that the top students in the Open University of Hong Kong had significantly higher scores for internal locus of control and a higher level of satisfaction with school. Locus of control orientation, similarly to academic self-efficacy, substantially impacts the online academic experience.

Bandura (1997) defined self-efficacy as an individual's beliefs about their ability to reach goals. More recent research on self-efficacy is domain-specific, with academic self-efficacy directly related to academic success (Yokoyama, 2019). Higher academic self-efficacy has been repeatedly implicated in more successful academic experiences (Yokoyama, 2019). Past research has found that academic self-efficacy is significantly associated with academic achievement (Honicke & Broadbent, 2016; Joo et al., 2013; Yokoyama, 2019). Interestingly, Talsma et al. (2018) concluded that rather than self-efficacy improving performance, past performance seems to improve academic self-efficacy. This finding was only true of adults, which stands to reason

since adults have more experience with academic performance than children. Over time, it appears that high academic performance improves academic self-efficacy and vice versa (Talsma et al., 2018). Academic self-efficacy is specifically correlated to academic performance and learner satisfaction in online school (Bahçekapılı & S. Karaman, 2020; Joo et al., 2013). Likewise, Evelyn (2015) found that higher self-efficacy was associated with lower overall stress, more perceived control over grades, and higher life satisfaction. These findings contribute to the understanding of the academic experience.

More research must be done on personality characteristics and their impact on online academic success measures, especially beyond GPA. Specifically, there is a need for more research on the effects of personality characteristics on the online academic experience (Bahçekapılı & Karaman, 2015)—some differences were found between traditional and online school while investigating the role of personality in academic achievement, especially for openness to experience (Schneider & Preckel, 2017; Schniederjans & Kim, 2005; Trapmann et al., 2007). Since openness is associated with grades in online but not in-person education, more research must be conducted on personality and online academic achievement. Generally, research on the impact of personality traits on GPA, aside from conscientiousness, is inconsistent across online and traditional educational settings and requires further investigation. Moreover, most of the academic success research involving the Big Five failed to investigate multiple measures of academic success—there are limited findings on criteria beyond grades, such as satisfaction (Trapmann et al., 2007; Wach et al., 2016). Trapmann et al. (2007) found an association between GPA and several other academic success measures, such as satisfaction, but noted that alternative criteria for academic success were rarely assessed in the literature. Additionally, Yokoyama (2018) reported that there were not enough findings to conduct a meta-

analysis on academic self-efficacy's relationship to grades in an online school environment. More research on academic self-efficacy and further measures of a successful educational experience is needed since findings are limited in this area (Bahçekapılı & S. Karaman, 2020; Joo et al., 2013; Evelyn, 2015). Finally, little is known about the relationship between personality characteristics and feelings of mastery, perceived control over learning, and effort regulation. These alternative criteria for academic success and their association with personality have been overlooked, despite their clear relationship to academic achievement (Liu et al., 2013).

The current study used a self-reported online questionnaire to investigate how students' personality characteristics impacted their course grade and their academic experiences in terms of life satisfaction, control of learning beliefs, effort regulation, perceived course value, and course enjoyment. It was hypothesized that there would be a positive relationship between conscientiousness and students' academic experiences and final grades, openness and students' academic experiences and final grades, a negative relationship between neuroticism and students' academic experiences and final grades, a positive relationship between locus of control and students' academic experiences and final grades, and a positive relationship between academic self-efficacy and students' academic experiences and final grades. More precisely, it was predicted that high scores of conscientiousness and openness on the Interpersonal Adjective Scales-Revised: Big Five Version (IASR—B5; Trapnell & Wiggins, 1990) would be associated with higher grades, scores of life satisfaction on the Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS; Seligson et al., 2003), control of learning beliefs and effort regulation on the Motivated Strategies for Learning Questionnaire (MSLQ; Pintruch et al., 1991), and the perceived course value/enjoyment questionnaire composed for this study. Secondly, it was predicted that high neuroticism scores on the IASR—B5 would be associated

with lower grades, scores on the BMSLSS, MSLQ, and course value/enjoyment questionnaire. Third, it is expected that a higher internal locus of control score on the LOC scale (Rotter, 1966) would be associated with higher grades, scores on the BMSLSS, MSLQ, and course value/enjoyment questionnaire. Finally, it is expected that a higher self-efficacy for learning score on the MSLQ would be associated with higher grades, scores on the BMSLSS, MSLQ, and course value/enjoyment questionnaire.

Method

Participants

Participants (n = 76) were female undergraduate students enrolled in Psychology 1015b course at Brescia University College. The mean age was 19.7 (SD = 2.69) and all participants were 18—25-years old. Students enrolled in this course could sign up for the study, in exchange for course credit, through Brescia's psychology research participation system, Sona.

Materials

Interpersonal Adjective Scales (IASR—B5; Trapnell & Wiggins, 1990) consists of 50 adjectives which assess the Big Five personality traits—extroversion, agreeableness, conscientiousness, neuroticism, and openness to experience. This self-report questionnaire uses an 8-point Likert scale where participants rate how accurately each adjective describes them ranging from 'extremely inaccurate' to 'extremely accurate'.

The Locus of Control Scale (LOC; Rotter, 1966) is a self-report questionnaire consisting of 14 items, where the individual chooses either A or B, associated with either internal or external locus of control. The responses were scored using overall average which ranged between 1 and 2, where 1 indicates a tendency toward external locus of control and 2 indicates internal locus of control.

The Brief Multidimensional Students' Life Satisfaction Scale (BMLSS; Seligson et al., 2003) is a 5-item self-report questionnaire on life satisfaction, using a 7-point Likert scale where participants report their life satisfaction ranging from 'terrible' to 'delighted'.

The control of learning beliefs, self-efficacy for learning, and effort regulation subscales of the Motivated Strategies for Learning Questionnaire (MSLQ; Pintruch et al., 1991) were used. Self-efficacy for learning contains 8 items, and control of learning beliefs and effort regulation have 4 items each. Items are scored on a 7-point Likert scale, where participants rate their control of learning beliefs, self-efficacy for learning, and effort regulation ranging from 'not at all like me' to 'very true of me'.

Course enjoyment and perceived course value were assessed with a 6-item questionnaire composed for this study, using a 7-point Likert scale where participants rated their course satisfaction, how valuable they thought the material was, and their likelihood of taking another Psychology course from 'strongly disagree' to 'strongly agree' (see Appendix A).

Procedure

Participants were provided with a link from Sona to Qualtrics, where they saw the Letter of Information and gave informed consent by continuing on to the study. Participants filled out one survey comprised of seven blocks in the following order: Demographic information, IASR—B5, LOC, BMLSS, MSLQ, course enjoyment/perceived course value, and self-reported grade in Psychology 1010a. Participants were debriefed immediately following the questionnaire.

Results

Two sets of analyses were performed to address the hypotheses. A correlational analysis was conducted to assess the relationships between personality characteristics and academic success measures. Linear regression and multiple linear regression analyses were conducted to

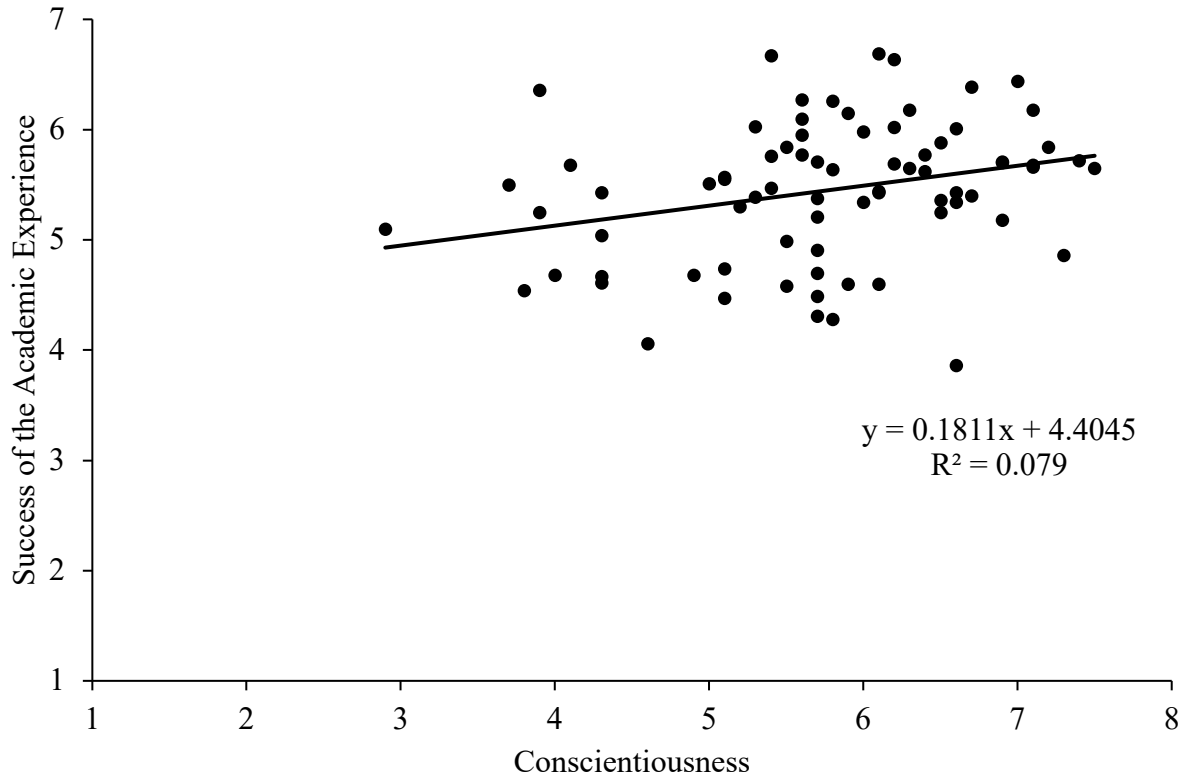
establish significant predictors of participants' final grade in Psychology 1010a and the success of their academic experience, an aggregate measure which includes life satisfaction, control of learning beliefs, effort regulation, perceived course value, and course enjoyment; these measures were equally weighted and compiled into single averages.

Pearson Correlation Analysis

There was a weak, positive, significant correlation between conscientiousness ($M = 5.74$, $SD = 0.99$) and success of the academic experience ($M = 5.44$, $SD = 0.64$), $r(74) = .28$, $p = .007$, $R^2 = .08$, one-tailed. The higher the participants' conscientiousness score, the more successful their academic experience (see Figure 1). There was a weak, positive correlation between openness ($M = 5.76$, $SD = 0.92$) and success of the academic experience that was significant, $r(74) = .32$, $p = .003$, $R^2 = .10$, one-tailed. The higher the participants' openness score, the more successful their academic experience (see Figure 2). There was a weak, negative correlation between neuroticism ($M = 4.56$, $SD = 0.76$) and success of the academic experience that was significant, $r(74) = -.28$, $p = .007$, $R^2 = .08$, one-tailed. The lower the participants' neuroticism score, the more successful their academic experience (see Figure 3). There were significant correlations between extraversion ($M = 4.27$, $SD = 0.89$), agreeableness ($M = 6.43$, $SD = 1.00$), and success of the academic experience. The correlation between extraversion and success of the academic experience was positive and significant, but weak, $r(74) = .22$, $p = .001$, $R^2 = .05$, one-tailed. This indicates that as extraversion increased, the success of their academic experience increased a small amount. Similarly, there was a weak, positive, and significant relationship between agreeableness and success of the academic experience, $r(74) = .29$, $p = .006$, $R^2 = .08$, one-tailed, which means that as agreeableness increased, the success of their academic experience increased a minuscule amount.

Figure 1

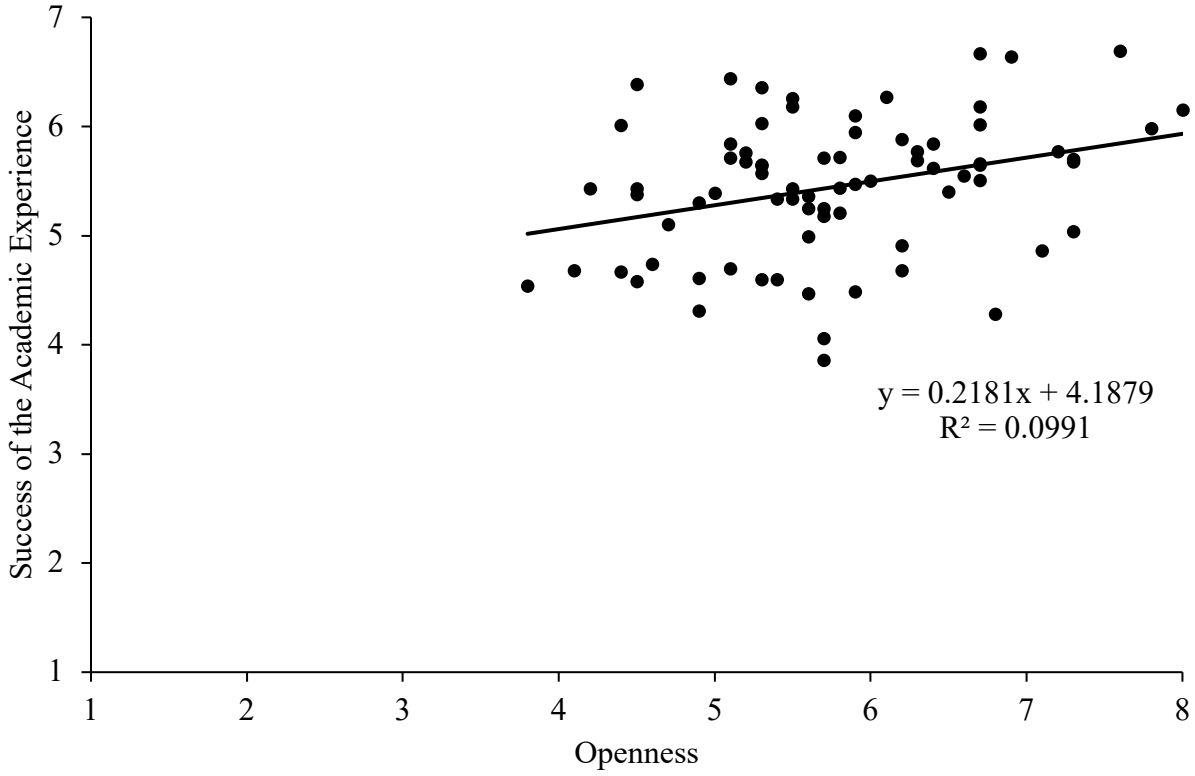
Conscientiousness and Success of the Academic Experience



Note. Scatterplot depicting a very weak, positive, and significant correlation between conscientiousness and success of the academic experience.

Figure 2

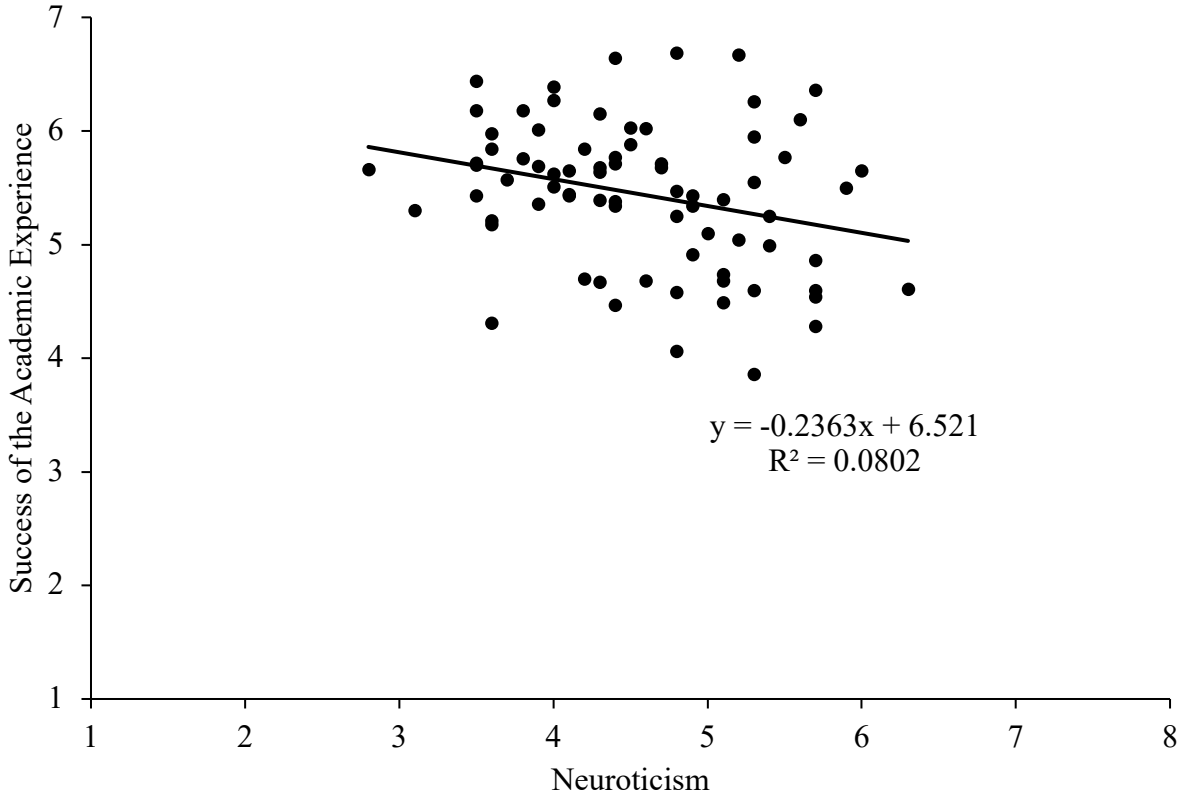
Openness and Success of the Academic Experience



Note. Scatterplot depicting a weak, positive, and significant correlation between openness and success of the academic experience.

Figure 3

Neuroticism and Success of the Academic Experience



Note. Scatterplot depicting a very weak, negative, and significant correlation between neuroticism and success of the academic experience.

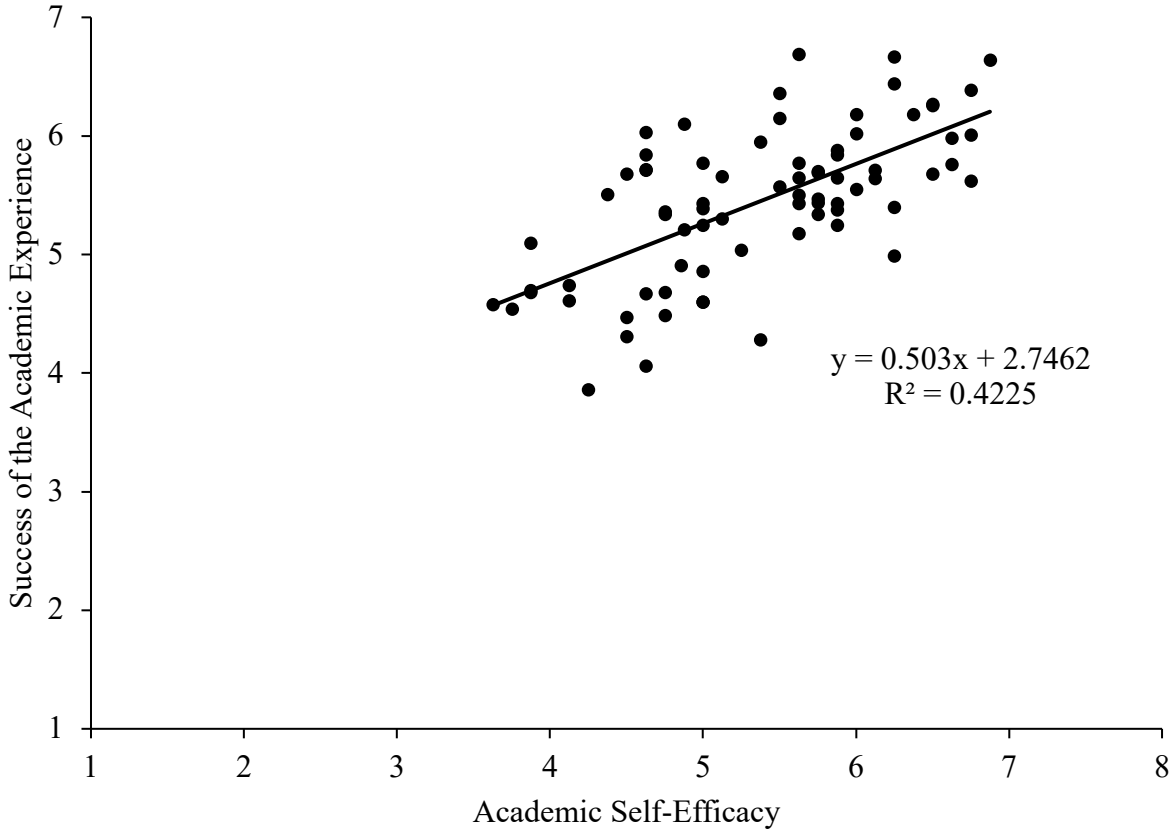
There was a moderate, positive correlation between academic self-efficacy ($M = 5.36$, $SD = 0.82$) and success of the academic experience that was significant, $r(74) = .65$, $p < .001$, $R^2 = .42$, one-tailed. The higher the participants' self-efficacy for learning, the more successful their academic experience (see Figure 4). There was a weak, positive correlation between locus of control ($M = 1.43$, $SD = 0.18$) and success of the academic experience that was significant, $r(74) = .36$, $p < .001$, $R^2 = .13$, one-tailed. The higher the participants' internal locus of control score, the more successful their academic experience (see Figure 5).

There was a weak, positive, and significant correlation between openness and final grade in Psychology 1010a ($M = 76.28$, $SD = 10.16$), $r(51) = .29$, $p = .017$, $R^2 = .08$, one-tailed, indicating that as participants' openness score increased, their final grade increased a small amount (see Figure 6). There was a weak, positive, and significant correlation between academic self-efficacy and final grade ($M = 76.28$, $SD = 10.16$), $r(51) = .31$, $p = .013$, $R^2 = .10$, one-tailed, which indicates that as participants' self-efficacy increased, so did their grade in the course (see Figure 7). There was a weak, positive, and significant relationship between locus of control and course grade, $r(51) = .24$, $p = .046$, $R^2 = .06$, one-tailed. The higher the participants' internal locus of control score, the higher their final grade (see Figure 8). There were no statistically significant correlations between any other personality characteristics, success of the academic experience, and final grade, p's $> .05$.

A correlational analysis was performed between the individual academic success measures and personality characteristics. Table 1 displays the correlations between personality traits, locus of control, academic self-efficacy, and the individual academic success measures which include life satisfaction, control of learning beliefs, effort regulation, perceived course value, and course enjoyment.

Figure 4

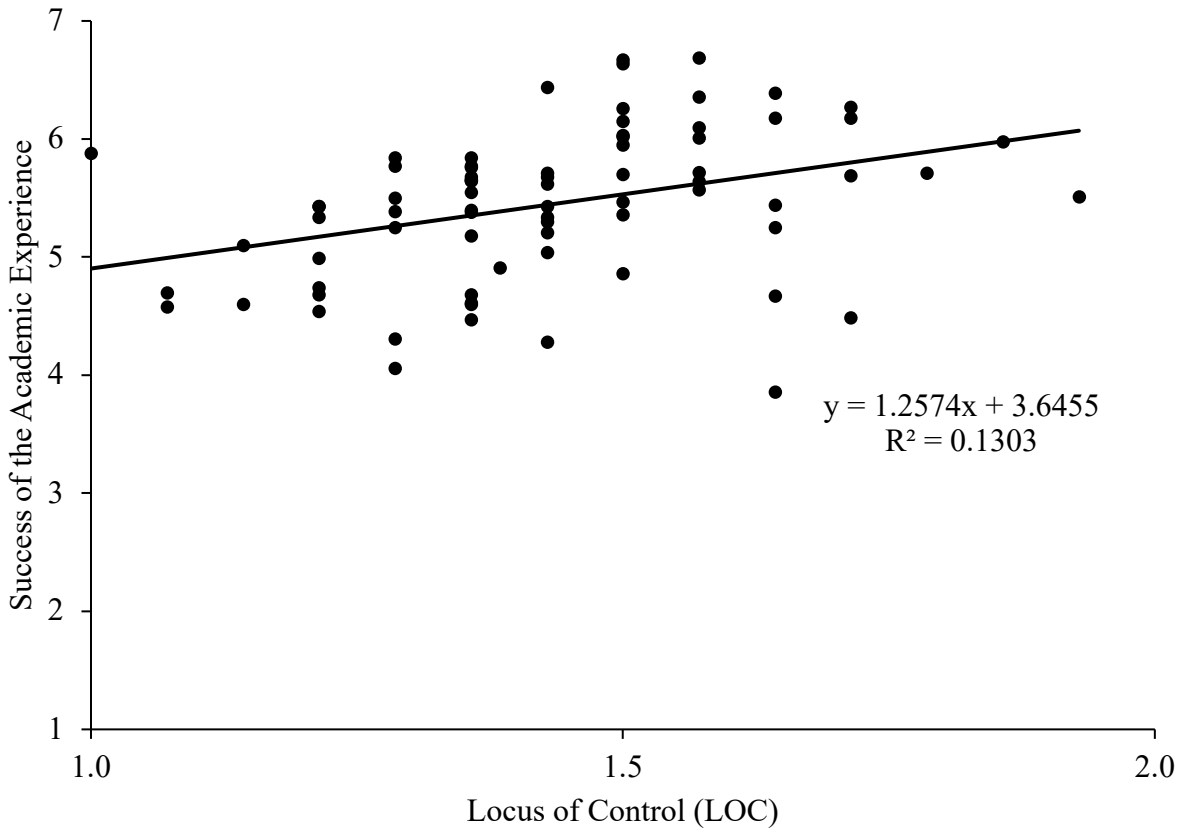
Academic Self-Efficacy and Success of the Academic Experience



Note. Scatterplot depicting a moderate, positive, and significant relationship between academic self-efficacy and success of the academic experience.

Figure 5

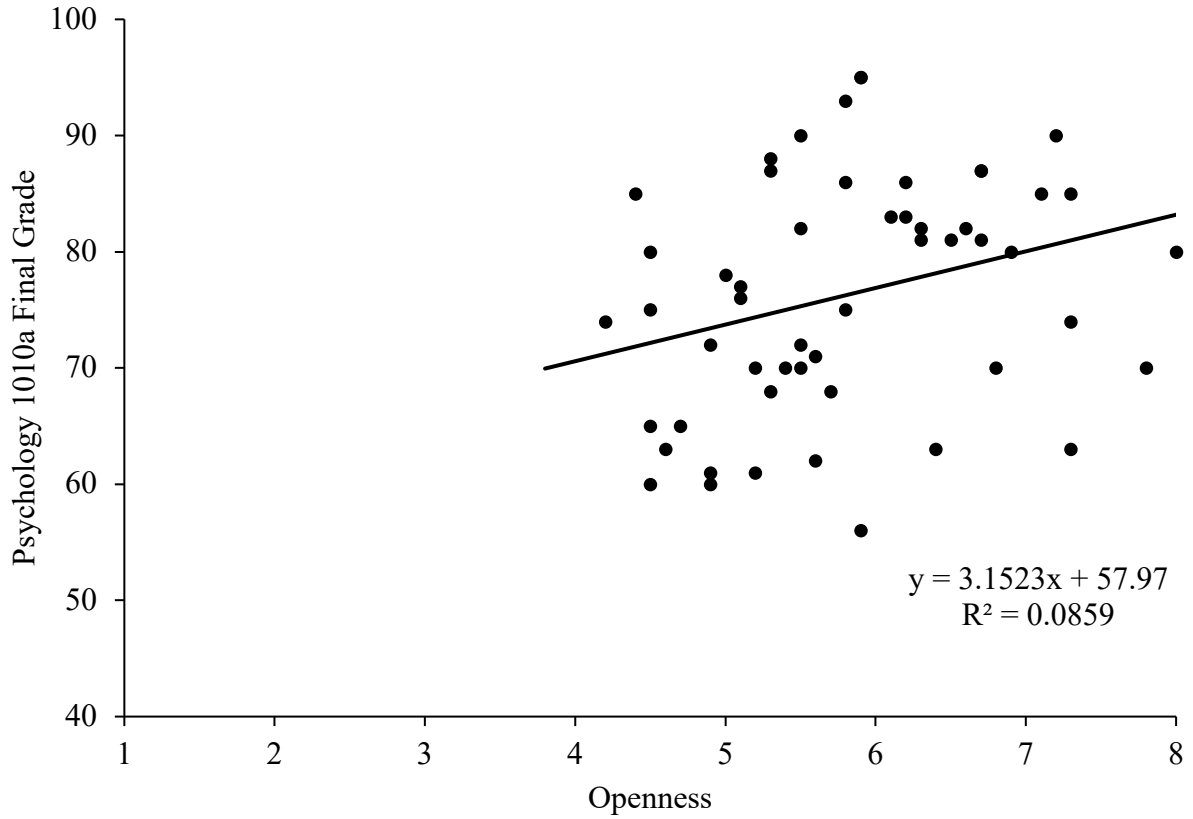
Locus of Control and Success of the Academic Experience



Note. Scatterplot depicting a weak, positive, and significant relationship between locus of control and success of the academic experience. For the LOC scale, 1 indicates a tendency toward external locus of control and 2 indicates internal locus of control. Since the smallest possible score on the LOC scale was 1, the graph scale was altered to improve the readability of the data.

Figure 6

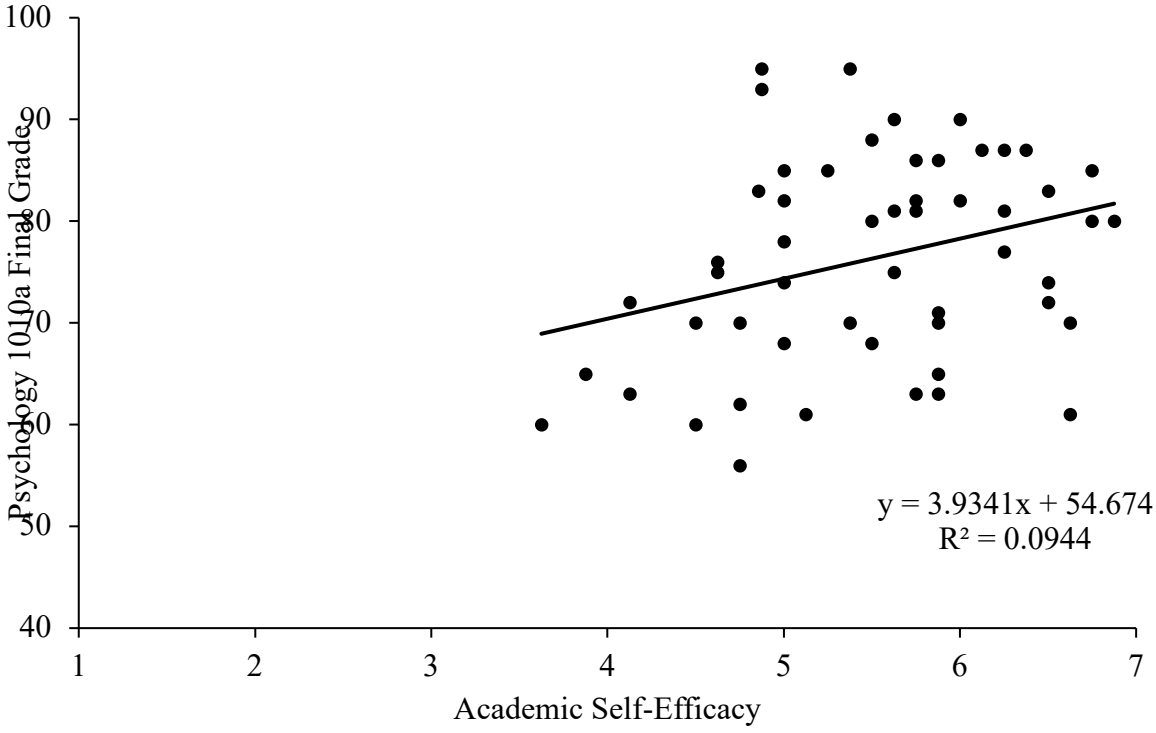
Openness and Final Grade in Psychology 1010a



Note. Scatterplot depicting a weak, positive, and significant relationship between openness and final grade in psychology 1010a. Since any grade below 40% is not recorded in academic records, the scale for final grade was changed to improve the readability of the data.

Figure 7

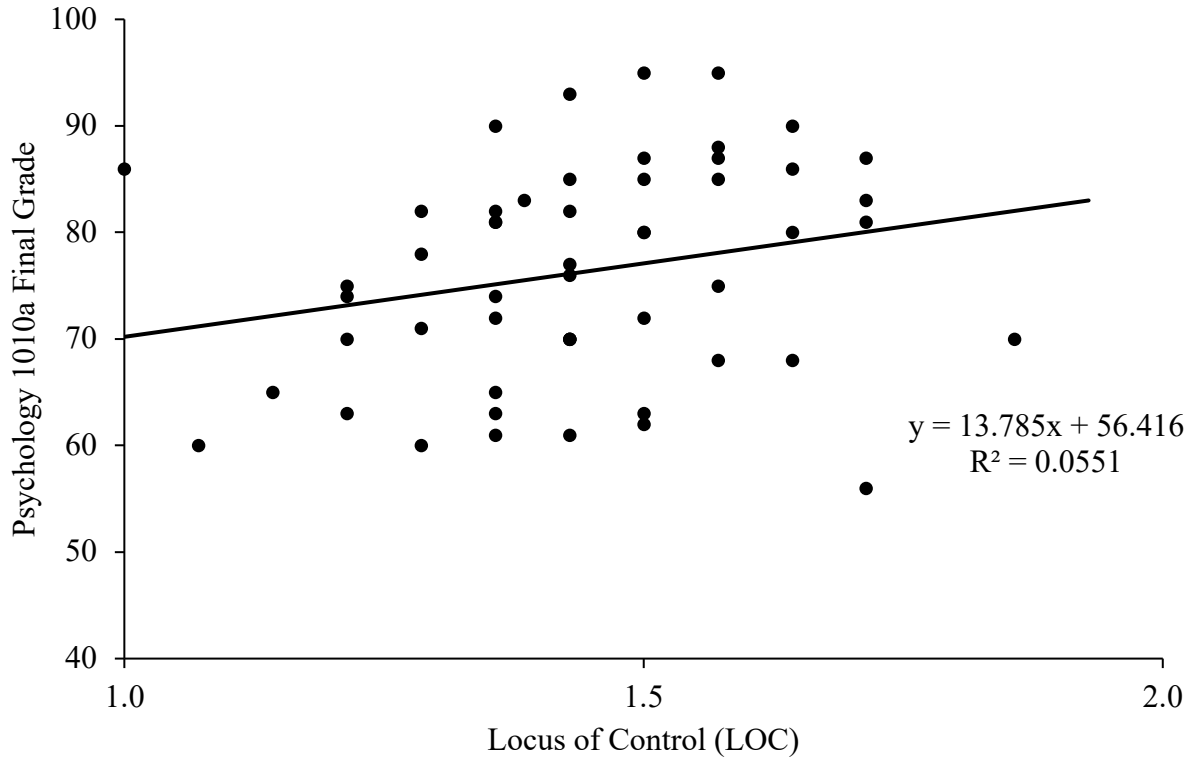
Academic Self-Efficacy and Final Grade in Psychology 1010a



Note. Scatterplot depicting a weak, positive, and significant relationship between academic self-efficacy and final grade in psychology 1010a. Since any grade below 40% is not documented in academic records, the scale for final grade was changed improve the readability of the data.

Figure 8

Locus of Control and Final Grade in Psychology 1010a



Note. Scatterplot depicting a weak, positive, and significant relationship between locus of control and final grade in psychology 1010a. For the LOC scale, 1 indicates a tendency toward external locus of control and 2 indicates internal locus of control. Since the smallest possible score on the LOC scale was 1, the graph scale was altered to make the data easier to understand. Any grade below 40% is not documented in academic records, so the scale for final grade was changed to improve the readability of the data.

Table 1

Correlations Between Personality Characteristics and Measures of a Successful Academic Experience

Personality Characteristics	Measures of a Successful Academic Experience				
	Life Satisfaction	Control of Learning Beliefs	Effort Regulation	Course Value	Course Enjoyment
Extraversion	.18	.08	.13	.21*	.18
Agreeableness	.21*	.06	.26*	.35**	.09
Conscientiousness	.20*	.08	.33**	.21*	.08
Neuroticism	-.22*	-.26*	-.26*	-.22*	.00
Openness	.03	.09	.38***	.28**	.26*
Academic Self-Efficacy	.40***	.25*	.65***	.51***	.37***
Locus of Control	.20*	.29**	.30**	.33**	.13

Note. One-tailed test.

* $p < .05$

** $p < .01$

*** $p < .001$

The correlations between final grade and individual measures of academic success were assessed. Success of the academic experience had a weak, positive, and significant relationship with final grade, $r(51) = .43$, $p = .001$, $R^2 = .18$, one-tailed, meaning that as participants reported a more successful academic experience, their final grade increased. There was a moderate, positive, and significant correlation between effort regulation ($M = 5.18$, $SD = 1.19$) and final grade, $r(51) = .52$, $p < .001$, $R^2 = .27$, one-tailed. This indicates that as effort regulation increased, so did participants' final grades. There was a weak, positive, and significant correlation between perceived course value ($M = 5.68$, $SD = 0.81$) and final grade, $r(51) = .29$, $p = .017$, $R^2 = .08$, one-tailed. This means that as participants perceived the course content as more valuable, their final grade increased. Finally, there was a weak, positive correlation between course enjoyment ($M = 5.93$, $SD = 0.88$) and final grade that was significant, $r(51) = .27$, $p = .025$, $R^2 = .07$, one-tailed. This indicates that as participants enjoyed the course more, their final grade increased.

Regression Analyses

Linear regression analyses were conducted to establish significant predictors of final grade in Psychology 1010a. Academic self-efficacy, $\beta = .31$, $p = .025$, accounted for 9.4% of the variance in Psychology 1010a final grade, $R^2 = .09$, $F(1, 51) = 5.32$, $p = .025$.

Multiple linear regression analyses were conducted to establish significant predictors of participants' academic experience. Academic self-efficacy, locus of control, and conscientiousness accounted for 45% of the variance in overall success of the academic experience, $R^2 = .45$, $F(3, 72) = 19.39$, $p < .001$. Academic self-efficacy, $\beta = .61$, $p < .001$, was the only significant predictor of success of the academic experience, while locus of control, $\beta = .16$, $p = .08$, and conscientiousness, $\beta = -.03$, $p = .80$ were not significant predictors in the model.

Academic self-efficacy and openness accounted for 15% of the variance in course enjoyment, $R^2 = .15$, $F(2, 72) = 6.42$, $p = .003$. Academic self-efficacy, $\beta = .31$, $p = .009$, was the only significant predictor of course enjoyment, while openness, $\beta = .14$, $p = .25$, was not significant. Academic self-efficacy, locus of control, and conscientiousness accounted for 29.5% of the variance in perceived course value, $R^2 = .295$, $F(3, 72) = 10.04$, $p < .001$. Academic self-efficacy, $\beta = .47$, $p < .001$, was the only significant predictor of course value, while locus of control, $\beta = .18$, $p = .089$, and conscientiousness, $\beta = -.03$, $p = .771$, were not significant. Academic self-efficacy, locus of control, and openness accounted for 44% of the variance in effort regulation, $R^2 = .44$, $F(3, 72) = 18.95$, $p < .001$. Academic self-efficacy, $\beta = .57$, $p < .001$, was the only significant predictor of effort regulation, while locus of control, $\beta = .07$, $p = .461$, and openness, $\beta = .14$, $p = .164$, were not significant. Academic self-efficacy, locus of control, and neuroticism accounted for 18% of the variance in life satisfaction, $R^2 = .18$, $F(3, 72) = 18.95$, $p = .002$. Academic self-efficacy, $\beta = .35$, $p = .003$, was the only significant predictor of life satisfaction, while locus of control, $\beta = .06$, $p = .634$, and neuroticism, $\beta = -.13$, $p = .242$, were not significant. Locus of control and neuroticism accounted for 13% of the variance in control of learning beliefs, $R^2 = .13$, $F(3, 72) = 18.95$, $p = .007$. Locus of control, $\beta = .24$, $p = .033$, was a significant predictor of control of learning beliefs, while neuroticism, $\beta = -.21$, $p = .068$, was not significant.

Discussion

Consistent with the hypotheses, there were significant correlations with the personality traits conscientiousness and openness and success of the academic experience. There was also a significant relationship between neuroticism and the success of students' academic experience. Unexpectedly, there were associations between extraversion, agreeableness, and success of the

academic experience. Expectedly, there was an association between locus of control and success of the academic experience. Academic self-efficacy and success of the academic experience had a significant relationship, as predicted. Notably, academic self-efficacy was the only significant predictor of a successful academic experience.

Contrary to the hypotheses, there was no association between conscientiousness and final grade in Psychology 1010a. As expected, there was a correlation between openness and final grades. Expectedly, there were no relationships between extraversion, agreeableness, and final grades. As anticipated, academic self-efficacy and locus of control both had significant relationships to final grades in Psychology 1010a. Academic self-efficacy was the only significant predictor of final grade.

Although some personality characteristics were not directly associated with final grades as expected, these characteristics were correlated to measures of a successful academic experience that demonstrated a strong association with grades. For instance, conscientiousness was not associated with grades, but was associated with effort regulation and perceived course value, which both correlate with course grade (see Table 1). This suggests that effort regulation and perceived course value are assessing different components of the academic experience than grades and appears to be tied more closely to conscientiousness.

The relationship between conscientiousness and success of the academic experience is consistent with previous literature tying conscientiousness to feelings about school, life satisfaction, and job satisfaction (Fogarty et al., 2014; Wach et al., 2016). However, the association between conscientiousness and final grade did not concur with previous research (Alkış & Temizel, 2018; Bahçekapılı & Karaman, 2020; Schniederjans & Kim, 2005). Conscientiousness was also not a significant predictor of grades, as it was in research by Alkış

and Temizel (2018) and Schniederjans and Kim (2005). It is suspected that this difference could be due to the measurement used; both studies were able to access grades directly, while the current study relied on a self-report measure.

Though there is limited research linking openness to measures of academic success beyond grades, the present findings do not agree with those of Wach et al. (2016), who reported no association between openness and academic satisfaction. However, this could be due to the fact that Wach et al. (2016) used participants enrolled in in-person school, whereas the current study utilized students in online education. Differences in academic achievement between online and traditional education have been well-established, especially for openness, and thus may impact subjective measures of academic experience (Schneider & Preckel, 2017; Schniederjans & Kim, 2005; Trapmann et al., 2007). The correlation between openness to experience and final grade was consistent with some previous findings (Schneider & Preckel, 2017; Schniederjans & Kim, 2005) but not others (Trapmann et al., 2007). This suggests that people who score high in openness may report more favourable academic experiences and achieve higher grades in online school; however, more research must be conducted since past research findings are mixed (Schneider & Preckel, 2017; Schniederjans & Kim, 2005; Trapmann et al., 2007). Since many students experienced online education for the first time due to COVID-19 measures, it stands to reason that those who are more open to new experiences, rather than those who are not, would fare better.

Present findings on neuroticism and success of the academic experience, specifically significant the relationship between neuroticism and life satisfaction, are consistent with the literature, which generally found high scores of neuroticism to correlate strongly with poorer academic and life satisfaction (Trapmann et al., 2007; Wach et al., 2016). This makes intuitive

sense since those high in neuroticism are more likely to experience negative affects and respond more negatively to stress, both of which can influence satisfaction with life and school (Widiger & Oltmanns, 2017). However, the current findings were not consistent with the literature linking high scores of neuroticism and low academic performance (Bahçekapılı & Karaman, 2020; Schniederjans & Kim, 2005). Since Bahçekapılı and Karaman (2020) and Schniederjans and Kim (2005) had access to official grades and the current study did not, this could have influenced findings and consequently affected the current study's congruence with past findings.

While the present study found that extraversion was correlated with a more successful academic experience, it was not correlated with course enjoyment, which is consistent with findings from Wach et al. (2016), who reported no association between extraversion and academic satisfaction. Extraversion was also not associated with final grades, which is consistent with more recent literature (Bahçekapılı & Karaman, 2020; Schneider & Preckel, 2017; Schniederjans & Kim, 2005). The current findings, along with past research, suggest that extraversion is not associated with course enjoyment or grades but is associated with other measures of participants' academic experience.

In the current study, agreeableness was associated with life satisfaction, effort regulation, and perceived course value (see Table 1), but not course enjoyment, which is congruent with findings from Wach et al. (2016). Agreeableness and final grade in Psychology 1010a were not related, and these findings are accordant with some past research (Bahçekapılı & Karaman, 2020; Trapmann et al., 2007) but not all (Schneider & Preckel, 2017). More research is needed to determine if agreeableness affects subjective assessments of students' academic experiences or grades.

Academic self-efficacy consistently had the strongest relationship to measures of a successful academic experience and final grades in Psychology 1010a and was often the strongest or only significant predictor in regression analyses. This is consistent with the literature tying self-efficacy to academic performance (Honicke & Broadbent, 2016; Joo et al., 2013; Yokoyama, 2019). It is also consistent with findings that academic self-efficacy is associated with learner satisfaction, perceived control over grades, and higher life satisfaction (Bahçekapılı & S. Karaman, 2020; Evelyn, 2015; Joo et al., 2013). Taken together, the current study and past literature demonstrate a strong relationship between academic self-efficacy and academic success, including subjective measures.

An internal locus of control was associated with a more successful academic experience, specifically in terms of life satisfaction, control of learning beliefs, effort regulation, and perceived course value. This is consistent with previous findings that locus of control was linked to perceived control over grades, life satisfaction, and satisfaction with learning (Evelyn, 2015; Joo et al., 2013; Karaman et al., 2017). In the current study, locus of control was also associated with final grade in Psychology 1010a, which agrees with the literature (Bahçekapılı and Karaman, 2020; Findley & Cooper, 1983; Schneider & Preckel, 2017). These findings suggest that having an internal locus of control positively affects academic achievement, and overall, the educational experience.

This is one of few studies that investigate personality, locus of control, and academic self-efficacy together (e.g., Bahçekapılı & Karaman, 2020), as well as use multiple subjective measures of a successful academic experience. This is one of few studies to investigate academic self-efficacy and multiple alternative criteria for academic success, which is unfortunate given that the present findings indicate its apparent significance. The present study was the only one

that could be identified that investigates the relationship between personality characteristics and perceived control over learning, feelings of mastery, and effort regulation.

Official records could not be obtained, and thus this study relied on self-reported final grades. Additionally, there were significantly fewer responses in the self-reported final grade section of the questionnaire ($n = 53$). It is suspected that this could have affected results, especially in instances where the results were not consistent with well-established findings in the literature.

This research area could be strengthened further by exploring the relationship between personality characteristics, measures of a successful academic experience, and academic performance in an online compared to a traditional educational setting. More generally, research on academic self-efficacy and further measures of a successful educational experience is needed since findings are limited, especially given the significance demonstrated in the current study. Future research should also investigate the nature of the relationship between academic self-efficacy and subjective measures of academic success since past research has demonstrated that rather than academic self-efficacy improving grades, past performance improved self-efficacy for learning (Talsma et al., 2018).

Personality traits as defined by McCrae and Costa's (1987) Five Factor Model, academic self-efficacy, and locus of control were all associated with alternative criteria for academic success, contrary to some older findings. Academic self-efficacy was the only significant predictor of life satisfaction, effort regulation, perceived course value, and course enjoyment, while locus of control was the single predictor of perceived control over learning. Openness, academic self-efficacy, and locus of control were correlated with students' final grades in Psychology 1010a, with academic self-efficacy as the only significant predictor. These findings

suggest that individual differences have a significant, sometimes negative, impact on online academic achievement and educational experiences. Research is sorely lacking, and it is necessary to understand this relationship more comprehensively and its implications for students and academic institutions.

References

Alkış, N. & Temizel, T. T. (2018). The impact of motivation and personality on academic performance in online and blended learning environments. *Educational Technology & Society, 21*(3), 35–47. https://www.semanticscholar.org/paper/The-Impact-of-Motivation-and-Personality-on-in-and-Alkis-Taskaya-Temizel/ebd8ff1f23a71a84e88c9199b8edb7e985bed0bd

Atchley, T., Wingenbach, G., & Akers, C. (2013). Comparison of course completion and student performance through online and traditional courses. *International Review of Research in Open and Distance Learning*, *14*(4), 104–116. https://doi.org/10.19173/irrodl.v14i4.1461

Bandura, A. (1997). *Self-efficacy: The exercise of control.* W H Freeman/Times Books/ Henry Holt & Co. https://psycnet.apa.org/record/1997-08589-000

Bahçekapılı, K & Karaman, S. (2020). A path analysis of five-factor personality traits, self efficacy, academic locus of control and academic achievement among online students. *Knowledge Management & e-Learning*, *12*(2), 191–208. https://doi.org/10.34105/j.kmel.2020.12.010

De Feyter, T., Caers, R., Vigna, C., Berings, D. (2012). Unraveling the impact of the big five personality traits on academic performance: The moderating and mediating effects of self-efficacy and academic motivation. *Learning and Individual Differences, 22*(4), 439–448. https://doi.org/10.1016/j.lindif.2012.03.01

Evelyn W. M. (2015). Locus of control, self-efficacy, and the mediating effect of outcome control: Predicting course-level and global outcomes in an academic context. *Anxiety, Stress & Coping, 28*(4), 425–444. https://doi.org/10.1080/10615806.2014.976761

Findley, M. J., & Cooper, H. M. (1983). Locus of control and academic achievement: A

literature review. *Journal of Personality and Social Psychology, 44*(2), 419–427. https://doi.org/10.1037/0022-3514.44.2.419

Fogarty, G. J., Davies, J. E., MacCann, C., & Roberts, R. D. (2014). Self- versus parent-ratings of industriousness, affect, and life satisfaction in relation to academic outcomes. *British Journal of Educational Psychology*, *84*(2), 281–293. https://doi.org/10.1111/bjep.12024

Honicke, T., & Broadbent, J. (2016). The influence of academic self-efficacy on academic performance: A systematic review. *Educational Research Review, 17, 63*–84. https://doi.org/10.1016/j.edurev.2015.11.002

Joo, Y. J., Lim, K. Y., & Kim, J. (2013). Locus of control, self-efficacy, and task value as predictors of learning outcome in an online university context. *Computers & Education, 62*, 149-158. https://doi.org/10.1016/j.compedu.2012.10.027

Karaman, M. A., Nelson, K. M. & Javier, C. V. (2017). The mediation effects of achievement motivation and locus of control between academic stress and life satisfaction in undergraduate students. *British Journal of Guidance & Counselling, 46*(4), 375–384. https://doi.org/10.1080/03069885.2017.1346233

Lin, S. L. & Overbaugh, R. C. (2007). The effect of student choice of online discussion format on tiered achievement and student satisfaction. *Journal of Research on Technology in Education, 39*(4), 399-415. https://doi.org/10.1080/15391523.2007.10782489

Liu, W. C., Wang, C. K., Kee, Y. H., Koh, C., Lim, B. S., & Chua, L. (2013). College students' motivation and learning strategies profiles and academic achievement: a self-determination theory approach. *Educational Psychology*, *34*(3), 338–353. https://doi.org/10.1080/01443410.2013.785067

McCrae, R. R. & Costa, P. T. (1987). Validation of the five-factor model of personality across

Instruments and observers. *Journal of Personality and Social Psychology, 52*(1). 81-90. https://doi.org/10.1037/0022-3514.52.1.81

Pintruch, P. R., Smith, D. A. F., Garcia, T. & McKeachie, W. J. (1991). A manual for the use of the motivated strategies for learning questionnaire (MSLQ) [self-report survey] Michigan: National centre for research to improve postsecondary teaching and learning.

Pintrich, P., Smith, D., Garcia, T., & Mckeachie, W. (1993). Reliability and predictive validity of the motivated strategies for learning questionnaire (MSLQ). Educational and Psychological Measurement, 53(3), 801–813. https://doi.org/10.1177/0013164493053003024

Rotter, J. (1966). Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 80 (Whole No. 609).

Schneider, M., & Preckel, F., (2017). Variables associated with achievement in higher education: A systematic review of meta-analyses. *Psychological Bulletin, 143*(6), 565–600. https://doi.org/10.1037/bul0000098

Schniederjans, M. J., & Kim, E. B. (2005). Relationship of student undergraduate achievement and personality characteristics in a total web-based environment: An empirical study. *Decision Sciences Journal of Innovative Education, 3*(2), 205–221. https://doi.org/10.1111/j.1540-4609.2005.00067.x

Seligson, J. E., Huebner, E. S., & Valois, R. F. (2003). Preliminary validation of the Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS). Social Indicators Research, 61, 12–145.

Talsma, K., Schüza, B., Schwarzerc, R., & Norrisa, K. (2018). I believe, therefore I achieve (and vice versa): A meta-analytic cross-lagged panel analysis of self-efficacy and academic

performance. *Learning and Individual Differences, 61*, 136–150. https://doi.org/10.1016/j.lindif.2017.11.015

Theobald, M., Bellauser, H., & Imhof, M. (2018) Identifying individual differences using log-file analysis: Distributed learning as mediator between conscientiousness and exam grades. *Learning and Individual Differences*, *65*, 112–122., https://doi.org/10.1016/j.lindif.2018.05.019.

Trapmann, S., Hell, B., Hirn, J. W., & Schuler, H. (2007). Meta-analysis of the relationship between the Big Five and academic success at university. Zeitschrift Für Psychologie/Journal of Psychology, 215(2), 132–151. https://doi.org/10.1027/0044-3409.215.2.132

Trapnell, P. D. & Jerry, S. W. (1990). Extension of the Interpersonal Adjective Scales to Include the Big Five Dimensions of Personality. *Journal of Personality and Social Psychology, 59*(4), 781-790. https://doi.org/0022-3514/90/$00.75

Wach, F., Karabach, J., Ruffing, S., Brünken, R., & Spinath, F. M. (2016). University students' satisfaction with their academic studies: Personality and motivation matter. *Frontiers in Psychology*, *7*(55). https://doi.org/10.3389/fpsyg.2016.00055

Widiger, T. & Oltmanns, J. (2017). Neuroticism is a fundamental domain of personality with enormous public health implications. *World Psychiatry*, *16*(2), 144–145. https://doi.org/10.1002/wps.20411

Wilcox, G., & Nordstokke, D. (2019). Predictors of University Student Satisfaction with Life, Academic Self-Efficacy, and Achievement in the First Year. Canadian Journal of Higher Education, 49(1), 104–124. https://doi.org/10.47678/cjhe.v49i1.188230

Yokoyama, S. (2019). Academic self-efficacy and academic performance in online learning: A

mini review. *Frontiers in psychology, 9*(2794). https://doi.org/10.3389/fpsyg.2018.02794

Appendix A

1. I feel confident applying the content learned in Psychology 1010a/1015b outside of the course.

2. I feel confident that I have mastered the material from Psychology 1010a/1015b.

3. The content I learned in Psychology 1010a/1015b is valuable.

4. It is likely that I will use the material learned in Psychology 1010a/1015b outside of the course.

5. I will take another Psychology course after Psychology 1010a/1015b.

6. I enjoyed Psychology 1010a/1015b.