Which factors best account for academic success: Those which college students can control or those they cannot? ☆

Stephen J. Dollinger *, Anna M. Matyja, Jamie L. Huber

Department of Psychology, Southern Illinois University, 1125 Lincoln Drive, Mail Code 6502, Carbondale, IL 62901, USA

Available online 5 December 2007

Abstract

This study integrates research linking academic performance with individual differences and class attendance. Whereas individual differences (ability, traits) are not controllable by students, students can control their attendance, study and work. Thus we sought to determine the extent to which "control" and "no control" variables predict academic performance. With $N = 338$, measures of verbal ability, the five-factor model, GPA, academic goals, and study behavior were used to predict exams, attendance, and independent projects completed. Uncontrollable factors accounted for 37% of the variance in exam scores; controllable factors accounted for an additional 6–10%. We also found an interaction such that, relative to low-ability peers, high-ability students' attendance most enhanced their exam performance. Attendance was best accounted for by GPA, study and work. Projects were best predicted by *low* verbal ability and by personality traits.
© 2007 Elsevier Inc. All rights reserved.

Keywords: Academic performance; Attendance; College students; Conscientiousness; Verbal ability; Big five; Extra credit

1. Introduction

For decades, educational psychologists have examined the relation of class attendance and collegiate success. So too, for many years, individual differences researchers have studied the factors which predict academic achievement (De Raad & Schouwenburg, 1996). The present research attempts to integrate these lines of research by simultaneously examining the influence of factors which students presumably cannot control— their verbal intelligence, personality, and past performance—and ones over which they have choice and control—their class attendance, amount of study and part-time work, and their ultimate educational goals. We test for the effects of these factors on exam performance over two years in a single course and also examine the predictors of attendance and engagement in extra-credit projects.

1.1. Personality and academic achievement

In the last 10–15 years, there has been a surge of interest in achievement among personality researchers, particularly in terms of the "big five." Researchers in the United States, United Kingdom, Netherlands, and Canada have found that conscientiousness is a good predictor of grade point average (GPA) or specific course grades among college students (Busato, Prins, Elshout, & Hamaker, 2000; Chamorro-Premuzic & Furnham, 2003; Conard, 2006; Dollinger & Orf, 1991; Furnham & Chamorro-Premuzic, 2004; Lounsbury, Sundstrom, Loveland, & Gibson, 2003; Martin, Montgomery, & Saphian, 2006; Murgrave-Marquart, Bromley, & Dalley, 1997; Paunonen & Ashton, 2001; Peterson, Casillas, & Robbins, 2006; see Farsides & Woodfield, 2003 for an exception). Similar findings emerged for grade and high school youth in Croatia, Australia, and Estonia (Bratko, Chamorro-Premuzic, & Saks, 2006; Heaven, Ciarrochi, & Vialle, 2007; Laidra, Pullmann, & Allik, 2007). Conscientiousness remains a moderate predictor even when measures of verbal intelligence or academic ability have been included in the prediction model (e.g., Bratko et al., 2006; Conard, 2006).

These findings were underscored in a recent meta-analysis of the literature (O'Connor & Paunonen, 2007), showing that conscientiousness is the big-five factor most strongly and consistently associated with post-secondary academic performance. These authors reviewed 23 studies in which 33 sets of criteria were considered. Openness correlated positively in 8 instances, introversion in 6 (but extraversion in 1), low neuroticism in 3 cases; agreeableness had 3 significant positive and 3 significant negative correlations. However, conscientiousness correlated significantly in 20 of these 33 tests and had the largest estimated population correlation (.24). That the five-factor model can predict achievement is, of course, interesting to personality theorists and perhaps college admissions officers deciding whom to admit, but they are generally not useful to the students themselves or to faculty who advise students what it takes to succeed in a particular class. In other words, personality and intelligence, like past academic performance, are not under student control.[1] What may be useful, however, is to know whether conscientious students achieve better outcomes by virtue of their more consistent attendance or diligent study.

1.2. Integrating attendance into the model

A particular interest for us is the behavior of class attendance, a factor which can influence course performance and is clearly under student control. Despite decades of research, absenteeism continues to be a problem, perhaps even a growing problem for college students. Given the inflation of tuition costs, non-attendance is economically irrational, but students offer a variety of non-economic reasons to justify absence (e.g., Friedman, Rodriguez, & McComb, 2001; Sleigh, Ritzer, & Casey, 2002; Van Blerkom, 1992). Only two of the studies on personality and performance took this factor into consideration (Conard, 2006; Farsides & Woodfield, 2003). The present study contributes to the attendance–performance literature by taking into account several variables often omitted in past studies. In particular, we assess the predictors of exam performance in tandem with the predictors of attendance. Our interest was in comparing the incremental validity of factors that students can control over and above ones which they cannot (cf. O'Connor & Paunonen, 2007).

A number of studies have examined correlations between class attendance (or absences) and course performance. For nearly 80 years, researchers have found that class attendance predicts collegiate performance (Clump, Bauer, & Whiteleather, 2003; Gump, 2005; Jones, 1931; Rose, Hall, Bolen, & Webster, 1996; Shimoff & Catania, 2001). Of historical interest, Turner (1927) and Jones (1931) reported a negative relationship between students' number of classroom absences and their grade point average. Further studies over the next seven decades have replicated and extended these findings (Anikeef, 1957; Caffrey & Klugh, 1971; Clump et al., 2003; Rose et al., 1996; Schuman, Walsh, Olson, & Etheridge, 1985). The magnitude of relationships between attendance and performance has varied from quite small to large but the literature is not easily summarized due to a number of inconsistencies (e.g., predicting exam scores or final grades in specific courses, predicting overall GPA) and ambiguities (e.g., no detail about the criterion measure or whether attendance

---

[1] One might argue that if current grades can be influenced, GPA could have been influenced in the past. We treat GPA as "experientially out of control" in the sense that a student's past academic record is no longer changeable.