

UC Riverside

UC Riverside Undergraduate Research Journal

Title

Personality and GPA: The Predictive Roles of Academic Identity and College-Going Culture

Permalink

<https://escholarship.org/uc/item/47k1g43z>

Journal

UC Riverside Undergraduate Research Journal, 12(1)

Authors

Burbidge, Alysia

Horton, Calen

Murray, Carolyn

Publication Date

2018

DOI

10.5070/RJ5121039159

Copyright Information

Copyright 2018 by the author(s). All rights reserved unless otherwise indicated. Contact the author(s) for any necessary permissions. Learn more at <https://escholarship.org/terms>

Peer reviewed

Personality and GPA: The Predictive Roles of Academic Identity and College-Going Culture

Alysia Burbidge¹, Calen Horton¹, Carolyn Murray¹

¹ Department of Psychology

ABSTRACT

Social psychology has established a theoretical relationship between personality and academic performance, but it has yet to identify the process by which personality influences real-world outcomes, such as grade point average. This paper proposes a model that explicates academic identity's role as a mediator in the relationship between the Big Five Factors of personality and college GPA. Specifically, the current paper focuses on the ability of personality to predict academic identity. A college-going culture, or the extent to which a student's high school cultivates a pro-college environment, is hypothesized to moderate the relationship between personality and academic identity. To investigate the hypothesis, self-report measures related to personality and academics were administered to 370 university students. Results generally supported the model, suggesting a process by which students' personalities effect their academic attitudes. Educators are encouraged to foster college-going cultures which they can use to help students who are predisposed to adopt harmful academic identities.

Keywords: academic achievement, academic identity status, big five, college-going culture, personality



Alysia Burbidge

Department of Psychology

Alysia Burbidge is a third-year Psychology B.S. major. She researches the various predictors of academic achievement under the mentorship of Dr. Carolyn Murray. Alysia is a member of Phi Beta Kappa and is a two-time recipient of the Dean's Academic Distinction Award. She will be attending the University of Southern California in the fall of 2018 as a Social Psychology Ph.D. graduate student.



FACULTY MENTOR

Dr. Carolyn Bennett Murray

Professor in the Department of Psychology

Dr. Carolyn Bennett Murray is currently a Professor in the Psychology Department at the University of California, Riverside (UCR). She received her Ph.D. from the University of Michigan, Ann Arbor and has published numerous journal articles and book chapters. She is a consultant on the Statewide African American California Reducing Disparities Project. A few of her many awards include the Chancellor's Award for Excellence in Undergraduate Research, the Association of Black Psychologists' Distinguished Psychologist Award, and the UCR Distinguished Teaching Award.

INTRODUCTION

Personality has been shown to predict a variety of outcomes and behaviors, such as workplace performance (Barrick & Mount, 1991) and academic effort (Nofle & Robbins, 2007). However, there are inconsistencies in the literature explaining the relationship between personality and college grade point average. This paper argues against a direct relationship between personality and GPA and instead suggests a relationship dependent on third variables, such as college-going culture, academic identity, and academic behaviors and attitudes (see *Figure 1*). This model is not meant to identify which individuals are doomed for academic failure or destined for academic success. Rather, it serves to identify which students may be predisposed to develop mindsets that will hinder their abilities to succeed. Ultimately, this paper hopes to establish the influence of college-going culture on academic identity formation and subsequently encourage educators to support and foster college-going cultures in high schools.

The Big Five

The Big Five Factor theory proposes five basic trait factors that serve as the building blocks of personality (Costa & McCrae, 1992; Digman, 1990; McCrae & Costa, 1987). These five factors are openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism. Since its inception, the Big Five Factor model has been the focus of many hypotheses hoping to shed light on personality as a predictor of behavior and performance.

Certain personality factors, such as conscientiousness and openness, have been found to consistently predict certain measurements of achievement, such as job performance (Barrick & Mount, 1991) and SAT scores (Nofle & Robbins, 2007). On the other hand, the Big Five Factors only inconsistently predict the outcomes and behaviors that compose academic achievement, such as grade point average, exam scores, and academic effort.

For example, while the argument in favor of a relationship between conscientiousness and student GPA is strong, the predictive power of the other four factors is typically insignificant (Bauer & Liang, 2003; Chamorro-Premuzic & Furnham, 2003; Langford, 2003). In addition, the inability of conscientiousness to consistently predict GPA has led multiple researchers to assume that the relationship between conscientiousness and academic performance may be either partly or completely indirect in nature (Bauer & Liang, 2003; O'Connor & Paunonen, 2007). Academic effort (Nofle & Robbins, 2007) and learning styles (Komarraju, Karau, Schmeck, & Avdic, 2011) are two examples of proposed mediators between the Big Five Factors and GPA. However, while Nofle and Robbins (2007) found weak, but significant mediated correlations between most of the five factors and GPA, these findings failed to replicate in the four other samples analyzed in the same study. Still, the recent shift toward a third-variable model seems probable in explaining this relationship. The current paper considers multiple third variables, including

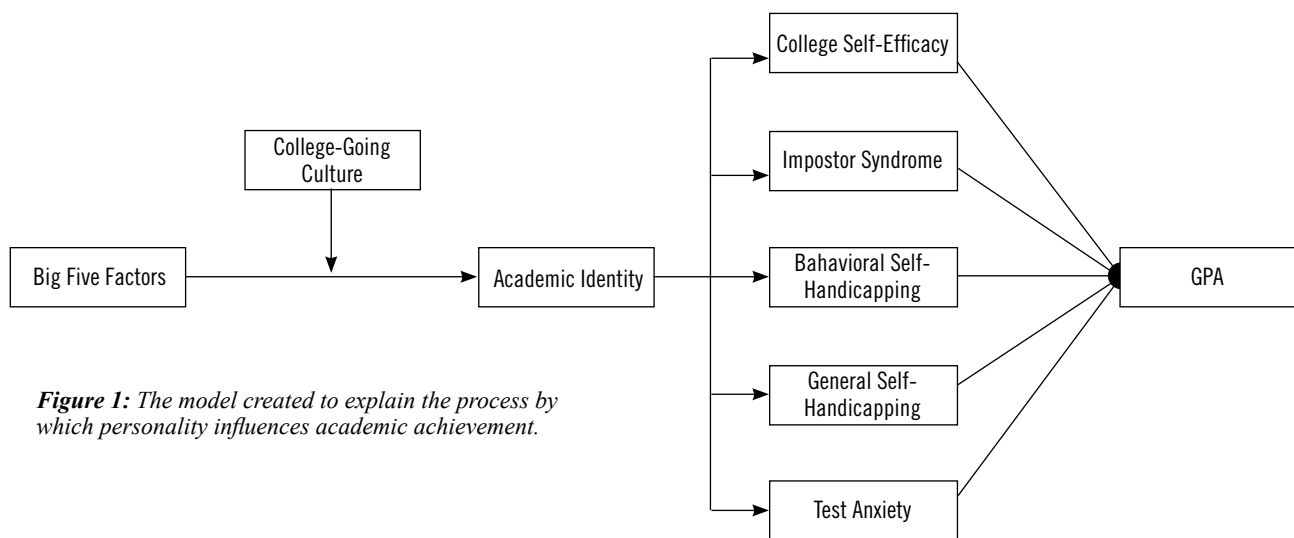


Figure 1: The model created to explain the process by which personality influences academic achievement.

academic identity status and college-going culture, that personality is proposed to predict.

Academic Identity Status

Academic Identity Status (Was, Al-Harthy, Stack-Oden, & Isaacson, 2009; Was & Isaacson, 2008) unites the concepts of identity status and achievement orientation into a singular construct capable of predicting a college student's academic goals, behaviors, and self-concept. Drawn from previous work by Erikson (1963), academic identity status development is dependent on the dimensions of crisis and commitment. The crisis dimension is dependent on the degree of exploration experienced by the student before commitment occurs. The four academic identity statuses align with the identity statuses proposed by Marcia (1966): identity achievement, identity foreclosure, identity moratorium, and identity diffusion. Identity achievement is attained when there is sufficient exploration prior to the commitment, whereas identity foreclosure occurs if a student does not partake in sufficient exploration prior to commitment. Identity foreclosure in college students typically results from a premature commitment brought about by pressure from outside forces, such as pressure from parents to attend college (Was, Al-Harthy, Stack-Oden, & Isaacson, 2009). Next, identity moratorium results from high exploration without commitment. Finally, identity diffusion results from low exploration and low commitment. Similar to the third-variable models proposed by Nofle and Robbins (2007) and Komarraju, Karau, Schmeck, and Avdic (2011), the present paper identifies academic identity status as the third variable needed to identify a reliable path by which personality may influence academic achievement.

College-Going Culture

The present paper proposes that college-going culture moderates the effect of personality on academic identity status. In general, a college-going culture is characterized by pro-college assistance and encouragement from teachers, parents, advisors, and peers at the high school level (Oakes, Mendoza, & Silver, 2004). High schools students exposed to a college-going culture are more likely to attend four-year universities due to the high degrees of social support and personalized attention resulting from the culture (Holland & Farmer-Hinton, 2009). Therefore,

advisors, teachers, parents, and peers are considered key to the effectiveness of a college-going culture. A high school student's social support network is a necessary source of college-related information and emotional assistance (Schneider, 2007). In addition, college-going cultures emphasize the role of the teacher in the student's understanding and preparation for the more challenging college work environment (Schneider, 2007). Rigorous courses and tests are encouraged as a way of preparing students for their general college entrance exams, the Scholastic Aptitude Test (SAT), and college courses. Along with college preparation, college awareness and college eligibility are key components of college readiness (Baker, Clay, & Gratama, 2005). On the path to achieving college readiness, students require a vast amount of college-related information and classroom preparation. For example, students need help understanding the college application process. Information regarding which colleges particular students are eligible to attend, and how to pick a good college match to meet specific student's needs, should be available.

Current Research

Previous literature has established that personality is predictive of grade point average, but the specifics of the relationship are currently unknown. More recent studies have suggested that the predictive power of personality for GPA is at least somewhat dependent on a third variable(s). Therefore, the first half of the present model focuses on college-going culture as just such a third variable, or moderator, for the relationship between personality and academic identity status, and the second half of the model focuses on the relationship between academic identity status, academic behaviors and attitudes, and GPA. The current paper tested the following hypotheses.

Hypothesis 1 states that the Big Five Factors of personality will predict academic identity status. Each personality factor is characterized by a set of unique attitudes that may lead to the inhibition or promotion of exploration and commitment. For example, individuals who are high in openness to experience are more likely to possess a curious nature and individuals high in extraversion are more likely to seek out new experiences (Costa & McCrae, 1992). Such characteristics are reasonably expected to

promote exploration. Therefore, openness and extraversion are predicted to possess a stronger influence on identity statuses with high degrees of exploration. Similarly, high *agreeableness* is typically associated with naivety and submissiveness, which may predict identity statuses with higher degrees of commitment due to an inability or lack of desire to fight against social pressures. The attitudes associated with neuroticism, such as anxiety and frustration, also may lend to the development of non-achieved academic identity statuses. *Conscientiousness* is expected to predict identity achievement due to its association with dedication and carefulness.

Hypothesis 2 states that college-going culture will moderate the strength of the relationship between personality and academic identity status. College-going culture exposes students to information and options related to colleges. For better or worse, the culture also pushes students to commit to four-year colleges immediately following high school. Therefore, it is proposed that greater accessibility to information and encouragement from others to pursue higher education will make students more likely to form an achieved academic identity status. Again, due to the feelings of frustration and anxiety associated with neuroticism, it is expected that students who score high on neuroticism will benefit the most from college-going culture. This effect is expected given the key aspects of college-going culture, including improved access to resources and increased guidance and encouragement from support systems. Therefore, those testing high in neuroticism are expected to become more likely to form an achieved academic identity following exposure to the college-going culture. Therefore, college-going culture is also proposed as a vital point of intervention for students who may be predisposed to adopt a non-achievement academic identity.

METHODS

Participants

The participants were 370 undergraduate students attending the same university in Southern California. Of the 370 participants, 65% of participants (237) indicated they were female, 35% of participants (132) indicated they were male, and one participant declined to indicate a gender. The average age was 19.00 (*Min* = 17; *Max* = 28; *SD* = 1.37). The ethnically diverse sample consisted of 41.4% Asian

American students, 32.7% Hispanic/Latino students, 8.4% Caucasians students, 5.4% African Americans students, and 10.6% who either indicated a Mixed Heritage or chose the option of Other.

Of the students participating in the study, 75.6% of participants were completing their first or second year of university education (*first-year* = 185, *second-year* = 95, *third-year* = 61, *fourth-year* = 29). In terms of academic major, 37.3% of participants (138) were pursuing a degree in the College of Humanities, Arts, or Social Sciences, whereas 57.6% of participants (213) were pursuing a degree in the College of Natural Sciences or the College of Engineering. 4.6% of participants reported an undeclared or undecided academic major.

Materials

Big Five Personality Factors. The Big Five Inventory (John & Srivastava, 1999) was administered to assess the extent to which participants expressed certain personality traits. The Big Five Inventory (BFI) is a 44-item instrument with a 5-point Likert scale. The scale ranged from 1 (Disagree Strongly) to 5 (Agree Strongly). The measure has five subscales corresponding to each of the Big Five Factors: *openness*, *conscientiousness*, *extraversion*, *agreeableness*, and *neuroticism*. Participants were instructed to rate the extent to which they identified as someone who exhibits certain characteristics or beliefs. Each phrase begins with “I see myself as someone who...” and is followed by 44 statements comprising the elements of the subscales. The openness subscale includes items such as “likes to reflect, play with ideas”. The conscientiousness subscale includes items such as “is a reliable worker”. The extraversion subscale includes items such as “is outgoing, sociable”. The agreeableness subscale includes items such as “has a forgiving nature”. The neuroticism subscales include items such as “gets nervous easily”. Cronbach’s alpha was used to determine the degree of reliability and agreement of the items within each subscale; openness = 0.74, conscientiousness = 0.82, extraversion = 0.86, agreeableness = 0.74, and neuroticism = 0.78.

College-Going Culture. An adaptation of the College-Going Culture questionnaire (Oakes, Mendoza, & Silver, 2004) was administered to determine the amount of college-

related support and resources students received in high school. The College-Going Culture questionnaire (CGC) is a 26-item instrument with a 4-point Likert scale. The scale ranged from 1 (Strongly Disagree) to 4 (Strongly Agree). Examples of items from the CGC include statement such as: “College representatives regularly visited your campus to speak with staff and students;” “Your high school offered counseling regarding courses that would prepare you for a four-year college;” and “Your family prepared you to go to college”. Cronbach’s alpha for the questionnaire = 0.85, indicating a high degree of reliability and item agreement.

Academic Identity Status. The Academic Identity Measure (Was & Isaacson, 2008) was administered to assess the central academic attitudes of the participants. The Academic Identity Measure (AIM) is a 40-item instrument with a 5-point Likert scale. The Likert scale ranged from 1 (Not at all like me) to 4 (Very much like me). The measure consists of four subscales: achieved, diffused, foreclosed, and moratorium. Each subscale represents one of the four potential academic identities by the same name. The achieved subscale includes items such as “I know why I am in college and have clear goals I want to achieve”. The diffused subscale includes items such as “I don’t have clear priorities for school and life. I usually just go with the flow”. The foreclosed subscale includes items such as “If I had to pay for my own education I probably wouldn’t even be in school even if I had the money”. The moratorium subscale includes items such as “My view of grades and studying fluctuates: sometimes I am conscientious, other times I’m lazy”. Cronbach’s alpha for each subscale is as follows: achieved = 0.76, diffused = 0.76, foreclosed = 0.77, and moratorium = 0.85.

Procedure

Students were given the option to participate in the study and receive course credit as compensation. The study was presented as a survey of student beliefs regarding college success. Students who agreed to participate were required to report to a reserved computer lab on the university’s campus. The controlled environment of the reserved computer lab minimized distractions and potential variances in experience during data collection.

Before beginning the digital survey, participants were

instructed to read and sign the informed consent form. Next, each participant was assigned a unique identification number and a personal desktop computer to allow him or her to access the survey. The digital survey began with a demographic questionnaire and then it continued with multiple self-report measures. The demographic questionnaire included items that solicited non-academic information (e.g. gender, age, and ethnicity) and academic information (e.g. academic concentration and college generation status). The self-report measures included the Big Five Inventory, the College-Going Culture Questionnaire, and the Academic Identity Measure. Participants were allowed up to one hour to finish the survey. Each computer was reset following each session.

RESULTS

Simple moderated regression analyses were conducted to determine the degree to which college-going culture influences the effect of personality on the formation of academic identity status. The results of the moderated regression analyses are summarized in Table 1. Aside from three exceptions, each of the five personality factors holds significant predictive value for each of the four academic identity statuses. College-going culture moderated three of these relationships: openness to experience and foreclosure, conscientiousness and moratorium, and neuroticism and foreclosure. Specifically, when college-going culture was included, the relationship between openness and foreclosure changed from negative to positive, with the standardized coefficient (β) increasing from $\beta = -.15$ to $\beta = .18$, $F(3, 337) = 12.35$, $p < 0.01$. Similarly, the relationship between conscientiousness and moratorium weakened, $\beta = -.46$ to $\beta = -.16$, $F(3, 329) = 32.85$, $p < 0.01$. The relationship between neuroticism and foreclosure changed from positive to negative and was reduced from $\beta = .24$ to $\beta = -.10$, $F(3, 337) = 14.85$, $p < 0.05$.

The results also revealed that college-going culture is more likely to independently influence academic identity than it is to influence academic identity status via a significant interaction with personality. College-going culture consistently predicted an increased likelihood of identity achievement and identity foreclosure, even when a personality factor was negatively associated with or had no significant association with identity status.

DISCUSSION

To properly understand the relationship between personality and GPA, the present paper suggested the importance of college-going culture and academic identity status as third variables. Therefore, the relationship between personality, college-going culture, and the Big Five Factors was analyzed. Regression analyses provided support for Hypothesis 1. Hypothesis 2 was not generally supported. Instead, analyses revealed a direct relationship between college-going culture and academic identity.

As shown by **Table 1**, the results supported Hypothesis 1. There is a significant relationship between the Big Five Factors and academic identity status. Openness is strongly predictive of an achieved academic identity and negatively related to the non-achieved identities. Conscientiousness, agreeableness, and extraversion are also positively associated with identity achievement and negatively associated with non-achievement identities. Notably, conscientiousness is not significantly predictive of identity

foreclosure, but it has a strong negative association with moratorium and diffusion. In other words, while being highly conscientious does not predict a foreclosed identity, it may still buffer against academic identity statuses that are low in commitment. This may be due to the traits of determination and hard work that are associated with conscientiousness (Costa & McCrae, 1992). As predicted, neuroticism is also most significantly associated with non-achievement identities, especially foreclosure and moratorium. These results suggest that students who score high on neuroticism are less likely to form an achieved academic identity, potentially due to the traits of anxiety and frustration (Costa & McCrae, 1992).

Regarding Hypothesis 2, there was little support for the moderation effect of college-going culture on personality’s predictive value of academic identity status. College-going culture reduces the predictive strength of conscientiousness on identity moratorium. However, the association still remains negative. In addition, individuals who score high

Identity Factor	Personality Predictor	Beta (BF)	t-value (BF)	Beta (CGC)	t-value (CGC)	Beta (CGCxBF)	t-value (CGCxBF)	R ²	Adjusted R ²
Achieved	Openness	0.24***	4.34	0.15**	2.75	0.07	0.27	0.09	0.08
	Conscientiousness	0.44***	9.05	0.09	1.84	0.04	0.73	0.23	0.21
	Extraversion	0.17**	3.16	0.16**	2.84	-0.02	-0.35	0.06	0.05
	Agreeableness	0.21***	3.98	0.15**	2.67	0.06	1.15	0.08	0.07
	Neuroticism	-0.11*	-2.03	0.16**	2.96	-0.01	-0.23	0.04	0.03
Foreclosed	Openness	-0.15**	-2.94	0.22***	4.20	0.18**	3.26	0.10	0.09
	Conscientiousness	-0.01	-0.25	0.23***	4.30	0.03	0.61	0.05	0.04
	Extraversion	-0.11*	-2.13	0.24***	4.42	0.03	0.58	0.06	0.06
	Agreeableness	0.05	0.91	0.22***	4.12	0.01	0.19	0.05	0.05
	Neuroticism	0.24***	4.63	0.24***	4.69	-0.10*	-2.04	0.17	0.11
Moratorium	Openness	-0.08	-1.49	-0.01	-0.21	-0.02	-0.33	0.01	-0.00
	Conscientiousness	-0.46***	-9.27	0.05	1.01	-0.16**	-3.24	0.23	0.22
	Extraversion	-0.14*	-2.49	-0.00	-0.06	-0.01	-0.14	0.02	0.01
	Agreeableness	-0.18***	-3.37	0.00	0.04	-0.04	-0.86	0.04	0.03
	Neuroticism	0.25***	4.66	0.00	0.06	0.05	0.93	0.07	0.06
Diffused	Openness	-0.14**	-2.62	-0.02	-0.40	-0.01	-0.22	0.02	0.01
	Conscientiousness	-0.48***	-10.00	0.04	0.83	-0.22	-0.47	0.23	0.23
	Extraversion	-0.12*	-2.22	-0.02	-0.30	-0.06	-1.02	0.02	0.01
	Agreeableness	-0.19***	-3.64	-0.01	-0.23	-0.04	-0.75	0.04	0.03
	Neuroticism	0.14*	2.50	-0.02	-0.27	0.06	1.10	0.02	0.01

Table 1: Moderated regression analyses with Big Five personality traits and college-going climate regressed on academic identity status. Note: CGC = College-Going Culture; BF = Big Five. * p < .05; ** p < .01; *** p < .001.

in openness to experience become more likely to adopt a foreclosed identity when exposed to a college-going culture. These results might seem to suggest that college-going culture may have a harmful effect on students' academic identity formation. However, college-going culture also reduces the predictive strength of neuroticism on foreclosure to a degree that changes the nature of the relationship from concurrent to oppositional. Perhaps the frustration and anxiety surrounding the college selection process is diminished by the exploration factor of college-going culture. This finding supports the use of college-going culture to assist students predisposed to harmful academic identities.

To expand upon Hypothesis 2, the results revealed an unexpected relationship between college-going culture and academic identity that is independent of personality. Perhaps then college-going culture's variable influence on personality is due to the latter's relatively stable nature (McCrae & Costa, 1987) and not a signal of ineffectiveness. Indeed, college-going culture consistently and strongly predicts identity achievement and identity foreclosure. These findings coincide with college-going culture's emphasis on college attendance (Holland & Farmer-Hinton, 2009) and the high degrees of commitment seen in identity achievement and foreclosure (Was & Isaacson,

2008). Greater integration of exploration into college-going culture, which already exists in the form of college information and advising (Baker, Clay, & Gratama, 2005), will possibly reduce instances of identity foreclosure and promote greater identity achievement.

The results also support previous research that has called for the consideration of third variables in the relationship between personality and GPA (Bauer & Liang, 2003; O'Connor & Paunonen, 2007). Future research is encouraged to advance the generalizability of this particular third-variable model by drawing from populations representative of students who are in their last years of high school and their first years in college. The validation of academic identity status as the missing link between personality and GPA creates a promising opportunity for academic intervention. Academic identity status, unlike the Big Five Factors of personality, is not a construct resistant to guidance and influence from outside factors. College-going culture is a strong and reliable predictor of academic identity achievement. In addition, these analyses reveal that despite the stubborn nature of personality, students who score high on neuroticism still benefit largely from exposure to college-going culture. Therefore, high school educators are encouraged to adopt college-going cultures to foster beneficial academic identities in their students.

ACKNOWLEDGEMENTS

I extend my thanks to Dr. Carolyn Murray for allowing me this opportunity and for sharing her knowledge with me. I also thank my graduate mentor, Calen Horton, for his support and guidance through this process.

REFERENCES

- Baker, D. B., Clay, J. N., & Gratama, C. A. (2005). The essence of college readiness: Implications for students, parents, schools, and researchers. Retrieved from http://www.bercgroup.com/uploads/1/1/8/4/11843915/college_readiness_report.pdf
- Barrick, M. R., & Mount, M. K. (1991). The big five personality dimensions and job performance: A meta-analysis. *Personnel Psychology, 44*, 1-26.
- Bauer, K. W., & Liang, Q. (2003). The effect of personality and precollege characteristics on first-year activities and academic performance. *Journal of College Student Development, 44*, 277-290.

- Chamorro-Premuzic, T., & Furnham, A. (2003). Personality predicts academic performance: Evidence from two longitudinal university samples. *Journal of Research in Personality, 37*, 319-338.

- Costa, P., & McCrae, R. (1992). Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-factor Inventory (NEO-FFI): Professional Manual. Odessa: Psychological Assessment Resources Inc..

- Digman, J. M. (1990). Personality structure: Emergence of the five-factor model. *Annual Review of Psychology, 41*, 417-440.

- Erikson, E. H. (1963). *Childhood and society*. New York: Norton.

- Holland, N. E., & Farmer-Hinton, R. L. (2009). Leave no schools behind: The importance of college culture in urban public high schools. *The High School Journal, 92*, 24-43.

- John, O. P., & Srivastava, S. (1999). The Big Five Trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 102-138). New York, NY, US: Guilford Press.
- Komaraju, M., Karau, S. J., Schmeck, R. R., & Avdic, A. (2011). The big five personality traits, learning styles, and academic achievement. *Personality and Individual Differences, 51*, 472-477.
- Lanford, P. H. (2003). A one-minute measure of the big five? Evaluating and abridging Shafer's (1999a) big five markers. *Personality and Individual Differences, 35*, 1127-1140.
- Marcia, J. E. (1966). Development and validation of ego-identity status. *Journal of Personality and Social Psychology, 3*(5), 551-558.
- 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.
- Noftle, E. E., & Robbins, R. W. (2007). Personality predictors of academic outcomes: Big five correlates of GPA and SAT scores. *Journal of Personality and Social Psychology, 93*, 116-130.
- Oakes, J., Mendoza, J., & Silver, D. (2005). California opportunity indicators: Informing and monitoring California's progress toward equitable college access. Retrieved from <https://escholarship.org/uc/item/22d4f4k9>
- O'Connor, M. C., & Paunonen, S. V. (2007). Big five personality predictors of post-secondary academic performance. *Personality and Individual Differences, 43*, 971-990.
- Schneider, B. (2007). Forming a college-going community in U.S. public high schools. Retrieved from <https://docs.gatesfoundation.org/documents/collegegoing.pdf>
- Was, C. A., Al-Harthy, I., Stack-Oden, M., & Isaacson, R. M. (2009). Academic identity status and the relationship to achievement in goal orientation. *Electronic Journal of Research in Educational Psychology, 7*, 627-652.
- Was, C. A., & Isaacson, R. M. (2008). The development of a measure of academic identity status. *Journal of Research in Education, 18*, 94-105.