IN SEARCH OF EFFECTIVE STUDENT SELECTION INDICES IN HIGHER-EDUCATION: GOING BEYOND SCHOLASTIC ACHIEVEMENT

INTRODUCTION

As academic education systems provide service to ever growing numbers of students, educators and educational policy makers in the US as well as other countries around the globe (Israel which is the target population of the current study included) are seeking effective means of screening and selecting students for various academic programs (Harris and Owen, 2007; Marnewick, 2012; Morris, 1999). Academic attainment in previous studies as well as cognitive/academic aptitude take precedence in most settings, but researchers as well as leaders in various academic settings are acutely aware of the need to broaden the palette of measures and tools to assess candidate fit to study programs they enroll in (e.g.: Harris and Owen, 2007; Hughes, 2002).

Students in academic programs often report high levels of stress (Beiter et al., 2015) and dropout rates, especially in graduate programs, are alarming (Stinebrickner and Stinebrickner, 2014). Moreover, academic studies that also prepare students for a future profession (e.g.: psychology, nursing, education, engineering, etc.) often pose professional and interpersonal challenges to students, for which they are not prepared nor screened for – a fact that often results in additional dropout during field-studies or practicum periods. This might mean that numerous students are enrolled in programs that do not match their interests, abilities and coping skills.

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Organizational theory and research in human resources management have yielded robust evidence as to the utility and validity of psychological tests used for employee screening and selection: Two seminal reviews by both Schmidt and Hunter (1998) and Salgado and others (2003) as well as more recent evidence from around the globe (e.g.: Barros et al., 2014) do suggest that while measures of general mental ability are the best single predictors of performance, they account for about 25% of the variance in the outcome measures. That leaves a lot for additional approaches and measures that are not necessarily based on cognitive abilities and skills. However – such measures and approaches are rarely used in academic settings and when they are – it is usually by means of interviews, considered problematic in the organizational literature (Levashina et al., 2014).

Traditional predictors of student performance, especially matriculation grades or high-school grades show poor predictive validity of academic performance, as sole predictors of future academic performance (e.g.: Navon, Cohen & Brunner, 2008; Marnewick, 2012). The psycho-educational literature describes numerous attempts to design and implement effective and fair predictors of academic performance. Most academic programs, in Israel (where this study takes place) as well as numerous EU member countries and the US, among others, still rely on high-school diplomas or equivalents as well as measures of cognitive and academic aptitude as the main factors in decisions regarding acceptance or rejection of candidates.

1. ADDITIONAL PREDICTORS OF ACADEMIC ATTAINMENT: COGNITIVE AND NON-COGNITIVE PERSPECTIVES

Empirical evidence supports the major contribution of intelligence and cognitive ability-related measures to the prediction of academic performance (Laidra, Pullmann & Allik, 2007; Oren, Kenneth-Cohen & Brunner, 2007). The most common measure addressing these aspects in the formal education system is the psychometric examination (e.g.: SAT in the US; the Psychometric examination in Israel, the Baccalauréat in France, etc.). These standardized tests are updated yearly and their validity is regularly tested and empirically supported (Kobrin, Patterson, Shaw, Mattern & Barbuti, 2008). Despite the impressive body of knowledge regarding the validity of combined high-school GPA and psychometric exams, evidence also suggests varying results in various settings and some issues with the tests’ fairness in terms of cultural and socio-economical biases.
In search of measures to assess personal compatibility, personality indices were tested as potential predictors of school and college performance. The first tools were adopted from early work in clinical and personality psychology, focusing mainly on projective personality tests (e.g.: sentence completion, drawings, The Thematic Apperception Test (TAT) etc.). These measures, taken out of their original context did not show the predictive validity hoped for. Recent studies focused on measures derived from the ‘five factor’ model of personality (e.g.: Komarraju, Karau & Schmeck, 2009; Laidra, Pullmann & Allik, 2007; Wagerman & Funder, 2007). While personality measures add to the explained variance in academic achievement they may be perceived as too intrusive or irrelevant in some academic settings, and their validity in these settings questionable.

More specific concepts that link personality constructs and the organizational domain relate to vocational interests. These represent personal orientation and interest in specific domains (e.g.: service, analytic, etc.) that may draw individuals to certain fields of studies and work (Holland, 1959). This approach relies on personality-like typology of both individual preferences and motivations, and of jobs’ characteristics and demands. Depending on specific model, theorists have divided most professional fields into 6-8 types. The evidence supports’ the model’s utility in predicting individuals’ satisfaction, tenure and even burnout on the job – showing that individuals working in jobs congruent with their own preferences fair better than those who don’t (e.g.: Holland, 1996). While these concepts enjoy empirical support, they do not show high predictive validity with performance and attainment measures.

Another type of measures borrowed from organizational and personnel psychology was the assessment center (AC): This is a behavioral test focusing more on actual performance patterns and interpersonal relationships vis-à-vis group and individual goals (Thornton and Rupp, 2006). Not surprisingly, ACs showed adequate validity but require specific tailor-made designs for each program, and exact a toll on the organization that many academic institutions are just not ready to pay.
2. EMOTIONAL INTELLIGENCE AND ACADEMIC PERFORMANCE

The need to acknowledge and consider emotional factors in the prediction of performance (be it at work or in school) has been addressed in the literature by authors from the fields of education, political science, psychology and organizational sciences (e.g.: Fisher and Ashkanasy, 2000; Kozak, 2008). However, attempts to integrate emotional measures in the selection of candidates to academic programs have been anecdotal at best: Medical schools attempted adopting various interview formats to assess personal and interpersonal characteristics of future students, as well as graduate programs in psychology, social work and other professions laden in intra- and inter-personal labor (e.g.: McDaniel et al., 1994; Pau et al., 2013). What seemed to be missing was a unifying concept that will make assessment and validation more practical.

A relatively new concept introduced into the arena of predictors of academic performance is that of Emotional Intelligence (EI). Individuals’ ability to identify, integrate emotions into thought, analyze and manage emotions effectively is often thought to add to our understanding of everyday human behavior above and beyond cognitive and personality factors (Mayer, Salovey & Caruso, 2000). EI appears in the literature using conceptualization and measurement relying on two separate traditions: On one hand there is Ability-EI relating to individuals’ abilities to identify emotions, integrate emotional information in thinking and problem solving, dealing with complex emotions and regulating emotions (Mayer, Salovey and Caruso, 2008). Trait-EI on the other hand sees the concept as an amalgam of personality traits related to individuals’ flexibility and emotional adaptability, based on emotional attentiveness, empathy and awareness of self and others (Petrides and Furnham, 2001).

Existing evidence provide an inconsistent picture: while some studies find significant association between EI and academic attainment in college, others fail to do so (e.g.: Libbrecht et al., 2014; O’Connor & Little, 2003; Parker, Summerfeldt, Hogan & Majeski, 2004). One possible explanation to these inconsistencies focuses on the type of measures used: Current measures of EI may be divided into two methodological approaches. As suggested above, The first is based on the tradition of personality assessment and relies on self-report questionnaires asking individuals to rate their own emotional intelligence (Bar-On, 2000). The second builds on traditions borrowed from ability testing methods and relies on test formats in which individuals are requested to analyze and provide ‘correct’ or ‘effective’ answers to problems within the content matter (Mayer, Salovey & Caruso, 2000).
Preliminary evidence suggests self-report measures of EI may be closely associated with personality factors and therefore add little beyond existing measures to the prediction of academic performance. Ability based tests of EI may hold better promise in this venue (Mayer, Salovey & Caruso, 2000; O’Connor & Little, 2003). The question lingers then – is EI a valid and applicable construct and measure in the context of student selection in academia?

3. THE CURRENT STUDY

ISRAELI HIGHER EDUCATION SETTINGS

The Israeli higher education system serves over 100,000 students every year and is divided in 3 sections: 8 state-backed and run research universities, offering a full range of programs from undergraduate to doctoral studies; 47 colleges (of which 21 are state run and the rest are private) offering a mix of professional, undergraduate and Masters’ level programs and 21 teacher and education colleges (also offering specialized undergraduate and Masters’ level programs aimed exclusively at teachers and education professionals) (Israel council of higher education, 2014). While each program is sovereign to determine its own standards for student acceptance the generally acceptable norm is a combination of high-school or previous studies (prep school, previous academic studies) GPA and/ or an entry psychometric exam, administered by a central state-nominated body, that is widely considered a valid assessment of candidates’ learning skills (National institute for testing and evaluation, 2017). While some programs (especially graduate level programs such as psychology, community medicine, etc.) choose to add non- cognitive assessment elements to their candidate selection procedures, including interviews, brief assessment centers and specific skill tests (e.g. in art of architecture), they are more the exception than the rule.

THE STUDY RATIONALE AND HYPOTHESES

This study explored the associations between 3 types of predictors of academic performance with students’ College GPA: High-school GPA, a psychometric exam and two measures of EI were used as correlates of students’ reported GPA in college. The two measures of EI were chosen to represent the different approaches to measuring EI: a-self-report questionnaire and an ability EI test.

Existing research addresses this issue sporadically, and is yet to provide a comprehensive picture of how EI, past achievement and cognitive ability work
together to predict College performance. An example of such research is a study by Zysberg, Levy & Zisberg (2011) who showed EI was a strong predictor of Nursing students’ care-oriented performance during their training. Vidal-Rodeiro and colleagues (2011) also showed that successful students reported higher levels of EI compared to less successful students.

It was therefore hypothesized that while high-school GPA will have a weak unique contribution to the explained variance in College GPA, the psychometric exam and EI will significantly associate with College grades.

4. METHODS

Sample

A sample of 126 students attending college in Northern Israel took part in this study. The mean age was 24.07 (sd= 2.43), 31 (about 25%) were men and 95 (75%) were women. Sixty percent of the sample reported being single and the rest reported being in a stable relationship/ married. The vast majority (92%) was Jewish, 2% were Muslim and 6% were Christian. The participants were all attending undergraduate programs in the social sciences: Most of them from the education department, with others in the psychology and human services departments.

MEASURES

Academic indicators

The students reported their College GPA (on a scale ranging 0-100), a common grading system in Academic institutions in Israel, based on the percentages of ‘correct answers’ or and indicators of attainment out of a “perfect” 100% maximum grade. Their Psychometric exam grade (standardized grades range around a mean of 500 and the s.d. is 100) and their high-school GPA (as calculated for acceptance to College).

Emotional Intelligence

SEIS (Schutte et al., 1998) is a 33-item self-report measure of EI. Statements refer to individuals’ perception of their own emotional abilities. Responses are provided on a Likert-style scale. The scale shows adequate psychometric properties in the literature.

AVEI (Zysberg, Levy & Zisberg, 2011) is a 27-item computerized audio-visual test of emotion perception and analysis. The test presents test-takers with still- images and short video clips of persons interacting in various settings and
situations. Test takers are asked to identify the emotions experienced by target characters in the presented images. The test was found in previous research to be adequately reliable and to correlate with criteria theoretically associated with the concept of EI (see also: Zysberg, 2011).

Demographic data was collected by a short questionnaire specifying age, gender, marital status, program of study etc.

Procedure

The participants volunteered to participate in a study “about various aspects of students’ life”, responding to ads posted on campus. Participation guaranteed entry into a draw of a monetary prize of about 150 US$. Filling out the questionnaires, and taking the AVEI took about 20 minutes. None of the participants withdrew from the study. The data was analyzed using the IBM-SPSS 19.0 software package.

5. RESULTS

Table I presents the descriptive statistics and inter-correlations among the main study variables.

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<th>Mean</th>
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<th>2</th>
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<tr>
<td>Psychometric exam</td>
<td>602.90</td>
<td>100.80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>High-school GPA</td>
<td>95.00</td>
<td>7.90</td>
<td>.48**</td>
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<td></td>
<td></td>
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<tr>
<td>College GPA</td>
<td>86.75</td>
<td>5.76</td>
<td>.38**</td>
<td>.18*</td>
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<td></td>
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<tr>
<td>AVEI</td>
<td>17.61</td>
<td>3.72</td>
<td>.22**</td>
<td>.49**</td>
<td>.38**</td>
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<td></td>
</tr>
<tr>
<td>SEIS</td>
<td>2.04</td>
<td>.35</td>
<td>.08</td>
<td>.08</td>
<td>-.10</td>
<td>.09</td>
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*p<.05 **p<.01
The preliminary analyses show associations between most of the study variables (with the exception of the self-report EI questionnaire). A weak yet significant association was found between high-school grades and College GPA, and moderate to high associations between the psychometric exam (equivalent of the American SAT, for example) and College GPA – though weaker than typically reported elsewhere. Interestingly the AVEI correlated with both academic indices (high school and College GPA), while the SEIS did not.

Next, all 4 correlates were entered in a regression analysis with College GPA as the criterion, to examine each one’s unique contribution. Table II summarizes the main results of the analysis.

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<tr>
<td>Psychometric exam</td>
<td>.22</td>
<td>1.87*</td>
</tr>
<tr>
<td>High school GPA</td>
<td>.09</td>
<td>.78</td>
</tr>
<tr>
<td>AVEI</td>
<td>.27</td>
<td>2.17**</td>
</tr>
<tr>
<td>SEIS</td>
<td>-.15</td>
<td>-.86</td>
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*p<.05  **p<.01
Multiple R=.42 ; p<.01

The analysis indicated that of the 4 indices, only the Psychometric exam and the AVEI showed significant contribution to the variance in College GPA.

6. DISCUSSION

The discontent of educators and researchers in higher education with high-school grades as predictors of academic performance is widely evident (e.g.: Marnewick, 2012). The need for a theoretically and empirically driven model of applicant selection is dire, and though it may vary from one program to another, one cultural setting to another, evidence presented here and elsewhere (Vidal, Romero, Emery, & Bell, 2011; Zysberg, Levy & Zisberg, 2011) point to the
potential role of ability-EI in predicting College performance side by side with general mental abilities (psychometric exams).

Students cope with a broad range of challenges: from academic-cognitive tasks to coping with new social settings, coping with interpersonal and intrapersonal challenges inherent in the profession they are learning (caring for other individuals, communicating in an effective manner in teams, etc.) and new emotional hardships. While cognitive indices are paramount in predicting academic attainment and effective problem-solving, Emotional intelligence may account for social and emotional adaptation in college, reflected in higher performance.

This study is merely a preliminary test of the cognitive-emotional hypothesis in this specific context. The moderate sample size, cultural settings from which it was extracted and its correlational nature, should be considered when interpreting the results. It however, points in a direction that may stimulate future research to produce additional evidence that may lead to the formation of a coherent and applicable model of student selection.

Based on the results shown here and the existing literature future studies may examine a statistical model’s predictive validity vis-à-vis not only academic grades but also assessments of professional preceptorship, field-studies and other settings associated with the personal and professional development of students preparing themselves toward care-related professions like pedagogical professions, psychology, social work, as well as the medical and health professions and fields with a substantial component of team-work or service orientation. Assuming that future studies will corroborate the findings shown here, it seems like the most effective model of student screening and selection for academic programs should integrate validated measures of general mental ability alongside measures of personal and interpersonal adeptness, namely – emotional intelligence.

7. CONCLUSIONS FOR PEDAGOGICAL APPLICATIONS

The results presented herein, join additional recent evidence from around the globe associating emotional and interpersonal abilities (in this case we focused on EI as a unifying theoretical and measurement framework) with academic attainment (e.g.: Vidal-Rodeiro et al., 2012; Zysberg, Levy and Zisberg, 2011). The evidence suggests that EI adds to the prediction of academic performance above and beyond traditional cognitive indices (GPA, psychometric measures). The assumption is that academic studies involve not only cognitive processes,
information processing, problem solving and gradual accommodation of reasoning as part of developing academic skills. They also involve social interaction, coping with stress and conflicting demands as well as tasks derived from the professional requirements of the program of study (e.g.: teaching, psychological counseling, service provision, etc.) for which EI may account, beyond scholastic skills. Figure 1 graphically summarizes the above assumptions.

How can this model help shed light on new directions for pedagogical practice in higher education?

a) Screening and candidate selection practices. Measures of emotional and interpersonal abilities may be integrated in selection batteries on top of existing more traditional scholastic measures. Recent, preliminary evidence suggests such modular selection batteries add to the validity of candidate selection vis-à-vis both academic and professional criteria (e.g.: Zysberg and Zisberg, 2017).

b) Curriculum development. While many academic programs involving professional training heavily laden in interpersonal interaction (education, psychology, nursing, etc.) do offer coursework and workshops focusing on interpersonal skills, the current findings suggest such coursework may be of even more importance than previously thought. Development on new sequences in academic programs addressing intrapersonal and interpersonal aspects of professional conduct as well as personal growth as budding professionals as a core section of students’ academic studies and development.

c) Assessment of outcomes in higher education. Emotional and interpersonal aspects of everyday function were often regarded as too abstract and
vaguely defined to serve as basis of outcome measures in practice and education related contexts. Current measures of EI however provide a brief, valid set of tools to assess such outcomes, and follow up on individuals’ growth, development and coping patterns in academic and professional training settings, much like we traditionally follow up on their scholastic performance and attainment.

Should future studies support the trend emerging from the current as well as other studies, educators and administrators in higher education may gain better insight not only of the technical aspects of factors associated with academic performance but also perhaps of the underlying developmental and psychological processes students experience in the process of gaining an academic education and all that it represents.

REFERENCES


IN SEARCH OF EFFECTIVE STUDENT SELECTION


W POSZUKIWANIU EFEKTYWNYCH WSKAŹNIKÓW SELEkcji
STUDENTÓw W SZKOLNICTWIE WYŻSZYM:
WYKRACZAJĄC POZA OSIĄgnięCIA W NAuce

S t r e s z c z e n i e

Podjęcie studiów na wyższej uczelni jest prawdziwym wyzwaniem, z którym jednostki radzą sobie z większym lub mniejszym powodzeniem. Pomimo wysokiego poziomu stresu u studentów z Izraela, USA, a także kilku krajów UE, oraz w wielu przypadkach alarmującej liczby osób przedwcześnie rezygnujących z nauki, uniwersytety i college’a opierają się na arytmetycznej średniej ocen w szkołach średnich, a czasem na ogólnym teście zdolności umysłowych (np. test SAT, egzaminy psychometryczne) w celu oceny adekwatności kandydatów do programu oferowanych przez nie studiów. Takie podejście pomija jednak osobiste i interpersonalne czynniki, które mogą ułatwiać lub hamować rozwój jednostek zarówno jako przyszłych naukowców, jak i specjalistów w wielu dziedzinach, szczególnie w przypadku programów opiekuńczych (np. psychologia, edukacja, praca socjalna). Istotną rolę odgrywa niedawno wprowadzona koncepcja inteligencji emocjonalnej, bowiem wyznacza ona ramy dla naszego zrozumienia pozapoznan-
IN SEARCH OF EFFECTIVE STUDENT SELECTION INDICES IN HIGHER-EDUCATION: GOING BEYOND SCHOLASTIC ACHIEVEMENT

Summary

Academic studies are a demanding challenge, and individuals cope with it with varying levels of success. Despite the evidence of high levels of stress among college students in Israel, the US as well as a few EU countries, and in many cases alarming rates of dropout, universities and colleges rely on high school GPA and at times, a general mental ability test (e.g.: SAT, psychometric exams) to assess candidates’ suitability to their program of study. Such approach, however, ignores personal and interpersonal factors that may facilitate or hinder individuals’ development as both scholars and budding professionals, especially in care-related programs (e.g.: psychology, education, social work, etc.). The recently introduced concept of emotional intelligence holds promise as a framework for our understanding of individuals’ non-cognitive potentials for adaptation and effective performance. This preliminary study examines cognitive ability alongside emotional intelligence as two effective selection criteria for higher education. A sample of 126 College students located in Israel reported their high-school, psychometric exam and College GPA grades and filled out two measures of emotional intelligence: a self-report and an ability test format. The results showed the psychometric exam and the ability EI measures associated significantly with College GPA, while high-school and self-report EI grades did not. The results are briefly discussed to draw preliminary conclusions and elicit future research in this venue.

Key words: predictors of college performance; GPA; high-school grades; psychometric exam; emotional intelligence.