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The Psychometric Entrance Test: Lecturers' Perceptions and Attitudes Concerning the  
Nature of Higher Education Admission Exams in Israel

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## Abstract

The Psychometric Entrance Test (PET) in Israel is a standardized test, generally taken as a higher education admission examination. The PET is administered by the Israeli National Institute for Testing and Evaluation and is a very serious consideration for university and college<sup>1</sup> admission. The main debate concerning the administration of the PET exam revolves around the issue of its validity: Does it actually have the capacity to predict an applicant's success in his or her academic studies? Critics of the psychometric entrance test claim that its essence and structure fail to reflect the aptitudes and qualifications required for academic accomplishments, especially in a divergent society. Supporters claim that the psychometric entrance test has negligible flaws in predictive test validity across varying cultural groups and has proven to be an effective sorting and classification tool for academic institutes. The aim of this study was to present lecturers' perceptions and attitudes concerning the Psychometric Entrance Test (PET) in Israel. Findings indicate that most university lecturers find the PET redundant for purposes of academic classification and unreliable for academic prediction, and that the PET causes students to spend money and time preparing for the exam rather than for their future academic studies.

*Key words:* Psychometric Entrance Test (PET), Testing and Evaluation, university and college lecturers.

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<sup>1</sup> In Israel, the term "college" usually encompasses either an institution for teacher education, a college of practical engineering or a private institution offering a variety of undergraduate and second degrees with emphasis on personal attention as well as practical experience.

## The Psychometric Entrance Test: Lecturers' Perceptions and Attitudes Concerning the Nature of Higher Education Admission Exams in Israel

### **Introduction**

The majority of the educational leaders in variety of academic institutes in the world are looking for a test that accurately measures the skills of a test-taker is at the core of a psychometrician's profession (Galli, 2001). In Israel, the Psychometric Entrance Test (PET) is a standardized test, generally taken as a higher education admission examination. The PET is administered by the Israeli National Institute for Testing and Evaluation and is a very serious consideration for admission academic studies in universities and colleges.

### **Sorting and Acceptance Methods of Higher Education Institutions in Israel – A Diachronic Overview**

Until the 1970s, each academic institution in Israel had the right to determine its own conditions for admission to the academic studies offered. For many years, the matriculation exams were the main criteria for both universities and colleges in Israel. The relative weight of the grades in the various disciplines changed over the years, mainly due to the higher “weighting” allocated for disciplines that had been learned at a higher level and hence required broader scope exams (Yogev & Avalon, 2000).

In the 1970s, following a significant increase in the number of applicants to Israeli universities, the need for additional sorting criteria arose. As a result, the National Institute for Testing and Evaluation (NITE) was established in 1981 by the Associated Heads of the Universities in Israel, in order to centralize the development and administration of admissions and placement tests. The founding of NITE made it

possible to bring together leading professionals in the field of psychometrics and measurement with a view to enhancing the quality and efficiency of university admissions testing on a national scale. Since then, NITE has been instrumental in the university admissions process, providing a uniform testing program (National Institute for Testing & Evaluation, 2014).

The first version of the PET – a paper and pencil test – was administered in 1983. The following year a decision was made to develop a computerized adaptive testing (CAT) based on item response theory (Gafni et al, 2009). Item response theory (IRT) treats the difficulty of each item as information to be incorporated in scaling items. The main purpose of IRT is to provide a framework for evaluating how well assessments work, and how well individual items on assessments work. Psychometric professionals use it for developing and designing exams maintaining banks of items, and comparing the difficulties of items for successive versions of exams (Hambleton et al, 1991). The need to minimize security risks such as cheating has limited the use of computerized adaptive testing to two applications only: PET for examinees with disabilities and English for placement purposes (Gafni et al, 2009).

The end of the millennium constituted a turning point in the need for accessibility and approachability of higher education. According to the report of a world conference on higher education in the 21st century initiated by UNESCO in Paris (1998), higher education should be equally accessible to all, on the basis of merit, in keeping with Article 26.1 of the Universal Declaration of Human Rights. Consequently, no discrimination is to be accepted in granting access to higher education on grounds of race, gender, language, religion or economic, cultural or social distinctions, or physical disabilities. Moreover, higher education should be

considered a public service. While diversified sources of both private and public funding are necessary, public support for higher education and research remains essential to ensure a balanced achievement of its educational and social missions.

In accordance with the 21<sup>st</sup> century education initiative of UNESCO in Paris, the method of an aggregate (cumulative) entrance score was implemented for the first time in 2003, combining the matriculation grades with the PET. This method was first approved in May 2002 as part of an agreement between the Ministry of Education, the Knesset<sup>2</sup> Education Committee and the Committee of University Representatives (Vininger & Tashner, 2014). In 2010, Israeli Knesset Members initiated a reform, and as of October 2012 the new format of the PET exam also includes a writing task in addition to the verbal reasoning section, the quantitative reasoning section, and an English Unit. The scoring scale ranges from 200 to 800.

In 2014, the joint forum of the Ministry of Education, the Council of Higher Education (CHE) and the representatives of all the universities and colleges in Israel set a new framework for admission to academic studies without the necessity of the PET. The new academic admissions and matriculation certificate form a new continuum from high school to the higher education system. According to the agreed outline, high-school graduates may attend universities and colleges based on matriculation only, as early as 2015. The new matriculation certificate will enable admission to a wide range of courses, including in engineering and science.

### **The Psychometric Entrance Test -- Arguments For and Against**

Most educators agree with the ideas that (a) not every person who wants to study a particular field domain must necessarily be accepted, and (b) academic

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<sup>2</sup> The Israeli parliament

institutions should filter students according to relevant criteria. As mentioned before, the PET developed mainly from the understanding that all Israeli academic institutions and all the departments within them should have a common test for all candidates that could predict academic performance. The test was also designed to rank all examinees on one standardized scale (NITE, 2014).

The major argument in favor of the PET stresses the importance of fairness throughout education processes. Buchanan and Mathieu (1986) claimed that all people have equal rights and all should be evaluated according to the same objective criteria. Accordingly, those who promote the use of the PET claim that people are not evaluated according to their previous knowledge and thus the psychometric test serves a “second chance tool” for pupils who, for various reasons, missed some formal education during their youth.

Studies show that the prediction of the test is good. Research has shown that examinees who received a high score on the PET usually succeed in their studies as compared with students who received a low score, and they obtain higher grades both at the end of the first academic year and in their BA certificate (Kenneth-Cohen et al 1999).

On the other hand, those who oppose the use of the exam claim that the PET is not objective and that it harms the process of equal opportunity. Critics emphasize the amount of time and money candidates invest in preparing for the PET, which has led to a thriving industry of private institutes that specialize in preparing candidates in costly courses. In this way, PET places additional burdens on applicants whose socio-economic background does not allow them to attend those private courses (Shatzman & Carmel, 2008).

While discussing the influence of culture on one's cognitive development, those who support the PET claim that the test is not biased by cultural background, whereas the opponents present the links between cultural characteristics and some of the test components. Empirical studies conducted by Yogeve and Ayalon (2000) suggested that the PET prediction method is flawed, since it fails to accurately assess the chances of success for applicants from a poor socio-economic background. The inaccuracy stems from the cultural bias of the test, which affects the chances of the many applicants who come from different social and cultural backgrounds. The score on the PET is thus a major barrier placed before Arab applicants who have satisfactorily completed all other university admission requirements and are interested in pursuing a higher education at one of the universities in Israel (Mustafa, 2009). According to Mustafa (2009), Jewish and Muslims applicants from lower socio-economic backgrounds fall victim to this cultural bias.

### **Method**

The aim of this study was to present lecturers' perceptions and attitudes regarding the Psychometric Entrance Test (PET) in Israel. The authors used the following research questions to guide the study:

- What are the perceptions and attitudes of lecturers in Israel, regarding the Psychometric Entrance Test (PET) in Israel?
- Is there a difference between the perceptions of university lecturers and college lecturers in this matter?

An open-ended questionnaire was used to gather responses from all participants (see Appendix A). Eight university lecturers and eight college lecturers from various academic departments, all between 35- 55 years old, with an average professional



academic experience of 19 years comprised the participant group for this investigation.

## **Findings**

As shown in Table 1, *University lecturers' perceptions about the PET*, seven lecturers supported PET cancellation while only one lecturer was against. Their main statements were: “PET tests only a narrow field of skills, especially skills of quick retrieval from memory and functioning in a stress-test situation, “PET is important as it helps effective sorting” and, “Irrelevant ”. In regard to the advantages of PET two lecturers referred to the filtering process of the PET while six lecturers mentioned advantages that can be interpreted also as disadvantages. For example “Tests indirect learning abilities of perseverance & memorization ”.

While focusing on the disadvantages of PET, three university lecturers mentioned that PET lacks the ability to predict academic success as they said that PET is an “unreliable tool for academic prediction”, and that “PET does not examine abstract thinking judgmental, critical and creative thinking, and necessary for academic success.” In addition, four lecturers mentioned the high cost students need to pay for the PET preparation, and one lecturer also mentioned the inequality it creates if students have enough money to repeat the courses.

In order to improve the PET and to cope with the disadvantages, lecturers mentioned several of options to omit from PET. Eight lecturers offered to deduct parts of the PET, and they specifically suggested that "each applicant should be given the opportunity to omit one unit”. Another point of view for improving the PET focused on the things that may be added. Seven lecturers mentioned additions that would change the nature of PET, such as: “chapters that will test the relevant skills” ,

“general knowledge, vocabulary”, “personality”, “creativity”, and “parts that reveal social involvement”. As for alternatives to PET, seven lecturers mentioned different alternatives: adding “personality test compatible to the academic discipline”, “Specific knowledge exam”, “following and checking the success in academic studies during the first year”, and integrating an interview as part of the general PET.

*College lecturers' perceptions about the PET*, as presented in Table 2, are suspicious in regard to the academic need of the PET. While one lecturer had no opinion about the issue, three college lecturers had doubts about the issue, they were not sure if it is needed at all, or, they thought it was not needed as of the cultural bias.

While asking college lecturers about the advantages of PET, seven of them agreed that there were advantages such as “PET can predict certain qualification”, other said that the PET are just “a basic filter”, “an effective sorting tool”, and that “PET refreshes learning skills”.

College lecturer's answers in regard to the disadvantages were very clear. Five of them emphasized that PET lacks the ability to predict academic success; they mentioned the high costs of PET for the examinee and the lack of validity. They also claimed that the PET is a type of a selection tool in the service of the social elite.

Six lecturers mentioned different things that may be omitted from PET in order to improve the exams. The main suggestion was to deduct the verbal section as of the fact that today generation uses different terms than those in the PET. They also claimed that vocabulary is not general and should be according to a certain domain. In regard to the option to add something to the PET, they suggested to look more toward the emotional intelligence and additional time. The main and significant suggestion

was to develop PET according to the chosen department, and following the successes in academic studies during the first year.

The main finding, derived from the above answers, has been the significant difference between university lecturers and college lecturers concerning the issue of favoring or opposing the cancellation of the PET. These results should be carefully examined in order to use the proper evaluations not only before accepting or rejecting one to an academic program, but also while planning the place each academic program is studied.

### **Discussion and Conclusions**

In recent decades, we have witnessed accelerated development of new higher educational institutions as well as increased accessibility to these institutions, both around the world and in Israel. This expansion of higher education has been linked to changes in the age of the students, in the flourishing of new types of private and public institutions as well as changes in the criteria for admission.

Institutions that consider themselves selective have different criteria from those of public institutions and prestigious disciplines, as medicine and computer engineering, have different admission processes to less demanding and well-liked disciplines. This pattern reflects a hierarchical modeling (Guri-Rosenblit, 2005) and raises profound questions about the psychometric entrance test to higher education.

The main finding of this research has been the substantial difference between university lecturers and college lecturers concerning the issue of favoring or opposing the cancellation of the PET. Whereas 7 University lecturers were in favor of eliminating the PET (87.5%), only 3 college lecturers were similarly inclined (37.5%). This finding can be explained by the very fact that in Israel, the status of

universities is considered to be higher than that of colleges. Historically in Israel, a lectureship in a college reflects prowess in teaching rather than research. Hence a college lecturer's salary is lower and the state financing of colleges is significantly lower as well. In 2013, 77% of the direct state higher education budget was allocated to universities, 20% to colleges, and only 3% to the Open University. Compared to previous years, it appears that the allocation for some colleges has even declined (Levi, 2013).

Therefore, given their superior prestige and funding, one might expect that the sense of self-efficacy that university lecturers possess would also reflect on their confidence in the quality of their new students and their ability to support their freshmen throughout their academic studies. Additionally, another result reflects the criticism university lecturers have of the PET. Six of them mentioned “supposed” advantages that could actually be interpreted as disadvantages: “An economical tool- does not cost much and is easy to check,” “Tests indirect learning abilities of perseverance & memorization,” “A fortune for its organizers,” and “An instrumental tool for the system.” On the other hand, no college lecturer expressed criticism towards the advantages of PET but stated genuine advantages such as, “PET is a basic filter,” “PET is an effective sorting tool,” and “PET can predict academic success.”

The vast majority of lecturers from both universities and colleges believe that if the PET continues to be part of the university admission process, changes must be made to modify the nature of the exam. Both groups brought up the idea that parts that are irrelevant to the chosen discipline must be omitted from the exam. Some university lecturers and college lecturers suggested that the exam should reflect, in some way, the academic track chosen by the examinee. This sentiment aligns with post-modern perceptions of evaluation and assessment in education, which favor

authentic assignments rather than synthetic assignments within tests: synthetic assignments are detached from the examinee's world, whereas authentic assignments are relevant and meaningful for the students' lives (Carmi & Buchnik, 2005).

Moreover, some participants even suggested adding sections that would reveal a range of aptitudes as well as expose multiple intelligences as “emotional intelligence” and “creativity.”

The prevalent alternative to the PET offered by the lecturers in this research was first year graduate courses open to everyone. According to this method, the sorting is done based on the students' achievements during their first year of studies, usually determined by their grades at the end of the first year. This method is used in several European countries (Vining & Tashner, 2014). One can assume that this model will not only lead to improving the accessibility of higher education but also will make the sorting process more effective, valid, and reliable. Eventually, the process will be much more trustworthy for students and lecturers alike.

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Table 1

*University lecturers' perceptions about the PET*

<b>Issue</b>	<b>Quantification</b>	<b>Representative Statements</b>
For or Against the cancellation of PET	7 lecturers supported PET cancellation.  1 lecturer was against.	“PET tests only a narrow field of skills, especially skills of quick retrieval from memory and functioning in a stress-test situation.”  “PET is important as it helps effective sorting.”  “Irrelevant.”
The advantages of PET	6 lecturers mentioned advantages that can be interpreted as disadvantages.  2 lecturers stated that the main advantage was filtering.	“An economical tool that does not cost much and is easy to check.”  “Tests indirect learning abilities of perseverance & memorization.”  “A fortune for its organizers.”  “An instrumental tool for the system.”  “Excellent sorting tool.”

The disadvantages of PET	<p>3 lecturers mentioned that PET lacks the ability to predict academic success.</p> <p>4 lecturers mentioned the PET preparation costs.</p> <p>1 lecturer mentioned the inequality it creates.</p>	<p>“Unreliable tool for academic prediction.”</p> <p>“PET does not examine abstract thinking judgmental, critical and creative thinking, necessary for academic success.”</p> <p>“PET scores can be improved by expensive courses.”(4)</p>
Things to omit from PET	8 lecturers mentioned various deductions.	<p>“Each applicant should be given the opportunity to omit one unit.”</p> <p>“Part of the quantitative reasoning.”</p> <p>"Items- to reduce the burden.”</p> <p>“The part of verbal reasoning.”</p> <p>"Parts that reflect a cultural bias.”</p>
Things to add to PET	7 lecturers mentioned additions that would change the nature of PET.	<p>“Chapters that will test the relevant skills.”</p> <p>“General knowledge”</p>

	<p>1 lecturer did not suggest any additions.</p>	<p>“Vocabulary.”                  “Personality.”                  “Creativity.”                  “Parts that reveal social involvement.”</p>
<p>Alternatives to PET</p>	<p>7 lecturers mentioned different alternatives.                  1 lecturer did not suggest any alternatives but suggested broadening the battery of exams.</p>	<p>“Personality test compatible to the academic discipline.”                  “Specific knowledge exam.”                  "Success in academic studies during the first year.”                  "Interview.”</p>

Table 2

*College lecturers' perceptions about the PET*

<b>Issue</b>	<b>Quantification</b>	<b>Representative Statements</b>
For or Against the cancellation of PET	1 lecturer had no opinion about the issue. 3 lecturers had doubts about the issue. 1 lecturer acknowledged the fact that the tool was needed. 3 lecturers stated their objection to PET.	<p>“There is no clear cut answer.”</p> <p>“Some kind of a sorting tool is unavoidable.”</p> <p>“I oppose PET due to its cultural bias.”</p>
The advantages of PET	7 lecturers mentioned advantages connected to the rationale of PET. 1 lecturer did not suggest any advantages.	<p>“PET can predict certain qualification.”</p> <p>“It is a basic filter.”</p> <p>“Effective sorting tool.”</p> <p>“It constitutes a sorting process.”</p> <p>“PET can predict academic success.”</p> <p>“PET refreshes learning skills.”</p>
The disadvantages of PET	5 lecturers mentioned that PET lacks the ability to	“PET cannot predict an overall aptitude.”

	<p>predict academic success.</p> <p>2 lecturers mentioned the high costs of PET for the examinee. 1 lecturer referred to PET as a selection tool in the service of the social elite.</p>	<p>“Excessive &amp; expensive preparation courses may change the score.”</p> <p>“Not valid.”</p> <p>"A tool in the service of the social elite.”</p>
<p>Things to omit from PET</p>	<p>6 lecturers mentioned different deductions.</p> <p>2 reported ‘nothing’.</p>	<p>“The verbal reasoning section should be reduced due to the terminology of the Y generation.”</p> <p>“Items- to reduce the burden.”</p> <p>“The part of quantitative reasoning.”</p> <p>“The part of verbal reasoning.”</p> <p>“Parts that are irrelevant to the chosen discipline.”</p>
<p>Things to add to PET</p>	<p>5 lecturers mentioned various additions. 3 reported ‘nothing’.</p>	<p>“Emotional intelligence test.”</p> <p>“Additional time.”</p> <p>"Nothing.”</p> <p>“Viewpoints &amp; value attitudes.”</p>

		<p>“Text analysis.”</p> <p>“ICT skills.”</p>
Alternatives to PET	<p>5 lecturers mentioned the alternative of first year studies. 3 lecturers noted the necessity of relevant tests according to the chosen department.</p>	<p>“Official academic exams of each academic institute/ department.”</p> <p>“Success in academic studies during the first year.”</p>

## Appendix A

### The Psychometric Test - Research Questionnaire

#### Part I: Background information

Age \_\_\_\_\_ Years of seniority \_\_\_\_\_ Academic field \_\_\_\_\_

Lecturer at University/ College.

#### Part II: Open questions

1. Do you believe in canceling the psychometric entrance test? Please explain.

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2. What are the advantages of the psychometric entrance test?

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3. What are disadvantages of the psychometric entrance test?

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4. Assuming that the psychometric entrance test is here to stay. What would you omit from it?

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5. Assuming that that the psychometric entrance test is here to stay. What would you add to it?

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6. If you had to choose alternatives to the psychometric entrance test -what alternatives would you propose?

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Thank you for your cooperation!