THE RELATIONSHIP BETWEEN STUDENTS' PERSONALITIES AND THEIR PERCEPTION OF ONLINE COURSE EXPERIENCES

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ABSTRACT

Minimal research is available in the literature about the relationship between student personality, based on the Big Five model, and online course experiences, based on the Community of Inquiry framework. It was hypothesized in this study that the five personality factors of extraversion, agreeableness, conscientiousness, neuroticism, and openness correlate collectively or singularly to students' perceptions of social, cognitive, and teaching presence in an online class. The study sample consisted of N = 372 students enrolled in online University Success courses. The majority of students were females (73.7%), and males made up 24.7%. Four (1.1%) students did not report their gender, and one student self-reported as transgender (< 1%). The age range was 18–65 years, with a mean age of 35.58 (SD = 10.58) years. The statistical analyses included bivariate correlation, standard multiple linear regression, and ordinal regression analyses. The findings demonstrated that relationships existed between student personality and online educational experiences, where the personality factors of conscientiousness ($p < .001$) and openness ($p <. 01$) were the two individual predictors that consistently and significantly predicted students' perceptions of social, cognitive, and teaching presences in an online class. The findings from this study add to the emerging literature about the influence of student personality on the way students perceive their educational experiences in online classes.

Keywords: Big Five personality, college students, community of inquiry, online students, university success course

INTRODUCTION

Online learning is a popular delivery method in higher learning institutions, as it offers an opportunity to learn independent of time and distance. The popularity of online classes continues to grow, with 7.1 million students in 2012 taking at least one online course (Allen & Seaman, 2014). Flexibility of schedule and cost benefits are two of the factors that influence students to enroll in online courses; however, some students may become dissatisfied and not succeed in a learning environment where the instructor and student are physically separated, communication is asynchronous, and learning is more self-directed (Bonk, Miyoung, Xiaojing, Shuya, & Feng-Ru, 2015; Ferguson, 2012; Kentnor, 2015; Kruger-Ross & Waters, 2013). The demand for online learning remains high (Allen & Seaman, 2014), which challenges higher education professionals to find new ways to create an environment that facilitates

effective learning by considering students' preferences (Garrison, 2016; Kim, Lee, & Ryu, 2013; Putnam, Ford, & Tancock, 2012; Sebastianelli, Swift, & Tamimi, 2015).

An understanding of students' perceptions of their online course experiences can help instructors and course designers find new ways of engaging and interacting with students (Garrison, 2016). Student personality is one of the factors that may contribute to their perception of the online learning experience. The influence of student personality has been previously studied in regards to interactions with other students and instructors (Terzis, Moridis, & Economides, 2012), to learning strategies (Kokkinos, Kargiotidis, & Markos, 2015), to academic achievement and motivation (Abzug, 2015; Devaraj, Easley, & Crant, 2008; Di Giunta et al., 2013), to the preference for group work (Furnham, Nuygards, & Chamorro-Premuzic, 2013), and to the fear of exploring new situations associated with learning (Furnham et al., 2013; Johnson, Miller, Lynam, & South, 2012).

Despite the many studies of student personality in an academic context, little information exists in the literature regarding the specific relationship between students' personality and their perception of the online learning experience, based on the framework unique to online learning (Diseth, 2013; Garrison, 2016; Lee, 2013; Varela, Cater, & Michel, 2012). The authors in one study found a significant association between conscientiousness and online course impressions, measured by the variables of engagement, value to career, overall evaluation, anxiety/frustration, and preference for online courses (Keller & Karau, 2013). The engagement variable in Keller and Karau's (2013) study is similar, to some extent, to students' perceptions of social, cognitive, and teaching presences. The unique aspect of this study is assessing the relationship between two widely used theoretical models of the Community of Inquiry (CoI) framework and the Big Five personality factors model. The CoI framework was designed to understand students' definitions of excellence and effectiveness in an online learning environment (Akyol & Garrison, 2014), and the Big Five model is a standard model used in personality research (Kim et al., 2013).

Three research questions guided this study. The first research question was, "To what extent do personality factors—extroversion, agreeableness, conscientiousness, neuroticism, and openness—correlate collectively or singularly to social presence in an online class?"

Ha1: Extraversion, agreeableness, neuroticism, conscientiousness, and openness significantly correlate collectively or singularly to social presence in an online class.

The second research question was, "To what extent do personality factors—extroversion, agreeableness, conscientiousness, neuroticism, and openness—correlate collectively or singularly to cognitive presence in an online class?"

Ha2: Extraversion, agreeableness, conscientiousness, neuroticism, and openness significantly correlate collectively or singularly to cognitive presence in an online class.

The third research question was, "To what extent do personality factors—extroversion, agreeableness, conscientiousness, neuroticism, and openness—correlate collectively or singularly to teaching presence in an online class?"

Ha3: Extraversion, agreeableness, conscientiousness, neuroticism, and openness significantly correlate collectively or singularly to teaching presence in an online class.

THEORETICAL FOUNDATIONS

Two theoretical foundations were used in this study: (a) the Big Five model, with its five personality factors of extraversion, agreeableness, conscientiousness, neuroticism, and openness (McCrae & John, 1992), and (b) the CoI framework, represented by the three interdependent elements of social, cognitive, and teaching presences (Garrison, Anderson, & Archer, 2000).

The Big Five Model

Personality can be defined as a set of consistent behavioral patterns that originate within an individual and affect his or her viewpoint on the world (Kirwan & Roumell, 2015). The Big Five model was chosen for this study because it captures behavioral differences (Costa & McCrae, 1995) and has long been used in educational research to explore academic performance and perceptions of the online course experiences in higher learning institutions (Gašević, Adesope, Joksimović, & Kovanović, 2015; Keller & Karau, 2013; Kim, 2012). It is one of the most widely acknowledged frameworks in the field of personality research (Costa & McCrae, 1995) and provides an integrative

and descriptive model for studying personality based on its five dimensions of extraversion, agreeableness, conscientiousness, neuroticism, and openness (John & Srivastava, 1999).

Community of Inquiry Framework

The Community of Inquiry (CoI) framework, proposed by Garrison et al. (2000), provides a model for conceptualizing positive online learning experiences through its three interdependent elements of social, cognitive, and teaching presence:

- Social presence is defined in terms of students' ability to project themselves emotionally as real people in the online class and feel connected with others.
- Cognitive presence refers to students' ability to understand the course concepts and construct knowledge.
- Teaching presence is a multidimensional construct that consists of three categories: (a) design, (b) facilitation, and (c) direct instruction (Garrison, Anderson, & Archer, 2010).

Akyol and Garrison (2014) suggested that students will have the best perception of their online learning experiences with the presence of social, cognitive, and teaching elements within the online classroom. This model provides a foundation for collaborative thinking and activities, open communication, and inquiry-based learning (Cleveland-Innes, 2012). Also, it necessitates new roles for students and instructors, assuming students' take greater responsibility for their learning and instructors maintain students' collaborative engagement in course activities. In this study, the CoI framework was used to assess if any relationships exist between student personality and CoI's three interdependent elements of social, cognitive, and teaching presences in online courses.

METHODOLOGY

A quantitative methodology with a correlational design was utilized in this study to obtain and analyze information about possible correlations among student personality factors and their perceptions of online course experiences. The online platform SurveyMonkey was used to construct the survey by combining the Big Five Inventory-44 and the Community of Inquiry Survey and collecting participant responses.

Participants

Upon the approval from the Institutional Review Board (IRB), a total of 1,305 students enrolled in an introductory online University Success course were invited to participate in the study. The study sample consisted of 372 students who were 73.7% female and 24.7% male; four students (1.1%) did not report their gender, and one student reported to be transgender (< 1%). The mean age was 35.58. The largest percentage of participants, 152 (40.9%), reported being married; 133 (35.8%) were single; 38 (10.2%) lived with a partner; 34 (9.1%) were divorced; ten (2.7%) were separated; four (1.1%) were widowed; and one (< 1%) did not respond. Most of the participants were employed at the time of the study, with 56.5% being employed full time, 12.1% being employed part time, and 6.7% being self-employed. Additionally, 4.6% reported being in the military, 15.6% were unemployed, 0.8% were retired, 3.5% were unable to work, and one student (< 1%) did not respond. The majority of students (n = 229, 61.5%) reported taking zero to one online classes prior to the course used in the study. The academic majors of students were business and management (36%); psychology and counseling (22.5%); nursing and health care (22%); theology and ministry (11.1%); criminal, political, and social sciences (3%); language and communication (2.5%); engineering and technology (2.4%); and performing arts and creative design (0.5%).

University Success is an introductory seven-week course for undergraduates that most online students are required to take. The surveys were administered in the beginning of week 6 of that course, allowing students to build their perception of the course experience and accumulate participation time in the course. The study took place at a Christian university in the southwest region of the United States and lasted for seven weeks, from May 9 to June 20, 2016.

Instruments

The quantitative primary interval data for this study were gathered using two instruments: (a) the Big Five Inventory-44 (BFI-44) and (b) the CoI Survey. The BFI-44 is a well-established psychometric instrument designed to measure the Big Five personality dimensions of extraversion, agreeableness, conscientiousness, neuroticism, and openness (Rammstedt & John, 2007). The CoI Survey instrument measures students' course

experiences through their perceptions of social, cognitive, and teaching presences in an online classroom (Garrison et al., 2000). It was chosen for this study because it is unique to online learning and has been previously used in various studies about student experiences in an online learning environment (deNoyelles, Mannheimer Zydney, & Baiyun, 2014; Lambert & Fisher, 2013; O'Shea, Stone, & Delahunty, 2015; Stover & Pollock, 2014; Tolu, 2013).

Big Five Inventory-44. Student personality was measured using the Big Five Inventory-44 (BFI-44; Rammstedt & John, 2007). The BFI-44 instrument consists of 44 items using a 5-point Likert-scale: 1 = disagree strongly, 2 = disagree a little, 3 = neither agree nor disagree, 4 = agree a little, and 5 = agree strongly (Rammstedt & John, 2007). The BFI-44 instrument was chosen for this study because it is shorter than the 60-item NEO-FFI (Costa & McCrae, 1995) and the 100-item TDA (Goldberg, 1992), it has shown strong validity and reliability results (Rammstedt & John, 2007), and it allows efficient assessment of personality by using short phrases, as opposed to single adjectives, that are prototypical markers of the Big Five dimensions of personality (Benet-Martinez & John, 1998; John, Donahue, & Kentle, 1991; John & Srivastava, 1999). In this study, the coefficient alpha for all five subscales of BFI-44 has shown acceptable internal consistency of > .70, with extraversion measured at .79, agreeableness at .74, conscientiousness at .75, neuroticism at .82, and openness at .70. The mean of coefficient alphas for the five subscales of the BFI instrument was .76.

Community of Inquiry Survey. The CoI Survey instrument was used to measure online course experiences through students' perceptions of social, cognitive, and teaching presences in an online learning environment (Garrison, Cleveland-Innes, & Fung, 2004). The CoI Survey instrument consists of 34 items, using a Likert-type scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. This instrument has been shown to be a reliable and valid measure of online learning experiences (Swan et al., 2008) and is one of the few instruments specifically developed to access students' perceptions of their online course experiences. The results of this study yielded high internal consistencies of .94 for teaching presence, .90 for social presence, and .94 for cognitive presence, with the mean of coefficient alphas of the three CoI subscales of .93

RESULTS

Prior to starting the data analysis, all collected data for N = 434 were cleaned for accuracy. First, the accurate transfer of data was confirmed by comparing the original data in the Survey Monkey platform to the computerized data in the IBM SPSS data file. Next, missing data analysis showed that 55 cases had incomplete surveys; these were deleted, resulting in N = 379. Seven cases were identified as univariate and multivariate outliers, and they were also deleted, resulting in the final sample size of N = 372.

The screening of data for underlying assumptions of multiple linear regression showed that multicollinearity, homoscedasticity, and linearity addictively met the criteria identified by Tabachnick and Fidell (2013). Teaching presence was the only dependent variable that did not meet the assumption of normality. As a result, the researcher decided to add Spearman's rho correlation and ordinal regression analyses to the statistical procedures.

The relationships among the Big Five personality factors (extraversion, agreeableness, conscientiousness, neuroticism, and openness) and the CoI elements (the perception of social, cognitive, and teaching presence) were assessed using bivariate correlation, standard multiple linear regression, and an ordinal regression analyses.

The results of the bivariate correlations for the first research question showed that the personality factors of extroversion, agreeableness, conscientiousness, neuroticism, and openness were positively and significantly correlated to students' perceptions of social presence in an online class. The fifth personality factor, neuroticism, was significantly but negatively correlated to social presence in an online class. See Table 1 for the results of the bivariate correlations.

The multiple correlation (R) for the first model was significant with combined predictor variables to social presence at $R = .344$, $F(5, 366) = 9.805$, $p < .001$. The shared variance was $R^2 = .118$ and adjusted $R^2 = .106$. The post hoc effect size of R^2 was $f^2 = .134$. The post hoc power of the R^2 was power = .999. The two individual predictors of students' perceptions of social presence in an online class

Table 1. Bivariate Correlations, Means, and Standard Deviations for Social Presence and the Big Five Personality Factors

Measure	1	2	3	4	5	6	M	SD
1. Social Presence	_	.13*	.20**	.30**	-.14*	.20**	4.21	.62
2. Extraversion		_	.28**	.30**	-.37**	.41**	3.70	.70
3. Agreeableness			_	.46**	-.45**	.29**	4.29	.53
4. Conscientiousness				_	-.51**	.18**	4.14	.56
5. Neuroticism					_	-.28*	2.60	.80
6. Openness						_	3.72	.53

Note: M = Mean, SD = Standard Deviation, N = 372

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

Table 2. Bivariate Correlations, Means, and Standard Deviations for Cognitive Presence and the Big Five Personality Factors

Measure	1	2	3	4	5	6	M	SD
1. Cognitive Presence	_	.15*	.21**	.30**	-.14*	.27**	4.21	.59
2. Extraversion		_	.28**	.30**	-.37**	.41**	3.70	.70
3. Agreeableness			_	.46**	-.45**	.29**	4.29	.53
4. Conscientiousness				_	-.51**	.18**	4.14	.56
5. Neuroticism					_	-.28**	2.60	.80
6. Openness						_	3.72	.53

Note: M = Mean, SD = Standard Deviation, N = 372

were conscientiousness ($t = 4.790$, $p < .001$) and openness ($t = 2.850$, $p = .005$).

The results of the bivariate correlations for the second research question showed that extraversion, agreeableness, conscientiousness, and openness were positively and significantly correlated to students' perceptions of cognitive presence in an online class, where neuroticism was negatively and significantly correlated to cognitive presence. See Table 2 for the bivariate correlations between all variables.

The multiple correlation (R) for the first model was significant with combined predictor variables to cognitive presence at $R = .379$, $F (5, 366) = 12.291$, $p < .001$. The shared variance was $R^2 = .144$ and adjusted $R^2 = .132$. The post hoc effect size of R^2 was $f^2 = .168$. Two individual predictors in the model that significantly predicted students' perceptions of cognitive presence in an online class were conscientiousness ($t = 4.614$, $p < .001$) and openness ($t = 4.334$, $p < .001$).

The bivariate correlations for the third research question showed that the variables of extraversion, agreeableness, conscientiousness, and openness were positively and significantly correlated to students' perceptions of teaching presence in an online class. Neuroticism significantly but negatively correlated to teaching presence (see Table 3).

The multiple correlation (R) for the first model was significant, with combined predictor variables to teaching presence at $R = .363$, $F (5, 366) = 11.078$, $p < .001$. The shared variance was $R^2 = .131$ and adjusted $R^2 = .120$. The post hoc effect size of R^2 was $f^2 = .151$. The post hoc power of the R^2 was power = .999. Two individual predictors in the model that significantly predicted students' perceptions of teaching presence in an online class

Table 3. Bivariate Correlations, Means, and Standard Deviations for Teaching Presence and the Big Five Personality Factors

Measure	1	2	3	4	5	6	M	SD
1. Teaching Presence	_	.21**	.20**	.30**	-.14*	.23**	4.58	.48
2. Extraversion		_	.28**	.30**	-.37**	.41**	3.70	.70
3. Agreeableness			_	.46**	-.45**	.29**	4.29	.53
4. Conscientiousness				_	-.51**	.18**	4.14	.56
5. Neuroticism					_	-.28**	2.60	.80
6. Openness						_	3.72	.53

Note: M = Mean, SD = Standard Deviation, N = 372

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

were conscientiousness (t = 4.599, p < .001) and openness (t = 2.835, p = .005).

Spearman's rho correlation and ordinal regression analyses were conducted following the standard multiple linear regression analysis because the assumption of normality was not met for the criterion variable of teaching presence. A nonparametric ordinal regression allows the analysis of ordinal variables without testing for the arbitrary assumptions about the variables scales (Winship & Mare, 1984). The Spearman's rho correlation coefficients (r_s) were conducted for the five predictor variables to teaching presence and compared to the findings from the Pearson correlation coefficients (r). The obtained values of Spearman's rho correlation coefficients (r_s) and Pearson correlation coefficients (r) are very congruent for extraversion, $r_s = .202$, $p < .001$ ($r = .211$, $p < .001$); agreeableness, $r_s = .222$, $p < .001$ ($r = .195$, $p < .001$); conscientiousness, $r_s = .331$, $p < .001$ ($r = .300$, $p < .001$); neuroticism, $r_s = -.161$, $p = .002$ ($r = -.139$, $p = .004$); and openness, $r_s = .254$, $p < .001$ ($r = .228$, $p < .001$). The Spearman's rho correlation coefficient (r_s) for the predictor variable of conscientiousness to teaching presence also confirmed the findings from the Pearson correlation coefficient (r) with the following values: $r_s = .331$, $p < .001$ ($r = .300$, $p < .001$).

The ordinal regression analysis was conducted to assess the model of the five predictor variables to the criterion variable of the teaching presence. The results showed that the model with predictors is a better model ($\chi^2 = 59.649$, $p < .001$). The goodness of fit showed that the model fits due to a large observed significance level of $p > .05$ (Norusis, 2004) and results in a Pearson $\chi^2 = 8504.013$, $p = .571$. The Nagelkerke pseudo $R^2 = .149$.

The two predictor variables that significantly predicted teaching presence, based on the ordinal regression, were conscientiousness, estimate = .990 (.95 CI = .583, 1.396), Wald = 22.775, $p < .001$, and openness, estimate = .665 (.95 CI = .269, 1.060), Wald = 10.853, $p = .001$. These results are consistent with the standard multiple linear regression analysis where the two significant predictors of the teaching presence were also conscientiousness ($p < .001$) and openness ($p < .01$).

DISCUSSION

The findings of this study provide new, research-based evidence about the impact of student personality on student perception of online learning experiences. The integration of the CoI framework provided a new construct for exploring students' perspectives of a meaningful learning experience in online courses (Garrison, 2016). The discussion of the findings in relation to each hypothesis is presented next.

Hypothesis 1

Based on the findings of the bivariate correlations, the four personality factors of extraversion, agreeableness, conscientiousness, and openness were positively and significantly correlated to students' perceptions of social presence in the online course. Neuroticism was the only personality factor that was negatively and significantly correlated to social presence, which means that students who are less emotionally stable, more easily stressed, and more anxious (Costa & McCrae, 1995) may have a harder time

establishing personal and purposeful relationships (Garrison et al., 2010) and feeling socially and emotionally connected with other students and the instructor in an online class (Garrison et al., 2010; Sung & Mayer, 2012). The two significant predictors of the regression model were conscientiousness and openness. Conscientious students, who are disciplined, strong-willed, and purposeful and exhibit achievement striving (Costa & McCrae, 1995; Educational Testing Service, 2012), can project their individual personalities and establish purposeful relationships in an online class (Garrison et al., 2010). This finding may be explained by the primary focus of social presence to support cognitive presence (Lee, 2013), which is associated with students' perceptions of higher learning outcomes that conscientious students desire.

The second personality factor that significantly predicted social presence was openness. Open students have strong intellectual curiosity, are willing to question their own values, explore new situations associated with learning, and like complex problems (Costa & McCrae, 1995; Educational Testing Service, 2012). These students may find connecting with other students and their instructor, as well as establishing personal relationships, beneficial as these relationships may provide the desired intellectual stimulation in an online class (Garrison et al., 2010; Johnson et al., 2012; Keller & Karau, 2013).

Hypothesis 2

The findings of the bivariate correlations between the Big Five personality factors and a cognitive presence were similar to the social presence findings. The personality factors of extraversion, agreeableness, conscientiousness, and openness were positively and significantly correlated to students' perceptions of cognitive presence. Neuroticism was negatively and significantly correlated to cognitive presence, which suggests that students who score high on neuroticism, characterized by being more anxious, uncertain, and stressed, had a lower perception of their understanding of the course material. The two significant individual predictors of this model were conscientiousness and openness. Because conscientious students are achievement-oriented, determined, and intrinsically motivated to succeed (Devaraj et al., 2008), and open students have broad interests and are intellectually curious, these students are more likely to have higher perceived learning outcomes (Akyol & Garrison, 2011).

Hypothesis 3

The results from the bivariate correlations showed that the personality factors of extraversion, agreeableness, conscientiousness, and openness were positively and significantly correlated to students' perceptions of teaching presence. The one personality factor that was negatively and significantly correlated to teaching presence was neuroticism, which suggests that more anxious students had a lower perception of their instructor's engagement and interventions in the learning process. The multiple correlation was significant. The two significant individual predictors of the model, based on the multiple regression and ordinal regression analyses, were conscientiousness and openness. These results suggest that conscientious and open students are more likely to be satisfied with the course structure, instructor feedback and contribution to challenging discussions about the topic, guidance in understanding the course material, and scholarly leadership (Garrison et al., 2000; Lambert & Fisher, 2013; Stover & Pollock, 2014).

The three null hypotheses were partially rejected because the combined predictor variables significantly ($p < .001$) predicted social, cognitive, and teaching presence. The two individual predictors in the model that significantly and consistently predicted students' perceptions of social, cognitive, and teaching presence were conscientiousness and openness. Table 4 shows a summary of the standardized regression coefficients and estimates from the multiple linear regression analyses.

CONCLUSION AND RECOMMENDATIONS

This study provided important information on the role of personality in students' perceptions of their online learning experiences. The relationship between student personality, based on the Big Five model, and students' perceptions of online course experiences, based on the CoI framework, was assessed using standard multiple linear regression and ordinal regression analyses. The two individual predictors of the model that appeared to consistently and significantly predict students' perceptions of online course experiences were conscientiousness and openness. The findings about

Table 4. Summary of Standardized Regression Coefficients and Estimates for Student Personality Factors and Perceptions of Social, Cognitive, and Teaching Presences

Variable	Social Presence	Cognitive Presence	Teaching Presence	
	ßß[a]	ßß	ββß	Estimate[b]
Extraversion	-.011	-.012	.061	.175
Agreeableness	.068	.065	.039	.178
Conscientiousness	.315**	.286**	.233**	.990**
Neuroticism	.056	.061	.057	.183
Openness	.183*	.262**	.140*	.665*
N	372	372	372	372

Note: N = 372

[a]Standardized regression coefficients from the multiple linear regression.

[b]Estimates from the ordinal regression.

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

conscientiousness being the predictor of students' online course experiences is consistent with the findings in Keller and Karau' study (2013), the only study found in the literature that assessed online course impressions based on students' personality, that also found a significant relationship between conscientiousness and online course impressions. Additionally, conscientious students were reported to have a higher motivation to succeed (Abzug, 2015; Devaraj et al., 2008), to have higher academic achievement (Trapmann, Hell, Hirn, & Schuler, 2007), and to be more proactive with their course work (Giluk & Postlethwaite, 2015). Given the characteristics of students who score high on openness, such as intellectual curiosity, creativity, and being open to new experiences, it was not a surprising finding that openness factor, in addition to conscientiousness, has shown a positive and significant correlation to students' perception of online course experiences. These findings may provide valuable insights for instructors and course developers on how student personality may affect what they like or dislike about the online course and help identify various instructional opportunities that are best suited for students' strengths based on individual preferences (Kim et al., 2013). Information about student preferences in online courses may be helpful in selecting course material and activities, assisting students in managing the workload, and providing the guidance based on their individual needs (Diseth, 2013; Ghorbani & Montazer, 2015; Kentnor, 2015), which in return can help the higher learning institutions to retain students (Keller & Karau, 2013). Personality refers to consistent patterns of behavior (Kirwan & Roumell, 2015), and it has been linked to course experiences in a variety of studies (Ghorbani & Montazer, 2015; Kim et al., 2013; Wang, Shannon, & Ross, 2013). While personality factors in this study significantly predicted how students perceived their online course experiences, there could have been other variables, such as gender, intelligence scores, technology self-efficacy, motivation, high school GPA, or parents' level of education, that contributed to the relationships. The sample size in this study was limited to students with little to no college experience who enrolled in an introductory University Success course. The perception of online course experiences may be different in students who are more experienced with online learning or students enrolled in classes with more challenging content, such as mathematics (Atchley, Wingenbach, & Akers, 2013). Future researchers can evaluate students' experiences in online courses based on their experience with online learning, measured by the number of completed credits or a degree level, as well as the content of the classes.

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