



Development of Student Admission Criteria in Saudi Universities: the Experience of the National Center for Assessment in Higher Education*

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Abstract

In the Kingdom of Saudi Arabia, as in other Arab countries, the demand for university education has increased over the past two decades, accompanied by grade inflation in secondary education; hence, there was a need to formulate admission criteria that ensure the selection of the best applicants for the various disciplines while safeguarding equity and equal opportunities. To achieve this general objective, The National Centre for Assessment in Higher Education was established as an autonomous national body to provide universities with standards and tests that can be used for admission. By employing such standards and tests, the Centre aims to avoid improvisation and arbitrariness in the development of admission tests and to standardize objectives, material, style and implementation. The Centre also aims to unify admission criteria across universities and promote the use of standard measurement methods that are capable of forecasting the level of student performance at university. Moreover, it aims to impact public education positively by promoting education that is oriented toward developing the desired capabilities and skills. Since the introduction of these standards and tests in 2003, significant integration has been achieved among the various admission criteria; namely, the General Certificate of Secondary Education, the aptitude test, and the achievement test. This integration bolstered trust in the admissions results, both in terms of their credibility in offering fair competition for students and in their predictive ability as a whole.

This paper presents a short description of the National Centre for Assessment in Higher Education project in Saudi Arabia, which was established in 2002. It deals with the philosophy and need for such a centre, as well as earlier examples of such institutions in advanced countries. It also presents a summary of the tests and standards offered by the Centre, in terms of their objectives, nature, method of implementation, and beneficiaries. Finally, the paper focuses on the quantitative aspect, clarifying how the Centre's tests and standards have reduced failure rates at universities and improved the quality of university education.

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I. Introduction

The education systems in many Arab countries are undergoing reform in an attempt to resolve problems related to increased competitiveness in higher education. These problems arise naturally from the spread of pre-university education and the labour market's need for qualified university graduates across a range of specializations. In comparison with world ratios, this increase in demand in some Arab states, including Saudi Arabia, covers the low index of students enrolled in post-secondary education for the targeted age category.

Although this phenomenon is healthy, it exerts pressure on the university educational system and gives increased importance to the General Secondary Education Exams that are required for entry to universities. This led secondary schools to raise the GPA figures for their graduates so that they would have a stronger chance to compete for university seats. The inflation in the General Secondary Certificate (GSC) grade stems from the fact that these grades were gradually entrusted to schools. Starting in the 2007 - 2008 academic year, the entire GSC grading in Saudi Arabia was placed in the hands of schools. This test decentralization led to evaluation disparities between schools and adversely affected equality of opportunity regarding entry to university education.

Public education officials deemed it necessary to distinguish between graduation from secondary education and enrolling in university education. The Ministry of Education aims to increase enrolment rates in public education and reduce failure and drop out rates; this issue needs to be dealt with separately from considerations of the GSC degree as the most important criterion in university admission.



II. The National Centre for Assessment in Higher Education



Despite the continuous expansion of university education in the Kingdom of Saudi Arabia, some specializations benefit more than others from the increased demand in the labour market and there is more competition for admission to these specializations; hence some universities have adopted admission tests to select the best candidates. With the surge in these tests and the increase of their utility, the Ministry of Higher Education sought to coordinate the universities' efforts at a national level and to include higher education in general. It was made clear that these tests should be built upon sound scientific foundations and meet the goal of choosing the best candidates in a just manner.

For this purpose, the Ministry of Higher Education submitted to the Higher Education Council a memorandum to establish The National Centre for Assessment in Higher Education as an independent centre for the development and production of tests and standards. Royal Decree number 8/ 471, dated 19 /6 /1421 H (2000), was published ratifying the Council of Higher Education's decision. Endorsed by the Council of Ministers, the decree includes the following:

1. The university admission requirements should encompass tests in addition to the High school GPA. These tests should be prepared according to the following criteria:
 - a. Tests to measure students' abilities, skills and attitudes.
 - b. Tests to measure academic achievement.
2. Testing could be repeated more than once a year.
3. The establishment of a centre for educational assessment called "The National Centre for Assessment in Higher Education", which is financially and administratively independent



- and will have a Board of Directors headed by the Minister of Higher Education.
4. The collection of a fee corresponding to the tests preparation costs to cover the centre's operational expenses, inclusive of the development and research conducted for this purpose.

The Royal Decree establishing the centre also stipulated that the centre prepares tests and standards to be used for profession licenses in relation to education outputs.

Since its establishment, the National Centre for Assessment in Higher Education (Centre) has strived to meet its goals in serving higher education institutions (HEIs). It has adopted a streamlined administrative structure in harmony with its nature of work, characterized by speed, accuracy and control. The Centre has also sought to benefit from part-time professionals in different consultative committees. Figure (1) shows the Centre's organizational structure. The following is a brief description of the structure's elements:

The Board of Directors: The Board of Directors is the Centre's highest authority; it establishes rules and regulations, strategic plans, annual budgets, and the Centre's final accounts; it also approves new measurement projects.

The Higher Consultative Committee: The Higher Consultative Committee is headed by the Chairman of the Board of Directors. The members of the Higher Consultative Committee include the Centre's Director and some of the members of the Board of Directors. It provides consultation and follow-up regarding the Centre's work in general.

Director of the Centre: The Director of the Centre supervises the Centre and its different units; he also tracks the daily progress of current projects.

Measurement and Tests Unit: This unit specializes in the preparation of tests and standards. This involves designing tests, adopting test dimensions, holding training sessions for item writers, overseeing item writing, arbitration and reviewing, preparing test models, undertaking item analysis, test control, test results control and test standardization.

Operations Unit: This unit deals with applying the tests: This involves the selection of test centres, identifying centre capacity and equipment, scheduling test administration, follow-up registration, formation of test committees, training observers and supervisors and scheduling their work, supervising test administration, printing test booklets, preparing test materials for delivery and delivering them, and supervising the archives and the printing press. All of the above mentioned processes and procedures are carried out in a way that guarantees security and quality at all times.

Research and Studies Unit: The unit is responsible for conducting research and studies related to the Centre's tests and standards, providing the Measurement and Tests Unit with results analysis and test standardization. It also develops the Centre's standards, provides consultation and training in standard measurement, and supervises the library and information centre.

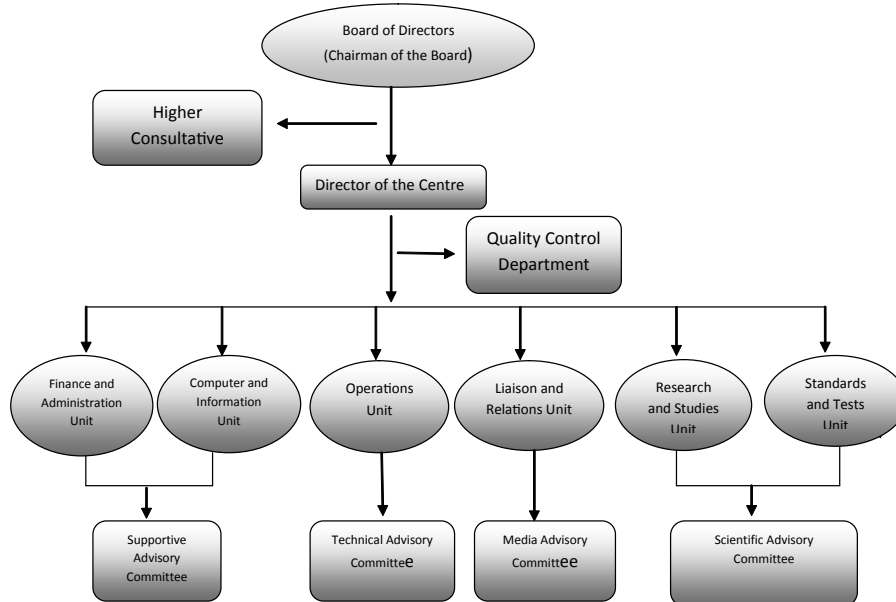
Communication and Public Relations Unit: This unit specializes in student and candidate affairs in terms of registration and publication of results, arranging meetings, visits and public seminars, publishing of centre-related materials and brochures, and managing the Centre's website.

Computer and Information Unit: This unit has the responsibility of providing, operating, and developing I.T. systems related to the Centre's work. It is also responsible for the management of information and data related to the tests, and for the supervision of technical procedures concerning the tests.

Finance and Administration Unit: This is a supportive unit that deals with the administrative and financial affairs of the Centre, its personnel, part-time consultants and other collaborators.

Quality Control Department

Figure 1: Organizational structure of the center



This department deals with the quality control of all the Centre's affairs. It establishes the standards of security and all related rules. This is especially relevant to all tests and test-related information, but encompasses all procedures involved. The department also works to streamline procedures, to enhance efficiency and quality, and seeks to obtain and maintain the Centre's program accreditation from international organizations and bodies.

Consultative Committees: Consultative committee members are specialists in the Centre's various fields of work. Each committee is headed by the Centre's Director or his deputy, his aides, and some professionals with experience in the committee's work.

The Objectives of the Centre: The Centre seeks to meet an array of goals, the most important being the following:

1. Play a leading role in the development of educational assessment instruments at all levels of higher education.
2. Contribute to the raising of performance and efficiency levels in higher education by measuring educational and achievement indicators, and developing positive aspects of education.
3. Prepare, submit, and manage admission tests for the HEIs.
4. Fulfil the need for specialized professional tests to strengthen and enhance requests from businesses and professions, working to their needs and specifications.
5. Provide consultative services to measurement centres and departments in education institutions.
6. Pursue scientific research and conduct studies specialized in the field of educational measurement.



III. Examples from international experiences

Some developed countries, especially the United States, sought to organize the measurement and assessment process in education in the early twentieth century. In China this was begun even before the 1949 Revolution. Many other countries have attempted to standardize the measurement and assessment process in their educational system, as in India, Turkey, Australia, the Philippines and some Scandinavian countries.

In addition to governmental and independent assessment centres, centres have been established in universities, serving only the universities and the surrounding environment. There are also special centres owned by private institutions or by a consortium of universities and private companies. All these centres have one common goal: improving education through measurement and assessment. Some of the most prominent services delivered by these centres are university admission tests aimed at providing reliable and valid instruments to enable universities to select students in a fair manner and to ensure low attrition rates. Admission tests constitute an indicator of the enrolled students' level in any university, which in turn influences the university's international ranking (Monks, J and Ehrenberg, R, 1989).

With the expected increase in the number of students wishing to enter universities, universities have paid great attention to the selection of the most qualified and able students. In fact, Crouse (1985) has indicated that the use of the Scholastic Aptitude Test (SAT) by colleges enables them to better predict the success of their students.

Hereafter, the tests used in some countries for university admission will be reviewed.

China: The National College Entrance Examination is almost the only criterion for admission to Chinese universities. Students take it in the last year of high school. Poor performance in this test implies that the student has lost the opportunity to attend university studies. The Chinese Ministry of Education has been preparing, supervising and offering this test since 1978.

South Korea: The Korea Institute for Curriculum & Evaluation (KICE) was established in 1998 and is the body responsible for assessment and evaluation tests in Korea. The Korean government is responsible for the institute's supervision and financial support. The institute offers many university admission tests, the most important being the:

- Medical Education Eligibility Test (MEET)
- College Scholastic Ability Test (CSAT).

Australia: The Australian Council for Educational Research (ACER) is the body responsible for admission tests to enter universities in Australia. One of the most important university admission tests in Australia is the International Student Admissions Test (ISAT). The Council also provides the Medical School Admission Test (MSAT) and the Australian Law Schools Entrance Test (ALSET).

Turkey: The Turkish State has passed through several stages until it reached the current university admission tests system. It is called the Student Selection Exam (ÖSS - Öğrenci Seçme Sınavı). The body responsible for the test is the Student Selection and Placement Centre (ÖSYM - Öğrenci Seçme Yerleştirme Merkezi). This Centre is affiliated to the Council of Higher Education and is financed through fees collected from candidates who applied the centre's tests.

Japan: The competition among Japanese students to enter university is unrivalled. Japanese universities require high levels of performance, based on a general admission test common to all universities and a second test specific to each university. Japanese universities attach little importance to high school records or grades.

The common test is used in more than 132 universities and educational institutions. It is prepared and administered by The National Centre for University Examination (NCUE). The second test is



prepared by the university, applied after the publication of the NCUE test results; and limited to students who have passed it. The students who do not pass the university test have only one other chance of admission to another university in the same year.

Finland: The first admission test undertaken in Finnish universities goes back to 1852; it was a criterion for admission in the University of Helsinki. This test measured the applicant's general knowledge and the extent of his knowledge of Latin. The current test now measures the applicant's knowledge and skills required for university studies. The Matriculation Examination Board prepares, administers and grades the test.

United States of America: Admission tests are one of the most important conditions for admission into American universities. The two main bodies responsible for the university admission tests process are the Educational Testing Services (ETS) and the American College Test (ACT)².

ETS prepares and supervises the admission test known as the Scholastic Assessment Test or SAT. ETS also prepares aptitude tests related to the faculties of medicine, dentistry, and law. In addition, achievement tests related to specific courses such as mathematics, sciences and others, are prepared. The use of SAT began in 1926 and remains the most famous and the most used of all admission tests in the United States.

ACT offers the test known as the American College Test. This test is intended to supply universities with information concerning students wishing to enrol by measuring the student's acquisition of basic skills. It is used for university admission in some U.S states.

Sweden: University education selection is based upon the student's performance in secondary school; this test is unified and codified for all courses at the national level. It allows a comparison of students in one or in all of the courses all over Sweden, based on common criteria.

However, some experts began to study the possibility of using an admission test for higher education applicants. After having examined a large number of world tests and having studied their selective value, the Sweden Scholastic Aptitude Test was adopted.

IV. Unified tests goals

Unified national tests seek to meet many objectives including:

1. Ensuring tests are consistent in terms of substance, style, and goals.
2. Contributing to the standardization of admission criteria in various HEIs and facilitate the admission procedure.
3. Removing the burdens and costs of admission tests provided by each university separately.
4. Increasing objectivity and the fair selection of students to universities.
5. Using new standards in addition to the high school GPA for admission to universities.
6. Building standardized tests constructed on a universally recognized scientific basis.
7. Using selection methods able to predict the success of the student at the university.
8. Ensuring a positive impact on general education by informing teachers of the mental abilities to be tested, and encouraging a reduction the memorization-related tasks.

V. Tests offered by the Centre

The Centre offers four main tests used in the university admission process:

² The original name was American College Testing Program, In late 1996 they changed the name to ACT (pronounced «A - C - T») (<http://www.act.org/aboutact/index.html>)

1. The General Abilities Test (GAT).
2. The Scientific Achievement Test (SAAT).
3. The Standard Test for English language proficiency (STEP).
4. The Graduate Aptitude Test.

1. The General Abilities Test

This is a two and a half hour test, in Arabic, measuring the analytical and inferential ability of the student. These capabilities are built and refined through learning, experience, educational attitudes, and critical reading, both within and outside the school.

The test consists of two parts: verbal and quantitative.

The test measures learning ability, regardless of the uniqueness of individual subjects since it measures the ability of the test-taker in each of the following areas:

- Reading comprehension
- Logical relationship recognition
- Basic mathematical concept issue resolution
- Inference
- Perception of patterns in relationships

The Centre publishes two versions of aptitude tests, one for the scientific track and one for the humanities track; versions differ in the weight and level of the quantitative part of the test.

Students are evaluated and their grades monitored based on their performance within a group (norm-referenced test); test versions are equated and calibrated based on a mean score of (65) and a standard deviation of (10).

2. The Achievement Test

This is a three-hour test, aimed at knowing the extent to which the student possesses the fundamentals studied in high school. The test focuses on the basic knowledge that the student needs in college. The questions encompass various levels of knowledge; there are questions that require comprehension, others that require application and some that require inference.

The achievement test is divided into two types:

- a. The Achievement Test in natural sciences relates to courses in biology, chemistry, physics, mathematics, and the English language. Questions are equally divided among these courses.
- b. The Achievement Test in human sciences, relates to courses in the Arabic language, legal sciences, history and geography.

3. The Standard Test for English language proficiency (STEP)

This is a two and a half hour test determining the applicant's level of English language proficiency. The test consists of 100 questions distributed among the test sections of reading comprehension, syntax (grammar), listening comprehension and compositional analysis.

The test aims to be used for the following requirements:

- a. Admission to English language departments.
- b. Exemption from certain English language courses.
- c. As a placement test for English programs.
- d. Certify students' English language proficiency level for use in teaching, for the enrolment in graduate studies, or in business and other areas.



4. The Graduate Aptitude Test

This is a special test for university graduates wishing to pursue Masters and PhD studies or to join post-university programs. It consists of three parts: a verbal section, a quantitative section, and a section dedicated to logical analysis and interpretation.

The Centre also offers tests and measures of a professional nature, including:

1. The General Tour Guide License Test.
2. The Regional Tour Guide Test.
3. The Teacher Professional Competences Test.

The Centre is currently preparing another set of tests, including:

1. Arabic Language Test for non-Arabic speakers.
2. Engineering Professional Test (for the Saudi Council of Engineers).
3. Interest Inventory and ability Test (for the Human Resources Development Fund).
4. Investigators Professional Competencies Test (for the benefit of the Bureau of Investigation and Public Prosecution).
5. Tests for giftedness and creativity (for the King Abdul Aziz and his Companions Foundation for Giftedness and Creativity).

VI. New admission standards

Universities gradually began to see the benefits of the Centre's tests system and began to adopt them as admission criteria.

Some universities used to adopt the high school GPA as the only admission criterion, while some used their own admission tests. Now, however, the Centre's tests, in addition to the high school GPA, are the new unified university admission criteria.

Students are able to take the Centre's tests in locations close to their residence and at a time of their choosing. After taking the required tests, they can then apply to any of the Kingdom's universities in person or electronically. The Centre provides universities with the student results, reporting the highest grade obtained by the student. The data reported is then put in the university database as a reference for student admission.

The following tests represent the criteria used by universities for admission:

1. The High School GPA: it applies to all disciplines and is given a ratio ranging between 20%-60%.
2. The Abilities Test: for all disciplines; it is given a ratio ranging between 30%-40%.
3. The Achievement Test: for some specializations; it is given a proportion ranging between 30%-40%.
4. The English language proficiency test (STEP): for English language disciplines in some universities. The students having the best performance are chosen if they have also met the discipline's general admission conditions.
5. The Graduate Aptitudes Test: used by some universities to select candidates for some Graduate programs.

Since the Centre is independent from universities, it doesn't impose specific weights to the tests, but lets the universities choose what is suitable for them. However, on the basis of its research, the Centre recommends optimum proportions giving the highest correlation to the performance at the university.

Having applied these standards for six years, universities' admission officials have noted the Centre's tests ability to discriminate between students. This was not possible with the high school



grades alone, where student grades were too close, therefore making it difficult to discriminate between them. Universities have also benefited from the Centre's tests in terms of determining the student's specialization track and helping to ensure student retention in their specialization fields.

VII. The Centre's contributions to the improvement of education efficiency

It was mentioned earlier that the Centre's tests aim to directly enhance university education, and indirectly contribute to the improvement of pre-university output, through:

1. Focusing on the aspects of thinking, analysis, inference, and critical reading of the student.
2. Creating a competitive setting among students for achievement and good learning methods.
3. Improving higher education's input by giving priority to people with higher skills and capabilities, leading to the improvement of higher education's output.
4. Placing students in specializations according to their skills and abilities, and therefore properly utilizing university places and raising student performance levels in those disciplines.
5. Creating a stimulating and productive learning environment through the achievement of the tests' and standards normative goals.

To make sure that the goals are achieved, the following is done:

1. Preparing periodic studies linking university performance to admission criteria, including the grades obtained by students in the Centre's tests, in order to determine their importance and usefulness in predicting and improving performance.
2. Studying students' performance (tests and exams) in university, and provide feedback to public education and higher education officials.
3. Monitoring school performance and school district performance through their students' results in national measurements. This allows strengths and weaknesses to be identified in order to benefit from the strengths and to avoid the factors that led to weaknesses. Monitoring includes publication of school ranks based on student performance in the Centre's tests.
4. Raising awareness on the factors facilitating enhancement in educational performance. Organising raining programs for teachers and educational supervisors, and preparing standard measures governing the teaching profession.

Some Results: Some of the Centre's studies have led to results concerning student performance at the university level. It should be noted that these results concern the period preceding the central Grade-12 test abolition.

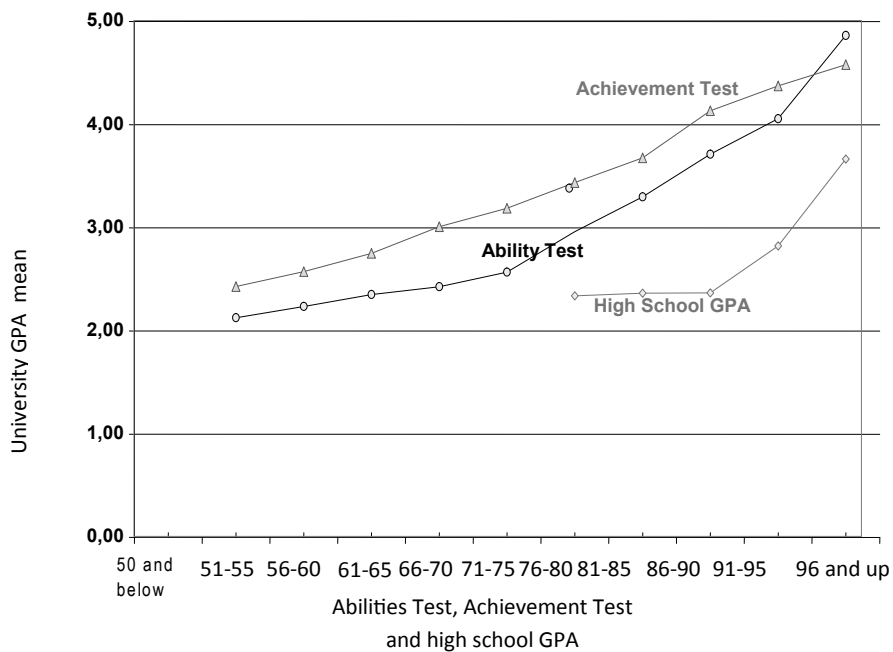
Some of the results:

1. The General Abilities Test showed a correlation with the university cumulative GPA of 0.45 for the first year in the case of scientific discipline students. In many cases, the correlation with the Abilities Test was far in excess of the correlation with the high school grade.
2. The General Abilities Test raised the total correlation by 38%.
3. In the science colleges, the Achievement Test showed a correlation with university performance ranging between 0.51 and 0.59, making it the most important predictor of university performance.

4. The Achievement Test alone has raised the total correlation by 55%, this ratio exceeded 100% in some colleges, meaning that the test has doubled the correlation.
5. The universities have witnessed an improvement in performance, the GPA having risen from 2.71 in 2003 /2004 (1424 /1425 H) to 2.93 in 2005 /2006 (1426/ 1427 H).
6. The university drop-out rate in the first year fell from more than 25% in the first year of application to 14.8%.

The diagram below illustrates the relationship between admission criteria, namely: the high school GPA and the Abilities Test grade, the Achievement Test grade, with the university first year GPA before the decentralization of the high school tests. The figure shows a positive correlation between student grades obtained in the Abilities Test and the Achievement Test with first year GPA at the university along the entire range of grades. However, the correlation for the high school GPA starts only after 90%. That is to say that high school GPA below the 90% rate is unhelpful to discriminate between students.

Figure 2: Relationship between admission criteria and the university GPA (before abolition of general secondary school tests)



VIII. The Centre outside the Kingdom of Saudi Arabia

The National Centre for Assessment in Higher Education has presented its experience at seminars and meetings attended by admission and registration officials in Arab Gulf States. This has led to the application of the Abilities Test in The Kingdom of Bahrain (University of Bahrain), the Sultanate of Oman (Sultan Qaboos University), and the State of Qatar (The University of Qatar). The University of Bahrain - the main governmental university in the Kingdom of Bahrain – has

adopted the test and used it as an additional university admission criterion for all students. The Centre is administering the test twice a year at the University of Bahrain for high school students expected to graduate and wishing to enter university.

Many Gulf and Arab universities have adopted the Centre's tests as an admission condition for students graduating from Saudi colleges. Also, universities in the Arab Republic of Egypt and in the Republic of Sudan have recently adopted the Centre's tests as a condition for the admission of all Egyptian and Sudanese citizens graduating from Saudi high schools.

Subsequent to visits by delegations from many European, Australian and New Zealand universities, these universities have adopted the Centre's tests as criteria for the nomination of students on scholarships for medical studies programs in these universities.

IX. Summary of lessons learned from the experience

1. The Saudi experience in the field of national university admission tests is a new one in the Arab world; this experience has benefited from successful international experiences in the field of student selection for university education.
2. Although university admission in the Kingdom is mainly to governmental universities, these universities have decided, individually, to apply these tests as admission criteria, and to give these tests weights according to their importance. No university has made its own tests following the introduction of these national tests.
3. The establishment of The National Centre for Assessment in Higher Education has brought many benefits, some to students, some to the universities, and some to education in general. In general, the National Centre for Assessment has contributed to increasing confidence in students admitted into university programs and in reducing their attrition rate. It has strengthened equity and fairness in the university admission systems.
4. The Saudi experience did not encounter any restrictions to any particular practice and, on the basis of studies carried out by the Centre it has modified and improved its practices.
5. Among the benefits emanating from the establishment of a Centre specializing in educational assessment is the support it gives to assessment projects relevant to the educational and professional community.
6. The Centre has focused on general cognitive educational goals. These are not guaranteed by the simple presence of these tests within the universities. Convergent efforts are necessary to maintain these common interests.
7. The financial and administrative autonomy of the Centre has played a major role in its success; the Centre's reliance on self-financing from test fees is also an important factor in operational efficiency. However, it is proposed that a part of the annual budget allocated for education be utilized as an open subsidy to support the Centre.
8. The Centre's work in the field of measurement and professional testing has played a key role in shaping the assessment experience as well as raising public awareness concerning the importance of assessment and its noble goals. In addition, it has become clear that assessment is not only related to university admission, but has a much broader impact on the quality of the educational system which in turn has positive effects on the development of the country as a whole.

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