Learning and Individual Differences xxx (2016) xxx–xxx

Contents lists available at ScienceDirect

Learning and Individual Differences

journal homepage: www.elsevier.com/locate/lindif

Realistic job expectations predict academic achievement

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ARTICLE INFO

Article history:
Received 25 August 2015
Received in revised form 14 August 2016
Accepted 16 September 2016
Available online xxxx

Keywords:
Realistic job expectations
General mental ability
Predictive utility
Teacher education
Academic achievement

ABSTRACT

Individual differences in realistic job expectations – the degree to which realistic expectations about prospective education and job are held – were introduced as a potential predictor of academic achievement. Students in teacher education ($N = 176$) completed a test battery for college admission consisting of general mental ability, reactions to stress and coping with stress, and a structured interview assessing individual differences in realistic job expectations. Grade point averages of the entire three-year long bachelor's degree and students' bachelor thesis grades served as criterion variables. Grade point averages were calculated separately for courses fostering declarative and procedural knowledge. Declarative knowledge and students' bachelor thesis grades were predicted by individual differences in general mental ability, and realistic job expectations. Contrary, procedural knowledge was predicted by individual differences in reactions to stress and coping with stress, and realistic job expectations. The current study is the first to show this predictive utility of realistic job expectations.

1. Introduction

Meta-analyses have already identified several cognitive determinants of academic achievement, such as general mental ability (*g*: e.g. Hell, Trapmann, & Schuler, 2007; Kuncel, Hezlett, & Ones, 2001, 2004; Kuncel, Wee, Serafin, & Hezlett, 2010) and several non-cognitive determinants of academic achievement, for example personality traits (e.g. Poropat, 2009; O'Connor & Paunonen, 2007; Richardson, Abraham, & Bond, 2012). Yet, still a large portion of the variance in academic achievement remains unexplained. Therefore, there has been renewed interest in identifying determinants that may explain variance in academic achievement over and above well-established determinants (cf. Ackerman, Chamorro-Premuzic, & Furnham, 2011; Credé & Kuncel, 2008; Kuncel & Hezlett, 2007; Poropat, 2009; Richardson et al., 2012). In the present article we examine the predictive utility of a new potential determinant of academic achievement: the degree to which students hold realistic expectations about their prospective education and occupation.

1.1. Defining and measuring academic achievement

Grade point averages (GPA) are often considered as the golden standard for measuring academic achievement. Thus, most meta-analyses (e.g. Hell et al., 2007; Kuncel et al., 2001, 2004; Poropat, 2009; Richardson et al., 2012; Trapmann, Hell, Weigand, & Schuler, 2007) resort to GPAs to measure academic achievement. Furthermore, GPAs have been shown to predict occupational status (e.g. Strenze, 2007), salary level (e.g. Roth & Clarke, 1998), and job performance (e.g. D'Agostino & Powers, 2009; Roth, Be Vier, Switzer, & Schippman, 1996). In addition, studies suggest GPAs to be sufficiently reliable (ICC = 0.94: Bacon & Bean, 2006) and stable over time ($r_{tt} = 0.83$: Kuncel et al., 2004).

Several authors (e.g. Ackerman et al., 2011; Reeve, 2004; Reeve & Bonaccio, 2011) already noted that sometimes less effort is invested in defining and measuring criterion variables than in defining and measuring predictor variables. For example, GPAs seem to be the predominant criterion variable for academic achievement. Nevertheless, GPAs are not without shortcoming. It has been shown that GPAs obtained from later on in the education do not reflect differences between students as well as GPAs obtained earlier on (Reeve & Bonaccio, 2011). This might be due to individual differences in course choices and/or grading standards across and within institutions, which can lead to an underestimation of predictive validity of determinants of academic achievement (e.g. Ackerman et al., 2011; Berry & Sackett, 2009; Didier, Kreiter, Buri, & Solow, 2006; Elliot & Strenta, 1988; Reeve & Bonaccio, 2011). When considering GPAs, it therefore seems appropriate to examine GPAs of different academic years separately.

Furthermore, GPAs can be differentiated according to different courses types, e.g. courses for general knowledge, domain-specific knowledge, or applied courses (cf. D'Agostino & Powers, 2009; Gustafsson & Balke, 1993). There is evidence that GPAs obtained from different course types exhibit differential structural relations to determinants of academic achievement and occupational performance (cf. D'Agostino & Powers, 2009; Gustafsson & Balke, 1993; Reeve, 2004).

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http://dx.doi.org/10.1016/j.lindif.2016.09.010
1041-6080/

Similar results have been obtained for predicting apprentices' training success, where declarative and procedural knowledge have been shown to exhibit differential structural relations to cognitive determinants of academic success (e.g. Häusler & Sommer, 2006; Schmidt-Atzert, Deter, & Jaeckel, 2004). Distinguishing between declarative and procedural knowledge may be especially relevant when considering GPAs of more applied studies, such as teacher education. Teacher education world-wide involves student-teaching (Darling-Hammond & Lieberman, 2012), and GPAs of student-teaching courses can be seen as an instance of procedural knowledge (the course requirements are similar to future occupational performance: Kuncel et al., 2004). Furthermore, grades in student-teaching courses have a higher predictive utility for future teacher performance than grades of other courses (D'Agostino & Powers, 2009).

In addition to distinguishing between declarative and procedural knowledge, students' bachelor thesis grade could also serve as an additional differentiation of grades. Usually, every student has their own bachelor thesis topic, and a bachelor thesis needs to meet scientific quality standards. This sets bachelor thesis grades apart from course grades, as students need to transfer previously acquired knowledge, need to acquire new knowledge on their bachelor thesis topic, and have to do so autonomously. Additionally, the bachelor thesis constitutes the final and necessary step for degree completion, and degree completion has been treated as an additional measure of academic success (cf. Kuncel & Hezlett, 2007).

1.2. Cognitive determinants of academic achievement

g is one of the most important determinants of academic achievement (e.g. Credé & Kuncel, 2008; Hell et al., 2007; Kuncel & Hezlett, 2007; Kuncel et al., 2001, 2004; Kuncel et al., 2010). Although its predictive utility seems to be highest for academic achievement measured after the first academic year ($0.34 \leq \rho \leq 0.45$: Kuncel & Hezlett, 2007; Kuncel et al., 2001, 2004; Kuncel et al., 2010; Reeve & Bonaccio, 2011), *g* continues to predict academic achievement up until the very end of tertiary education ($0.20 \leq \rho \leq 0.24$: Kuncel & Hezlett, 2007; Kuncel et al., 2010). Several authors (e.g. Ackerman et al., 2011; Reeve & Bonaccio, 2011) argued that this decrease in the predictive utility of *g* may be attributable to an increase in individual differences in course choices and differential grading standards over the academic years. Thus, grades obtained later on in tertiary education are more confounded by construct-irrelevant variance, which subsequently decreases the predictive utility of *g*.

1.3. Non-cognitive determinants of academic achievement

Studies (e.g. Ackerman & Heggestad, 1997; Farsides & Woodfield, 2003; O'Connor & Paunonen, 2007; Paunonen & Ashton, 2001; Poropat, 2009) indicate that personality traits predict academic achievement. Conscientiousness ($\rho = 0.22$), openness ($\rho = 0.12$), and agreeableness ($\rho = 0.07$) have been demonstrated to be such non-cognitive determinants of academic achievement (Poropat, 2009). While the predictive utility of personality traits is smaller than that of *g*, it prevails even when accounting for *g* (e.g. Farsides & Woodfield, 2003; Poropat, 2009).

Facets of conscientiousness and openness even outperform their respective Big Five factor domains in predicting academic achievement (cf. O'Connor & Paunonen, 2007; Paunonen & Ashton, 2001). This indicates that facets of the Big Five domains may be differentially linked to academic achievement. This may also be the case for emotional stability, which has been often hypothesized to predict academic achievement (cf. Ackerman & Heggestad, 1997; Farsides & Woodfield, 2003), while failing to do so ($\rho = 0.02$: Poropat, 2009). Emotional stability comprises several facets such as anxiety, angry hostility, depression, self-consciousness, impulsiveness, and vulnerability or stress tolerance (for an overview: Arendasy, Sommer, & Feldhammer, 2011; Costa & McCrea, 1995). Some of these facets are related to academic achievement (e.g. test anxiety: $-0.21 \leq \rho \leq -0.33$; reactions to stress: $-0.11 \leq \rho \leq -0.14$; Ackerman & Heggestad, 1997; Hembree, 1988; Richardson et al., 2012), while others are not (e.g. depression: $\rho = -0.03$: Richardson et al., 2012). These different predictive utilities of emotional stability facets may explain why studies failed to support the predictive utility of emotional stability.

Consequently, more specific facets of emotional stability may be useful for predicting academic achievement. For instance, the emotional stability facet *reaction to stress* (cf. Ackerman & Heggestad, 1997) may be a determinant of success in the teaching profession, where stress and burnout are prevalent (e.g. Schaarschmidt, 2005; Schaarschmidt & Kieschke, 2007). Indeed, teachers' stress has been linked to important student behaviours, such as not paying attention in class ($r = 0.39$) and hostility toward the teacher ($r = 0.40$: Geving, 2007). Furthermore, strategies for *coping with stress* have been shown to be related to grades in student-teaching courses (Rieder, 2011). Unfortunately, there are currently no studies examining the predictive utility of selected emotional stability facets for predicting more conventional criteria of academic success, such as GPAs.

1.4. Realistic job expectations

The accuracy of students' expectations of their educational and professional career may be another important determinant of academic success. Students do not always hold realistic expectations of studying at university, and providing them with more realistic information on what to expect reduces attrition (e.g. Braxton, Vesper, & Hossler, 1995; Cooke, Sims, & Peyrefitte, 1995; Earnest & Dwyer, 2010). Providing students with such realistic information lowers the initial expectations, and increases self-selection, organizational commitment, satisfaction, and possibly even academic achievement (e.g. Braxton et al., 1995; Cooke et al., 1995; Earnest & Dwyer, 2010). Actually, this strategy was adopted from a recruitment method used by organizations: *realistic job previews* (cf. Phillips, 1998; Premack & Wanous, 1985; Rynes, 1991). Providing realistic job previews influences how initial expectations are met, which in turn influences job satisfaction, organizational commitment, the intent do leave, job survival, and moderately job performance (e.g. Wanous, Poland, Premack, & Davis, 1992). In the same way, when students have more accurate expectations, it should lead to having better met expectation, which in turn may affect academic achievement. Unfortunately, most studies so far conducted in the academic context used an intervention design and solely focused on increasing the accuracy of students' expectations regarding more general aspects of studying at university. It therefore might be useful to evaluate, whether individual differences in students' expectations about their prospective educational and occupational career – realistic job expectations (RJE) – have predictive utility in explaining individual differences in academic achievement.

1.5. Formulation of the problem

In the present study, the predictive utility of RJE for academic achievement was examined in the context of teacher education. This specific domain was chosen due to the applied nature of its curriculum, which allows differentiating academic achievement into declarative and procedural knowledge. In addition, there are renewed efforts to improve teacher education in Austria and interest in selecting successful teachers rose in the last few years (Mayr, 2012). The next section outlines the research hypotheses with regard to the measurement of the criterion variable *academic achievement* and the predictive utilities of the determinants.

1.5.1. Hypotheses regarding the measurement of academic achievement

Prior research (e.g. Reeve & Bonaccio, 2011) suggested that grades have a higher saturation of construct-relevant variance in the first

Please cite this article as: Krammer, G., et al., Realistic job expectations predict academic achievement, *Learning and Individual Differences* (2016), http://dx.doi.org/10.1016/j.lindif.2016.09.010