Probe into the Correlational Study between English Majors' Personality Traits and Their Academic Performance and Its Mediating Variables

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Keywords: Personality Traits; Academic Performance; Mediating Variables

Abstract. The present study intends to probe into the relatively complex relationship between English majors' personality traits and their academic performance, in which the three mediating variables, i.e., self-regulatory efficacy, autonomous motivation and controlled motivation, are involved to testify whether they have played certain mediating roles in this relationship. In the light of the research findings, pedagogical implications are put forward accordingly.

1. Research Background

Learners' excellent academic grades or low performance probably originate from many factors such as cognition, society, motivation, psychology, etc. In the past decade, more importance is attached to the correlative study between personality traits and academic performance (Vitulic & Zupancic, 2013; Saxena & Mishra, 2015). The correlation between the two sometimes can be direct, and sometimes can be indirect, which is caused by the mediating role of other factors. In other words, many different explanative variables, such as self-efficacy and motivation which are covered under specific psychological mechanism, lay a solid foundation of observable relationship between personality traits and academic performance. Zuffiano et al.(2013) argued that, under teaching environment, learning motivation and self-regulating self-efficacy are likely to encompass more practical value. The understanding of their roles in the relationship between personality traits and academic performance is of great importance in establishing supportive teaching environment. In addition, the current studies regarding the underlying mechanism linking learning motivation and academic performance have been widely verified. (Vecchione, Alessandri & Marsicano, 2014)

Studying the three pairs of relations, i.e., personality & academic performance, self-efficacy & academic performance, and learning motivation & academic performance, the author has acquired the general finding. That is, in spite of the fact that the two-two relation study of each pair is relatively in-depth (McIlroy et al., 2015; Schnell et al., 2015; South et al., 2018; Talsma et al., 2019), the cross-over study of the three factors, especially the effect brought about by the mediating factors between personality traits and academic performance, is rather rare. What's more, no matter at abroad or at home, the research subjects are mainly restricted to the students of science and engineering, or middle school students. Consequently, the studies concerning English majors at home in terms of the correlation between personality traits and academic performance are quite few. And no study has been conducted with respect to the mediating factors such as the socio-cognitive factors of self-efficacy and motivational factors, which leaves space, necessity and significance for the present study.

2. Theoretical Basis

(1) The Big Five Model

As one popular conceptualized way in terms of the various dimensions of personality traits, the big five model is widely recognized as a comparatively comprehensive classification, which is capable of obtaining the major parts of the individual differences in behavior patterns.(McCrae &

Costa, 1999) In educational field, the big five model can provide access to the individual differences of learners' academic performance (Lounsbury, 2003; Zuffiano et al., 2013)

(2) Self-regulation Theory

Self-regulating efficacy belongs to one belief, which signals devising the alternate path to success by means of evaluating his or her behavioral results, so as to meet the ends of exploring self-thinking process. Self-regulating efficacy plays a vital role in fields of learning motivation and academic performance, which exists in differing teaching fields and fits for practically all grades of students (Jung et al., 2017; Putwain et al., 2013).

(3) Self-determination Theory

Self-regulating theory is the macro theory concerning motivation, which differentiates two types of behavioral motivation, namely, autonomous motivation and controlled motivation. Both autonomous and controlled motivation demonstrate the causes of individual behavior, accounting for why learners can practice such behaviors (Ratelle, Guay, Larose & Sene'cal, 2015; Deci & Ryan, 2017; Pascoe et al., 2018; Mayer et al., 2018).

3. Research Methodology

(1) Research subjects

The present study has selected 416 English majors from Grade One, Two and Three in Zaozhuang University as the research subjects. Among them, there are 123 English majors in Grade One, 158 in Grade Two, and 135 in Grade Three. In terms of gender difference, there are 49 male English majors and 367 females respectively.

(2) Research questions and hypothesis

① How do the personality traits, self-efficacy, learning motivation and academic performance correlated for the English majors?

② In terms of personality traits, learning motivation and self-efficacy, are there any differences existing in grade and gender?

③ In what way can the personality traits, self-efficacy and learning motivation predict their academic performance?

Based upon the third question, seven specific hypothesis are posed accordingly, which are the essential aspects of the present study.

① The personality traits of agreeableness, conscientiousness and openness will be correlated with English majors' academic performance in a positive manner.

② The personality traits of agreeableness, conscientiousness and openness will be correlated with autonomous motivation in a positive manner.

③ The personality traits of agreeableness and conscientiousness will be correlated with controlled motivation in a negative manner.

④ Autonomous motivation will be correlated with English majors' academic performance in a positive manner. On the contrary, the controlled motivation will be correlated with academic performance in a negative manner.

⑤ Conscientiousness will predict English majors' self-efficacy.

⑥ Learners' self-efficacy will be correlated with autonomous motivation in a positive manner.

⑦ English majors' self-efficacy will be correlated with academic performance in a positive manner.

(3) Model proposed

The current study put forward the following hypothesized model as so to demonstrate the comparatively complex relationship among the multiple variables, i.e., three personality traits of agreeableness, conscientiousness &openness, self-regulatory efficacy, controlled motivation, autonomous motivation and academic performance. The present study will take advantage of SEM (Structural Equation Modelling) and its path model statistical approach, in order to conduct the test for the goodness-of-it. The proposed model and its path model coefficients will be presented in the results and discussion part.

(4) Research instruments

① Academic performance

English majors' academic performance is measured via composite aspects, which is based upon the grade-point average (GPA) composed of the scores of mid-term exam, final exam and daily performance of 2019-2020 academic year.

② Personality questionnaire

The present study selected NEO-FFI (NEO-Five Factor Inventory, McCrae & Costa, 2004) measuring English majors' big five personality traits, which is made up of 60 items. The author selected the 36 items regarding conscientiousness, agreeableness and openness.

③ Learning motivation questionnaire

The present study selects learning self-regulation questionnaire (SRQ-L, Ryan & Connel, 1989) as the instrument measuring English majors' learning motivation. The SRQ-L focuses on the reasons why people learn. Two major subscales are involved, i.e., controlled adjustment and autonomous adjustment. Self-regulatory efficacy questionnaire

④ Self-regulatory efficacy questionnaire

The present study selects general self-efficacy scale (GSES) as the instrument measuring English majors' self-regulatory efficacy, which includes 10 items and adopts Likert 4 point scale.

4. Results and Discussion
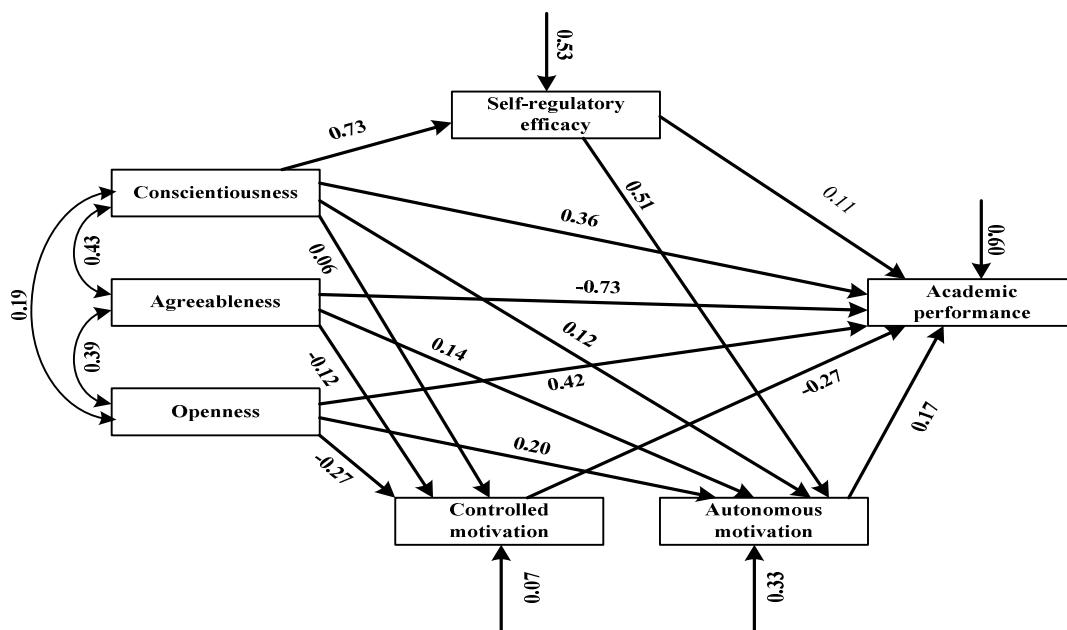
Fig 1. Final path model with standardized path coefficients provided

According to the underlying mechanism of SEM and recursive path model, the results are satisfactory, for the fit indices in the present proposed model demonstrate a good fit, specifically speaking, χ^2 (9, N=416) = 15.216, p = .085, RMSEA=.066, CFI=.98, and TLI=.96, whose path coefficients are statistically significant.

As for the first research question, it is about "How do the personality traits, self-efficacy, learning motivation and academic performance correlated for the English majors?". Pearson's correlation coefficients, namely, bivariate correlation was utilized to test the two-two relations among all the variables. It can be conspicuously observed that all the three personality traits of agreeableness, conscientiousness and openness have exerted significant and positive influence upon English majors' academic performance. In terms of the relationship between the three personality traits and regulatory self-efficacy, there also exhibits significant association, for r=0.263, and p<.000. And the similar situation between three personality traits and autonomous motivation can

be found. In addition, the self-regulatory self-efficacy and autonomous motivation have demonstrated positive association with students' academic performance. It is a little beyond our expectation that there exists no significant correlation between self-regulatory efficacy and English majors' academic performance, for $r=0.012$, $p>0.1$. Naturally and expectedly, Openness is significantly but negatively correlated with controlled motivation. And the controlled motivation presents significant but negative correlation upon English majors' academic performance.

With respect to the second research question, it is regarding "In terms of personality traits, learning motivation and self-efficacy, are there any differences existing in grade and gender?", two statistical methods of ANOVA and t-test are utilized in analysis. The results demonstrate that no significant differences were testified between differing grade levels regarding the three personality traits and the controlled and autonomous motivation. In terms of gender difference, it can be conspicuously observed that the female English majors score significantly higher concerning conscientiousness and significantly lower with regard to openness in comparison with their male counterparts. Other convincing findings are found as well. For example, female English majors exhibit more controlled motivation than that of their male counterparts. What's more, no significant differences can be found in terms of self-efficacy between differing grades and gender.

Concerning the third research question, i.e., "In what ways, can English majors' personality traits, self-regulatory efficacy and learning motivation predict their academic performance?", it can be simply interpreted as the mutual effect among the various factors, namely, English majors' personality traits, self-regulatory efficacy, learning motivation, and academic performance. In the current model proposed, the three factors of self-regulatory efficacy, the two motivational types of controlled motivation and autonomous motivation have been hypothesized to act as the mediating variables between English majors' personality traits and academic performance. By means of AMOS software and SEM, the recursive path model is applied to verify the seven hypotheses which form the third question. Generally speaking, the three personality traits of agreeableness, conscientiousness and openness present significant and direct effect on English majors' academic performance. More importantly, the indirect effects of these personality traits via the three mediating variables are examined and estimated in a detailed manner.

The first hypothesis held that the three personality traits of agreeableness, conscientiousness and openness could be significantly and positively correlated with English majors' academic performance. The results explicitly elucidate that the two personality traits of conscientiousness and openness significantly and positively associated with academic performance as hypothesized. As for agreeableness, it exhibited a negative effect to English majors' academic performance.

The second hypothesis intends to explore whether the three personality traits of agreeableness, conscientiousness and openness are significantly and positively associated with English majors' autonomous motivation. The results obtained from the path model connote that merely openness has a significant and positive path to autonomous motivation, for $r=0.22$, $p<0.01$. As for the contribution of conscientiousness to autonomous motivation, it was realized by the indirect effect via the mediating variable, i.e., self-regulatory efficacy. The results in hypothesis 2 illustrate that it is merely partially supported.

The third hypothesis argued that the two personality traits of agreeableness and conscientiousness should be significantly but negatively correlated with controlled motivation. The results from the path model demonstrate that there are no significant paths from agreeableness and conscientiousness to English majors' controlled motivation.

The fourth hypothesis put forward that autonomous motivation could be significantly and positively associated with English majors' academic performance, whereas controlled motivation could be significantly but negatively related to academic performance. The results from the recursive path model convincingly and thoroughly prop up the fourth hypothesis. It can be clearly observed that the standardized parameters in the final recursive model have brought about certain significant correlations. For instance, the path regarding autonomous motivation to English majors' academic performance is significant and positive, yet the controlled motivation generates a significant but negative path to their academic performance.

The fifth hypothesis aims to testify if the personality trait of conscientiousness is capable of significantly and positively predicting self-regulatory efficacy. The results from the recursive model strongly support the fifth hypothesis, as there exists a highly significant and positive path from conscientiousness to English majors' self-efficacy.

The sixth hypothesis intends to verify whether self-regulatory efficacy would be significantly and positively correlated with autonomous motivation. It can be conspicuously observed that a significant, strong and positive correlation between English majors' self-regulatory efficacy and autonomous motivation is found, which explicitly confirms the sixth hypothesis.

The seventh hypothesis proposed that self-regulatory efficacy could be significantly and positively associated with English majors' academic performance. The results from the path model explicitly demonstrate that there does not exist significant path concerning self-regulatory and English majors' academic performance. However, there is indeed an indirect effect brought about by autonomous motivation which plays its role between self-regulatory efficacy and English majors' academic performance.

5. Pedagogical Implication

Firstly, boosting English majors' self-regulated learning. In the current recursive path model, English majors with higher conscientiousness are prone to possess strong beliefs of self-efficacy in their study, leading to more autonomous goal pursuits and positively conducive to English majors' academic performance accordingly. Conscientiousness props up and optimizes academic performance, for its potential contents encompass planning, organization, practice and consolidation, the characteristics of which can be taught or trained in a systematic way. To achieve this, understanding and promoting effective self-regulation is of great importance. To increase the level of conscientiousness can probably strengthen English majors' beliefs in their self-regulatory efficacy. The focal point on the *how* of self-regulation is essential for university teachers, educators and parents to facilitate English majors to maintain themselves on the right path towards their expected academic outcome. In the light of the significant and strong correlation between self-regulatory demeanors and conscientiousness, the *how* of self-regulation probably tries to solve the question regarding how English majors' conscientiousness will be cultivated.

Secondly, developing English majors' autonomous motivation. The current study demonstrates a strong and significant correlation between self-regulatory efficacy and autonomous motivation, with the connotation that English majors having strong beliefs with respect to self-regulatory skills can put down learners' motivational actions to internal perceived locus of causality. Some scholars hold the view that the learning approaches which promote learners' self-regulatory skills can facilitate their autonomous motivation automatically owing to this relationship. Such belief is in harmony with the concept of autonomous self-regulation which was first applied by the self-determination theory scholars. Based upon this, one crucial connotation is that university teachers and educators should support and foster students' autonomous motivation in the process of teaching them self-regulatory efficacy skills. Autonomy-supportive teachers should value and inspire learners' autonomous motivation and self-determination on the one hand. At the same time, propping up students' demands the arrangement of interpersonal skills, which encompass taking the perspective of learners, acknowledging learners' inner feelings, etc.

Thirdly, promoting optimal development of learners' personality traits. University teachers and educators should well be taught and trained to facilitate English majors' optimal personality development. Even though investing in such large-scale interventions demand supportive policies with long term impact, it is feasible that university teachers and educators are trained in a systematic way to identify differing personality traits and their specific behavior indicators. As personality traits are crucial prerequisites of self-regulatory efficacy and learning motivation as well, university teachers and educators play an important part in reinforcing self-regulatory learning and cultivating inherent academic motivation and task involvement as well. What's more, teachers and educators should learn how to be more autonomously supportive with English majors. It should be noted that educational leaders and educational authorities have a core duty to make these prospects

happen effectively and successfully, who should provide proactive and forward-looking measures to cope with these requirements, so as to guarantee that the university teachers and educators are well-armed to combine self-regulatory skills and motivational resources into English majors' curriculum.

6. Acknowledgement

References

[1] Jung, K. R., Zhou, A. Q., & Lee, R. M. (2017). Self-efficacy, self-discipline and academic performance: Testing a context-specific mediation model. *Learning & Individual Differences*, 60, 33-39.

[2] Laidra, K., Pullmann, H.& Allik, J. (2007). Personality and intelligence as predictors of academic achievement: A cross-sectional study from elementary to secondary school. *Personal. Individ. Differ.* 42, 441–451.

[3] Lounsbury, J. W., Sundstrom, E., Loveland, J. M., & Gibson, L. W. (2003). Intelligence, "Big Five" personality traits, and work drive as predictors of course grade. *Personality and Individual Differences*, 35, 1231-1239.

[4] Mayer, K., Mayer, P., Lenhardtova, M., Bolfikova, E., & Lukac, E. (2018). Consequences of parenting impact in context with motivation for differentiation of academic performance at adolescents. *Journal of Interdisciplinary Research*, 8(2), 166-171.

[5] McCrae, R. R., & Costa, P. T. (1999). Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) manual. *Journal of Applied Psychology*, 96, 1140-1166.

[6] McCrae, R. R., & Costa, P. T. (2004). A contemplated revision of the NEO Five-Factor Inventory. *Personality and Individual Differences*, 36, 587-596.

[7] Saxena, M. & Mishra, D.K. (2015). A study of the relation between personality type & academic successes. *Drishtiikon: A Management Journal*, 6, 23-40.

[8] Schnell, K., Ringeisen, T., Raufelder, D., & Rohrmann, S. (2015). The impact of adolescents' self-efficacy and self-regulated goal attainment processes on school performance – do gender and test anxiety matter? *Learning and Individual Differences*, 38, 90-98.

[9] South, S. C., Jarnecke, A. M., & Vize, C. E. (2018). Sex differences in the Big Five model personality traits: A behavior genetics exploration. *Journal of Research in Personality*, 74, 158-165.

[10] Talsma, K., Schüz, B., & Norris, K. (2019). Miscalibration of self-efficacy and academic performance: Self-efficacy ≠ self-fulfilling prophecy. *Learning & Individual Differences*, 69,182-195.

[11] Vitulic, H.S. & Zupancic, M. (2013). Robust and specific personality traits as predictors of adolescents' final grades and GPA at the end of compulsory schooling. *Eur J Psychol Educ*, 28, 1181-1199.