



A Comparative Study of Higher Education Entrance Examinations in Iran with Selected Countries

Narges Moradi¹

Reza Mohammadi² (Corresponding author)

Akbar Goldasteh³

| ARTICLE INFO | ABSTRACT |
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| <p>Received: 28 May 2019 Revised: 24 July 2019 Accepted: 07 May 2020 Online: 17 March 2020</p> | <p>The main purpose of this article is a comparative study of Higher Education Entrance Examinations in selected countries in order to optimize the national examination in Iran. The present study is a qualitative, non-experimental, and comparative research. Country selection strategy is "most different system" according to Bray and Thomas Cube and level of analysis and observation is intercontinental. The statistical population included all higher education systems with similar assessment and admission systems. The countries under study were selected through Targeted Sampling Technique and are Australia, Brazil, China, England, Japan, Netherlands, Nigeria, and Turkey. Data were collected by studying the official website of assessment centers, universities and government documents. The findings show that in Iran and Turkey, there are two separate ministries for formal and general education and higher education, while in other countries this is responsibility of one ministry. Also, Iran and Turkey have centralized examination and admission while other countries have centralized entrance examination but decentralized admission. In terms of type of examination, Iran has an entrance exam based on four-choice questions that will be held within a half day. According to the research findings and in order to optimize the national examination in Iran, it is suggested that a national specialized organization be established to prepare, measure and validate the entrance examination to higher education institutions. It is also recommended to design tests and questions appropriate to each field, use short answer tests, hold multiple national examinations throughout the year and validate the test results every two year.</p> |
| <p>KEYWORDS</p> <p>Accreditation Admission Comparison Entrance examination Higher Education</p> | |

1. M.A, University of Science and Culture,
2. Assistant Prof. Organization for Educational Assessment, Tehran, Iran, Email: remohamadi@yahoo.ca
3. Assistant Prof. University of Science and Culture

1. Introduction

One of the major goals of the higher education system is sustainable growth and development of society through identification, selection and training of human resources. Identification and selection of people according to their talents and abilities is one of the main goals of assessment and evaluation centers. Although the history of assessing and evaluating qualified people to be appointed to governmental positions in countries such as China dates back to the second century BC (Mohammadi, Fathabadi, Yadegarzadeh, Mirza Mohammadi, and Parand, (2012), there is no theoretical agreement on the time and place of the first modern examinations. Based on the available evidences, the first university entrance examinations in Europe were conducted in Germany and the United Kingdom in the early 19th century. Kazovik et al. (2014) believe that the history of the examinations goes back to Spain, which in 1575, a student in Madrid proposed to the king. In the United States and in the twentieth century, standardized tests were modeled on the US Army Alpha Test in a four-choice method entitled "SAT Academic Talent Test" (Kaveh; Khodaei; Mousavi; Moghadamzadeh & Younesi, 2013).

In recent decades in most countries, tests have been used primarily to qualify for university degrees rather than to enter higher education. Accordingly, educational assessment and evaluation are increasingly considered as levers for improvement, accountability, educational planning and policy development in educational systems (Ibid. 9). In addition, in many countries of the world, human resource evaluations due to differences in social, cultural and educational systems have enjoyed great diversity (Zarrinkoub, 2010). In Iran and for the first time in 1963, due to the mismatch between supply and demand for admission to some fields of study, the entrance examination was conducted in a number of faculties of the University of Tehran. In 1963, these examinations were criticized and the universities once again accepted students independently. After the establishment of the Ministry of Science and Higher Education in 1967, in February of the following year, the Ministry established the first examination center - with the aim of preserving time of candidates for examinations - and once again entrance competitions for universities and higher education institutions were held through a centralized approach. In 1975, with the increase in the number of applicants to higher education centers, an independent organization namely the "National Assessment Organization" with three areas of technical-research, executive and supervisory deputy affairs of universities was approved by the Iran's Parliament.

At the 8th Evaluation Summit of the Educational Revolution in 1975, which was held in Ramsar, Northern of Iran, the principle of separation of examinations from student selection process was emphasized and implemented after approval in the Parliament. According to the mentioned plan, criteria such as the grade point average of the final exams of the secondary school, the results of public examination and the specific conditions of each university were considered for the applicant to enter the higher education system (Norshahi, 1997). After the fall of the monarchy and the establishment of the Islamic Republic, and over the past four decades, a national exam called "Konkour" which comes from French word "Concours" has been held annually; a tough examination that has created intense competition among volunteers – especially in money-making disciplines such as medicine (National Education Evaluation Organization, 2011). For various reasons, the Konkour has met with opposition from various social groups, such as parents, students, teachers, educators, psychologists, sociologists and researchers. Despite these criticisms, there was no suitable alternative. Here are the results of several studies:

According to Khodadadi (2013), the elimination of entrance examination - due to unpredictable challenges- is simply not possible and different mechanisms should be considered to reduce these challenges. Zarei and Orangi (2012) also emphasized that in addition to the entrance examination, other factors should be considered in students' selection and admission process, and it should not be limited to one factor. Fathi and Maleki (2012), with a comparative approach, and with an emphasis on the relationship between public education and higher education, have criticized the separation of these two systems in Iran. Khodaei, (2009) believed that student admission should be done through a combination of centralized test and academic records. Samari, Yemeni Dozei, Salehi Omran, & Garainejadnejad, (2017) considers the necessity of using academic records and creating a balance in supply and social demand for disciplines. Shojaei (2005) also showed that in addition to academic performance and talent of candidates, most countries also pay attention to the grade point average of the candidates of high secondary school.

However, over the past decade and due to the increase in the number of universities and higher education centers, there has been a vacancy in many academic disciplines for student admissions - especially in the humanities, so that the pressure of volunteers has been transferred from undergraduate courses to postgraduate course (master's and doctoral). Therefore, the Law on Student Assessment and Admission was approved by the Islamic Parliament of Iran in 2007. According to this law, the assessment and admission of students in higher education was subject to the academic performance of the candidate in upper secondary school. It was also decided to

gradually increase the role of this factor, so that by 2012 it should be the only effective factor in student selection and national entrance examination for universities will be eliminated. Despite this law, due to the diversity of academic fields and variety of exams in the upper secondary schools, a single standard for entering universities was not defined, and therefore the said decree remained unused in practice.

In 2012, the Islamic Parliament of Iran amended the above-mentioned law and reaffirmed issues such as the design of standardized exams by the Ministry of Education (with the main role of the Education Evaluation Organization) and increasing the impact of academic records on university entrance exams. According to the amendment, 85% of the capacity to enter higher education will be determined in five years based on the educational background of the candidates. However, after these ups and downs, since 2016, eighty-three percent and in subsequent years, 85 percent of the candidates entered Iranian universities based on their academic records (National Education Evaluation Organization, 2018). Considering the above, the aim goal of present study is to investigate similarities and differences between student assessment and admission system in selected countries to improve existing system in Iran. The sub-objectives of the research are:

- Identification of assessment and admission systems in selected countries
- Investigating differences and similarities between student assessment and admission system in selected countries
- Identifying the challenges of student assessment and admission system in selected countries.
- Provide solutions to reform the student assessment and admission system in Iran

2. Research Method

The present study is a qualitative, non-experimental with a comparative approach using Bereday's four-step method. According to research literature, only 8 countries of Japan, China, Turkey, England, the Netherlands, Nigeria, Brazil, and Australia have been selected. The strategy of country selection is "different systems, different results", which means that each of the 9 educational systems under study are difference from each other in terms of cultural, social, political and economic and educational dimensions (Bray, Adamson & Mason, 2014). Level of observation and analysis is intercontinental, according to Bray and Thomas Cube (1995) .The statistical

population was all higher education systems that have student assessment and admission systems. Due to the breadth of the statistical population, the research sample was selected based on the target sampling technique from higher education systems that had a mechanism for measuring and accepting students from two dimensions of method and executive organization. Data collection was a documentary method, and books, publications, international reports, academic projects, and government documents were reviewed. Thematic content analysis method was used to analyze the data.

3. Results

Description and Interpretation

At this stage, according to the regional approach of Bereday, we will describe and interpret the student assessment and admission system in the selected countries.

Australia

In Australia, the last two years of high school (years 11 and 12) are crucial in determining students' chances of being admitted to higher education. Students in grades 11 and 12 have a lot of freedom in choosing subjects and curricula, and they can choose subjects that are appropriate for their academic program. In Australia, after high school, students' results in the Australian Tertiary Admission Rank (ATAR) are ranked by state or region, and then candidates can be accepted to the university. The final score and specific conditions of each university can determine which candidate can be admitted (DFAT, 2015). The universities also use other criteria such as questionnaires, performance folders, art tests, and interviews. In other cases, candidates can apply for two national universities and a large number of private universities. In addition, there are various reception centers such as Victorian Tertiary Admissions Centre (VTAC), Queensland Tertiary Admissions Centre (QTAC), South Australia Admissions Centre (SATAC) and Universities Admission Centre (UAC).

Brazil

In Brazil, after graduating from high school, a student must choose his or her undergraduate degree. Depending on the institution chosen, the student is allowed to take a test namely Vestibular

or ENEM (Brazil education, 2018). Exame Nacional do Ensino Médio (ENEM) is a standardized national test under the auspices of the National Institute for Educational Studies and Research (INEP). Vestibular is a comprehensive and basic test used by universities for the admission process. In Brazil, the entrance exam is same as high school graduation test that has recently replaced or been used in many universities. The vestibular test, which is set up by a special committee at various educational institutions, varies from institution to institution (Stanek, 2013). In Brazil, students must choose their major and university before the exam and will be allowed to take exam depending on the institution. The vestibular test is performed in two stages and three consecutive days. The first step involves 90 multi-choice questions, and students walk to the next step with the best and highest score.

China

In China, after high school, students take a general ability test that has many provincial differences. The exam is administered by the National Organization for Educational Examinations (NEEA) and supervised by the Ministry of Education (MOE). The entrance exam score for each province varies between 440-750 and fluctuates every year. In 2017, in Shanghai, admission was based on students' performance on the general ability test, scores on scientific tests, and personality development performance (OECD, 2016). Also in this country, according to the needs of each state, it is possible to change the content of the exam, although candidates must also take specialized exams. Measurement is based on the aggregation of different scores in each state. In 2014, the Chinese government conducted a structured general test in Shanghai and Zhejiang provinces to reduce the negative effects of standardized tests. The test had two parts: the Unified National Test (Chinese Language, Mathematics, and Foreign Languages) and the Scientific / Academic Skills Test, which is based on students' interests. China has a test with multiple-choice, short-answer questions and an article prepared by candidates. The exam has given randomly to two teachers for grading. The test is done in nine hours and within two and three days. In the Chinese capital, Beijing, students can take the exam from the second year of high school. The results of the compulsory units are valid for three years and optional units for one year.

England

In England, after completing high school and receiving a General Certificate Secondary Education (GCSE) degree, students take advanced courses for two years, leading to a General Certificate Education (GCE) degree. Students can choose the test material, which is usually between 5 and 10

topics, to participate and receive the above degree. Students can choose the test material, which is usually between 5 and 10 topics, to participate and receive the above degree. Admission to higher education is based on receiving three levels of A in GCE and three levels of A in GCSE (Department of Education, 2017). Candidates apply to the Universities and Colleges Admissions Service (UCAS) one year in advance. A few months before the Level A exams, the admission requirements will be sent to the candidates, and if the results are accepted, they can apply and be accepted for the various universities designated by the center. High school exams are held at several different centers, which are run and controlled by the Office of Regulators of Qualifications (Dittrich, and Weck-Hannemann, 2010). Schools can use several centers or examination boards for different topics. Some of these centers include Assessment and Qualifications Alliance (AQA), Oxford, Cambridge Royal Society of Arts (University of Oxford, 2018) , Pearson, Adskel, and Welsh Joint Education Committee (WJEC) Joint with Training Committee, Curriculum Planning Council, Tests and Evaluation (CCEA). The Universities and Colleges Admissions Service (UCSA) in the UK is helping universities to effectively manage students' needs and review courses and learning opportunities. Since 2017, a 1-9 evaluation system has been used in which 9 is higher than A*. This change is to solve the problem of having similar rankings in high-demand fields.

Japan

In Japan, after high school, students can take a national exam at the national level to enter higher education institutions. The organization that organizes the exam is the "National Centre for University Entrance Examination (NCUEE), which operates under the direct supervision of the Ministry of Education, Culture, Sports, Science and Technology (MTEX). It is decentralized and conducted in a variety of ways, such as entrance exam scores, university-specific exams, school reports - in which the student's academic and ethical backgrounds are listed - and some other criteria - which vary from university to university, such as the candidate's special status (Nuffic, 2015a). The exam papers will be computerized and will be corrected similar to the IELTS and TOEFL international exams. The national examination is a general exam and candidates must also take the specialized exams of their chosen university. Universities are allowed to select students according to their specialized topics and disciplines and based on their needs and requirements. Therefore, the nature of the exams differs with the specialization of the appropriate institution and the application process for each university. In addition, faculty members have a role to play in selecting applicants. In Japan, the general and specific exams are held in two days.

Netherlands

In the Netherlands, after high school diploma, students take a central exam with 200 questions. The test is administered by the central examinations organization (CVTE = College voor Toetsen en Examens), which is authorized by the government to ensure quality and management of test (Collage voor Toetsen en Exams, 2018). Students submit their applications through an online system. Based on the academic background, the admissions committee decides what the student should take the exam. After sending the approved documents and passing the entrance exam and observing the requirements of the student's file, the acceptance letter will be sent. Admission to popular disciplines depends on getting the maximum score. In this country, students also take a national exam (in 6 or 7 subjects) at the end of high school and receive a diploma. A specialized committee is set up for each exam, including experienced professionals and teachers (Nuffic, 2020). The Ministry of Education determines the general outline of exams schedule and test materials in each topic. There is collaboration between CITO and CVTE to evaluate exam rules. In many academic disciplines, the final exam includes school exams and the central exam. The Ministry of Education, Culture and Science (OCW) is responsible for policy-making and leadership of country's educational system.

Nigeria

In Nigeria, students enter higher education after completing high school by taking the United Tertiary Matriculation Examination (UTME). Registration is managed by the Joint Admissions and Matriculation Board (JAMB). Admission criteria include test results, the nature of the elective course, the number of eligible students, and admission criteria in less developed provinces (Olowolagba, 2018). Higher education institutions set student admission requirements. In Nigeria, with a score of 200 to 250 on the UTME exam, candidates can be accepted into intermediate-competitive courses and with a score of 250 to 280 in all courses (Nuffic, 2015b).

Turkey

In Turkey, after high school, students take two centralized entrance exams (YGS & LYS) for admission to higher education courses. The results of the Lisans Yerleştirme Sınavı (YGS = Undergraduate Placement Exam) entrance exam are used in the admission of two-year professional programs and for the combined calculation of the Yükseköğretime Geçiş Sınavı (LYS = Transition to Higher Education Exam) entrance exam (Council of higher education, 2018). Students need a minimum score of 150 to choose courses and at least 180 points to participate in LYS. To calculate

YGS score, the answers given to each test are calculated separately. Also, after indicating the correct and incorrect answers, the scores of candidate are determined using mean and standard deviation (Dutch Organization for Internalization in Education, 2015). The LYS entrance test scores are a combination of YGS scores and the average secondary education scores. In the LYS test, each subject group has 100 points. The Student Selection and Assessment Center is called OSYM, which operates under the auspices of the YOK Higher Education Council. In Turkey, short answer questions are marked manually and read by an optical fiber device.

Juxtaposition and Comparison

In these two stages and after considering results of description and interpretation stages, we will try to answer this question: "What are similarities and differences in higher education entrance examinations among the selected countries?" Table 1 shows the commonalities and differences between countries.

Table 1: Dimensions of Higher Education Admission in Selected Countries

| Country/ Dimensions | Iran | Japan | china | Turkey | England | Netherlands | Brazil | Nigeria | Australia |
|--|---|---|--|--|-------------------------------|--|---|---|-----------------------|
| Entrance Exam | Konkur | Central exam | Xueye shuiping kaoshi | YGS-LYS | - | Central exam | ENEM | UTME | - |
| Exam Organizer | NOET | NCUEE/UECE | NEEA/CHESICC | OSYM | UCAS | CVTE | INPE | JAMB | ATAR |
| Supervisory Organization | MSRT | MEXT | MOE | YOK | - | - | CONAES | JAMB | - |
| Measurement and Admission Organization | NOET | NCUEE/UECE | NEEA/CHESICC | OSYM | - | - | INEP | - | - |
| Measurement organization | - | - | - | - | - | CITO | - | - | ATAR |
| Admission Organization | - | - | - | - | UCAS | CVTE | - | JAMB | - |
| Holding Stage | One | One | One | Two | - | One | Two | Two | - |
| Holding Days | One | Two | Two to Three | Three | - | One day 2 hours | Three | Two | - |
| Way of Measurement | Raw score, total score (reference standard) | Quantitative and qualitative | Score aggregation (Minimum 750 points) | Crude score, mean and standard deviation (normal distribution) | university standards | Ten-point system | Minimum 3 in Portuguese and 1 in other subjects | Competition score in university and field | Rated from 0 to 99.95 |
| Exam questions | Four-multiple choice | Multiple choice and short answer | Multiple Choice + Short Answer + Article-Based Section | Test and short answer | - | - | Multiple Choice and Paper | Four-multiple choice | - |
| University and discipline Selection | 100 Degrees and Universities | Two national universities and many private universities | Apply to any university | - | Universities selected by UCAS | Ranks eight and above are automatically accepted in their chosen field | Applicants can apply for two federal agencies | - | - |

Table 2: Examine the similarities and differences between selected countries

| Country/ Dimensions | Iran | Japan | china | Turkey | England | Netherlands | Brazil | Nigeria | Australia |
|---|------|-------|-------|--------|---------|-------------|--------|---------|-----------|
| General and specific centralized exam | * | - | - | * | - | - | - | * | - |
| General centralized exam | - | * | * | - | - | * | * | - | - |
| Specific decentralized exam | - | * | * | - | - | - | * | - | - |
| Two separate ministry | * | - | - | * | - | - | - | - | - |
| One ministry (education and higher education) | - | * | * | - | * | * | * | * | * |
| Four-choice questions | * | - | - | - | - | - | - | * | - |
| Multiple-choice questions | - | * | * | * | - | - | * | - | - |
| Short answer questions | - | * | * | * | - | - | - | - | - |
| Essay | - | - | * | - | - | - | * | - | - |
| One-step testing | * | * | * | - | - | - | - | - | - |
| Two-step testing | - | - | - | * | - | - | * | * | - |
| One day examination | * | - | - | - | - | - | - | - | - |
| Two or Three days examination | | * | * | * | - | - | * | * | - |
| Unit evaluation and admission organization | * | * | * | * | - | - | * | - | - |
| Separate evaluation and admission organizations | - | - | - | - | * | * | - | * | * |
| National Entrance Exam | * | * | * | * | - | * | * | * | - |
| Decentralized Admission | - | * | * | - | * | * | * | * | * |
| Regional Admission | - | - | - | - | - | - | - | - | * |
| One test per year | * | * | - | * | - | - | * | * | - |
| Two tests per year | - | - | * | - | - | - | - | - | - |

Similarities

- Iran and Turkey have two separate ministries for general education and higher education,
- Iran, Turkey and Nigeria have centralized entrance exams,
- Iran and Nigeria use four-choice questions in the university entrance examinations,
- Iran, Japan and China have a one-stage entrance exam to enter universities,
- Iran, Japan, China, Turkey and Brazil have a single organization for students' assessment and admission,
- All countries except Australia have national tests and admissions,

- Iran, Japan, Turkey, Brazil and Nigeria perform entrance examinations only once a year.

Differences

- Apart from Iran and Turkey, other countries have a joint ministry from elementary school to the end of higher education,
- Apart from Iran and Nigeria, other countries are using multiple-choice, short-answer and article tests to assess candidates,
- With the exception of Iran, in other countries entrance exam is held in two to three days,
- England, Netherlands, Nigeria and Australia have separate organizations for admission and classification,
- In Australia, students are admitted at the regional and province levels,
- In recent years in China, the test is conducted in Beijing city twice a year,
- Only in Iran applicants must choose one hundred academic fields and universities. In other countries, universities select candidates.

Challenges of Student Assessment and Admission System in Iran

- ❖ *Existence of only one center for measurement and evaluation of students' abilities*
- ❖ *Lack of a clear standard for measurement and evaluation of students' abilities at different levels of learning.*
- ❖ *The possibility of choosing one hundred fields of study for the candidates, which makes their interest and talent ignored*
- ❖ *Lack of identification of students' talents and interests before participating in the university entrance exams*
- ❖ *Lack of specialized scientific institutions consisting of specialists and experts in the field of education for policy making and changing the educational system*
- ❖ *Lack of examination centers and shortage of experts for preparation of standardized and appropriate tests to identify needs of labor market*
- ❖ *Lack of necessary coordination between educational standards provided by ministry of education, ministry of higher education and labor market needs (Ministry of Industry and Mines, 2016))*
- ❖ *The monopoly of performing entrance exam for higher education by an institution in the whole country*
- ❖ *Lack of presence of accreditation organization and quality assurance at different levels of education*
- ❖ *Lack of proper assessment of the ability and interest of the student in the 12-year general formal education courses*
- ❖ *Running the test in half a day and determining the career path of each person in a few hours based on four-choice tests.*
- ❖ *Determining fixed evaluation criteria for all fields and centers of higher education.*

Reform Strategies for Student Assessment and Admission System of Iran

According to the information obtained from educational systems of selected countries, the following solutions are provided:

- Coordination of the Ministries of Education and Higher Education for assessment of labor market,
- Reducing government's centralized authority and creating codified and dynamic laws to respond to training centers,
- Two separate system for assessment and admission,
- Establishment of a national institution for professional assessment and testing according to educational and regional differences,
- Establishment of specialized and professional accreditation associations and institutions for accreditation of educational centers in different levels according to the principle of integration of assessment, evaluation and quality assurance,
- Evaluate students by a separate specialized institution from the end of primary school to higher education,
- Establishment of an organization to identify the real needs of the labor market on an annual basis
- Using advanced technologies to perform different exams and test,
- Attention to the needs of the regional labor market.

4. Conclusion

The most important factors in the assessment process in the countries surveyed are in the four main areas of exams, high school records, applications, and demographic factors. Experimental tests fall into three categories: high school final exams, entrance exams, and standardized talent exams. Higher secondary school's exams and entrance exams are generally based on the measurement of learning, knowledge, and ability of students, and are part of the progress tests (represent part of the curriculum). In most of the systems examined, school test scores are the main criterion for university entrance. According to the McGrath, et al (2014), the world's assessment and admission systems fall into five groups: higher secondary school exams, entrance exams, standardized talent tests, multiple and non-exam. In general, the admission of students in the majority of higher education systems is done in the following three ways:

1. Competitive or selective method in which competence of candidates is measured through competition,
2. Process method or selection according to the threshold and obtaining minimum score,

3. The method of free or indirect admission based on the candidate's educational background.

In Iran, the national exam (entrance exam) has been used for decades to enter higher education centers. A test that mainly measures real information and facts, while in the educational systems of the countries selected for this study, higher cognitive stages are important. The four-choice test is one of the most difficult question design models. Taking this into account, the negative score makes those who are more risk-averse better than those who consciously answer the question. Another important point to note is that in Iran, the diversity of higher education subsystems without accountability for performance quality, centralized legislation, and the lack of a proper accreditation mechanism has revealed need for cohesion and quality improvement of assessment and admission system. In the countries selected for the present study, there is no centralized measurement and admission system and no intervention by the legislature's political institutions, meaning that only scientific institutions determine how candidates should be assessed, accepted, and evaluate. But in Iran, several institutions, such as the Islamic Parliament, Cabinet, the Supreme Council of Cultural Revolution, and the Ministry of Education - without distinguishing between professional and governmental duties - are intervening in how students must be assessed and accepted. This interference, along with the multiplicity of higher education centers and the lack of integration of policy levels, has caused many educational problems. In most of selected countries, government decision-making and intervention in the field of education has been minimized, and only supervision based on a general framework is in place. This policy in China has created competition between different provinces. In the Netherlands, schools have a lot of autonomy, and in other countries, several laws have been passed to create independency, accountability, and increase quality of higher education measurement and admission.

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