



## Comparative Study of Peer Organizations with National Organization for Educational Testing of Iran (NOET): ETS, CITO and KICE

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### ABSTRACT

The present article aims to compare the performance and activities of Educational Testing Service (ETS) of USA, Central Institute for Test Development (CITO) of Netherlands, and Korea Institute for Curriculum and Evaluation (KICE) with the National Organization for Educational Testing (NOET) as the largest and most creditable testing institute in Iran so as to present a model for the revision and promotion of its organizational activities and a groundwork for strategic evaluation. The mission, activities, educational assessment services, and organizational structure of these three peers were compared with NOET and their similarities and differences were studied in order to give a better understanding of the current shortcomings. The findings indicate the comprehensiveness and vastness of the mission and educational activities, the development of a wide range of tests consistent with the customers' requirements, the development of standard tests with the purpose of monitoring learner's progress, the consideration for international activities, the provision of educational services for different countries and the presence of expert and skilled human resources and the working conditions based on teamwork, interaction, and intellectual exchange in ETS, CITO, and KICE. These results highlighted the need for modeling and fulfilling the desirable issues within the future research frameworks of the NOET as a pioneer organization in the realm of high-level policy making and leadership.

### KEY WORDS

Assessment  
 Curriculum and Evaluation  
 Educational Testing Service  
 Peer Organization

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## **Introduction**

Higher education system is regarded as the main agent for sustainable development, welfare, comfort, and promotion of nations on account of its functions and outcomes. Today, knowledge is the most important indicator of development and the main national wealth, which is generated through training and education; however, not every type of training, the purposeful efficient training or, put differently, high quality training is consistent with the individual's and society's developmental requirements. At the macro-level, educational system is comprised of formal trainings (e.g., public and higher education) and informal trainings at different levels, which is expected to help into the individual's and societies' developmental requirements. Creating a bond between the public education system and higher education system is actually the main function of assessment. Assessment is perceived as a mechanism to control the higher education quality; therefore, it is strategic and influential. Assessment is one of the fundamental and inseparable components of education system and should be consistent with it (Seif, 2015).

Over the last hundred years, assessment, as a scientific field, has grown considerably and has gone through ups and downs. During this process, its functions have been also augmented. This also indicates the enhancement of the applicational domain of assessment in general. Assessment is applied as a control mechanism for recognizing to what extent educational objectives are realized and to what extent the trainees have improved, for identifying the weaknesses and strengths of curriculum, teaching-learning methods and content, for improving the quality of inputs and processes of educational system, for sifting and ranking the trainees, and eventually for increasing the responsiveness of the different components of the education system. Due to the vast functions of assessments, different instruments and methods are required in order to make them practicable. These instruments and methods are various and have considerably grown technically and structurally over time.

One of the most applicable educational assessment instruments is testing, which is widely employed for decision-making in different situations (Seif, 2015). Many tests are high stakes and large-scale (i.e., their results have a crucial impact on individuals' lives). They are used for different reasons from certification to university admissions (Amrein & Berliner, 2002). The more critical the decisions which must be made based on the test, the more efficient and powerful the tests are expected to be. This shows the importance of test development; proper, reliable, valid, and efficient test development requires a deep knowledge on the subject, on

one hand, and knowledge of assessment and measurement, on the other hand. This designates the necessity of specialized centres for valid scientific assessment.

Presently, creditable specialized institutes are at work in the field of educational assessment and evaluation at the national and international levels in different countries. These centres design, administer, and score different tests for national and international private and public schools; every so often, they are also in charge of the assessment of different educational grades as a specialized centre and institute for assessment and measurement. In other words, they are responsible for the preparation and presentation of the subsystems of efficient measurement in the entire educational system directly or indirectly. The study and the analysis of the performance of these successful testing pioneers can be a model for the revision and promotion of peer organizations and groundwork for their strategic evaluation.

National Organization for Educational Testing of Iran (NOET), as the biggest national specialized testing institution of the country, has been working with two main objectives:

(a) Assessment for the selection of the most qualified applicants for universities and higher education centres and (b) educational evaluation to examine and determine the influential factors in the improvement and promotion of the scientific quality and presentation of proper strategies to promote the scientific level of the factors impacting on quality. The organization holds different responsibilities in line with its main missions. One of its major responsibilities is to design, administer, and score important and large scale tests. Every year, it prepares and implements large number of tests in accordance with the principles of the standard. Different teams composing of academic faculty members and experts are in charge of designing different tests. NOET as a specialized national institution has been always striving to improve and promote its performance in keeping with the efficient realization of its missions. The organization management believes in the permanent learning for the accurate evaluation and perception of its processes and also believes in comparing them with its first-level scientific peers and attempts to provide its audience with the best qualitative services consistent with the world's last scientific evolutions, besides conducting analytical-comparative study of the performance of its peers and comparing its functions based on the nature and areas of its activities.

The comparative study of successful centres and institutes for test development in educational assessment process at the international level is an approach to identify the similarities and differences of the mentioned institutes in order to achieve an ideal

organizational structure to optimize the activities, to increase the efficiency, and to carry out a strategic evaluation of the organization. Consequently, Educational Testing Service (ETS), Central Institute for Test Development (CITO), and Korea Institute for Curriculum and Evaluation (KICE) have been selected from three continents (America, Europe and Asia). The main issue of the research was to study similarities and differences between NOET and other institutions in terms of their mission, activities, educational measurement services, and organizational structure in order to obtain a better understanding of the current shortcomings.

### **Research Method**

The present research is a comparative study of three peers of NOET as to their missions, activities, educational assessment services, and organizational structure with the aim of presenting a strategic perspective to NOET managers and also providing guidelines for its qualitative improvement. The population under study includes all higher education systems whose entrance systems function in a range from decentralization to total centralization of their assessment and student admission and also includes specialized scientific institutions aiming at steering this action in both the executive dimensions and specialized consulting services. ETS, CITO, and KICE from America, Europe, and Asia have been selected to be studied through purposive sampling and were studied and evaluated comprehensively and vastly. They were selected due to their history, reputation, nation, and comprehensiveness of their educational evaluation and assessment activities. This is a document analysis based on the evidences extracted from related documents and studies. The procedures conducted are as follows: (a) searching among the documents and data resources; (b) examining the validity of data resources, (c) categorizing and prioritizing data resources; (d) comprehending the documents and resources; (e) analyzing the data resources and extracting the required data and information; (f) utilizing and conducting the final analysis of the data resources and using them to answer research questions. For the rest of research, comparative research methodology, which is a qualitative method, is applied. This method is the systematic analysis of the similarities and differences among case studies and results in the discussion which explains different facets of a phenomenon. In the present research, comparative method is used in four stages as follows: description, interpretation, adaptation and comparison (Almasi, 2010).

## **Research Findings**

**Educational Testing Service (ETS):** This institute was founded in USA in 1947 with the intention of establishing an independent organization devoted to educational research and assessment along with implementing tests, conducting related research, and providing consulting services for research institutes. Over the years, the centre's domain of activity enhanced and, today, it is known as a successful pioneer in testing. The mission of ETS is to advance quality and equality in education for all individuals by providing fair and valid assessments and conducting related research in this regard (ETS, 2016h). Its activities are in the area of testing, research, consultancy, and educational policy-making. It develops, administers, and scores a various range of tests annually at the national and international levels, with aim of improving quality and equality. The tests are classified into five groups:

- Entrance and Placement Examinations (the college board's SAT<sup>4</sup>, Graduate Record Examination (GRE)<sup>5</sup>, College Level Examination Program (CLEP)<sup>6</sup>, the College Board's Advanced Placement Program (AP)<sup>7</sup> Tests)
- K-12 Assessment Programs (California Assessment of Student Performance and Progress (CAASPP)<sup>8</sup>, National Assessment of Education progress (NAEP)<sup>9</sup>, California Alternate Assessment Program (CAPA)<sup>10</sup>)
- English-Language Assessments (TOEFL® Test, TOEIC<sup>11</sup> ® Tests)
- Assessments for Licensure and Certification (Praxis<sup>12</sup> ® Assessments, School

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4. SAT is a standardized test which is applied for university and higher education admissions in USA.

5. GRE is a standardized test that is an admissions requirement for graduate schools in the United States and some universities of Canada.

6. CLEP is a group of standardized tests created and administered by the College Board. These tests assess college-level knowledge in 37 subject areas and provide a mechanism for earning college credits without taking college courses. CLEP at university level consists of 33 test and includes the curriculum of the first two years of university.

7. Advanced Placement examinations program is a standard and accurate academic program which are offered by the College Board in USA. It includes 35 courses and tests at university level. High school students can take part in the program. The training courses contain courses offered in the first year of University.

8. CAASPP was developed in 2014 and provides accurate information of student performance and progress and includes adaptive computer-based tests on English Language, art, mathematician and paper-based test on sciences. Students of grades 3, 8 and 11 take this test.

9. NAEP is one of the largest and most well-known programs for assessing American students' knowledge in various subjects including mathematics, reading, science, writing, art, economics, geography, history and technology.

10. California Alternate Assessment Program for the assessment of the students with cognitive disabilities who are not able to participate in the state-wide assessments. This program is hold at five levels for different subject matters of English language/literacy and mathematics and four subjects of science. The level the students are assessed is apart from their educational grade.

11. TOEIC is an English language test that has been used since 1979 for the recruitment, replacement and promotion of human resources. It is similar to TOEFL but covers different subject areas. The items are based on real international working environment.

12. Parxis test assesses the knowledge and skill of applicants for teaching and is used for certification.

Leadership Series Assessments, The ParaPro Assessment<sup>13</sup> )

- Customized Assessments (ETS, 2016d).

ETS is also very active in research and allocates more resources to research than its peer centres. It is one of the world's pioneers in educational measurement research and analysis, innovative product development, and original policy studies and thus can promote policy-making discussions for scientific research. Employing national and international researchers, ETS defines and administers different research projects, such as educational quality improvement; English language training and assessment; the assessments of candidates with disabilities or health-related needs; psychometrics; large scale assessment; human resource assessment, and new, fair, and accurate assessment methods. In general, ETS sets research in three main areas: the preparation and analysis of assessment, assessment studies, and policy research (ETS, 2016e).

ETS also offers consulting services to its customers in different areas; the main goal of the consultants of this centre is to provide specialized assessment and measurement consulting services to other testing centres. ETS also plays an important role in giving a better understanding to the policy-makers regarding training and learning, setting research standards and establishing educational policies. It supports the development of policy discussions in ETS policy information centre (PIC) through conducting original research and integrating secondary data. ETS policy analysts present various reports on different issues including education reform, education availability, children's and adults' literacy, teachers' quality, certification, education funding, the international comparison of academic performance and the achievement gap (ETS, 2016a).

The above-mentioned activities are done by the participation of expert and committed human resources. Human resources are regarded as the fundamental basis of growth and excellence of organizations. They lead the organizations towards their desired objectives; this in turn causes the society and eventually governments to achieve their targets (Abedini and Poorsalehi, 2008). Accordingly, the study of organizational structures is of great importance. More than 3300 professionals work at ETS offices in America and all around the word, 2300 of them are expert in different disciplines related to assessment and measurement and also educational research. More than 1000 individuals of ETS staff hold degrees in higher

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13. The ParaPro Assessment offers an assessment of reading, writing, and mathematics skills of paraprofessionals. It also evaluates their competence in applying their knowledge in the class.

education, 390 of which are PhD graduates. ETS professional team- consisting of test developers, psychometricians and statisticians, experts in assessment development, experts in global assessments, experts in educational policy-making- provide new solutions for private and public organizations, educational institutes, schools and individuals to find new teaching-learning methods. In addition to its permanent human resources, ETS employs national and international experts if needed. One of the main reasons for its success is the presence of experts in different disciplines related to assessment and educational research (ETS Global language exams in Brno, 2016).

Central Institute for Test Development (CITO): National institute for educational research (SVO) in Netherlands posed the formation of CITO in 1967 as a centre similar to ETS. Consequently, CITO officially began its activities in 1968 (CITO, 2016; CITO, 2017j). The main mission of its foundation was to provide equal opportunities for all through the objective assessment of knowledge, skill, competence, and individual's potentials so as to lead them to the path of success. Over years, the activities of the centre were enhanced and it is currently known as one of the successful testing centres at the national and international levels (CITO, 2017f).

One main activity of CITO is to assess and monitor individual's talent and potentials. This institute is in continuous contact with the public and private educational institutions associated with the learning process. CITO believes that all people have the ability to grow and prosper. Therefore, it helps individuals to develop their potentials. The CITO professionals measure and assess individuals' knowledge, skill, and competences objectively and follow their educational and vocational progress. Proper placement of people by using valid and reliable tests to guide children, adolescents, and adults in the path to success is one of the fundamental principles of this institution (CITO, 2016).

CITO's mission is to offer equal opportunities for all through fair, valid, and reliable assessment and related research in this regard. It provides consultancy, training, implementation, certification, and auditing at the national and international level (CITO, 2017a; CITO, 2017b; CITO, 2017c; CITO, 2017k).

CITO consultants serve clients in several ways, their main goal is to work together with them to realize their ambitions and requirements and tackle the challenges they face in Educational Measurement and Assessment (CITO, 2017c). CITO offers consultancy for test development

for high-stakes and low-stakes assessments, validation of language tests based on CEFR<sup>14</sup>, Psychometrics (CTT, IRT, item banking) for evaluation and test construction, evaluation of all kinds of testing systems, transfer from paper-based testing to computer-based testing, item production and delivery of examinations, implementing, and supporting the Questify software for planning, developing, evaluating, and reporting efficient, valid, and reliable tests (CITO, 2017).

In the field of education, CITO offers a wide range of development programmes, varying from one-day introductory courses to more extensive programmes lasting two or three weeks, in topics such as psychometrics (e.g., standard setting, equating, data analysis, reporting, optimal item selection) and possible types of tests (diagnostic tests, advisory tests, selection tests, portfolios, formative tests). Programmes are always tailor made to fit specific needs, professional background, and budget of applying institutes and organizations (CITO, 2017k).

In the field of testing, CITO can help its clients to present a wide range of assessment services for adapting and implementing reliable and accurate measurement systems for early childhood education, primary education, secondary education, vocational education, higher education, and professional development (CITO, 2017e; CITO, 2017h; CITO, 2017i). It implements and scores efficient, valid, reliable standard national tests for different goals and different levels of education, such as the end of primary school test, central examinations of secondary education, and the practical vocational examinations. CITO also participates in many national projects (periodic survey of the education level (PPON)<sup>15</sup> and comparative research reference sets) and international projects (European survey in language competences (ESLC)<sup>16</sup>, program for international student assessment (PISA)<sup>17</sup>, and CEFR).

In the field of research, similar to ETS, CITO conducts extensive research projects in the field of new psychometric and testing. The institute also provides students with the opportunity to

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14 . The Common European Framework of Reference for Languages is a guideline used to describe achievements of learners of foreign languages across Europe. Presently, it includes 40 languages. CEFR helps different organizations and institutes to know people's (esp. immigrants') language skills and competence. It distinguishes among four kinds of language activities: reception (listening and reading), production (spoken and written), interaction (spoken and written), and mediation (translating and interpreting).

15 . This survey was conducted in 1987 by the ministry of education, culture, and science of Netherlands and includes almost all subject areas of elementary school, such as language, mathematics, and knowledge about the world.

16 . The European Survey on Language Competences (ESLC) was first carried out in 2012 to provide data - across skills and languages of foreign language competences of secondary school students in Europe. It is conducted every four years. 14 countries collaborate in the project: Belgium, Bulgaria, England, Estonia, France, Greece, Croatia, Malta, Netherlands, Poland, Portugal, Slovenia, Spain, and Sweden.

17 . PISA is a creditable study by the Organisation for Economic Co-operation and Development (OECD) in member and non-member nations that measures 15-year-old school pupils' scholastic performance on mathematics, science, and reading. It was first performed in 2000 and then repeated every three years.

conduct research under the supervision of their specialists. It also works internationally with peer companies and institutes and provides consulting, training, and executive services in the area of assessment and measurement for more than 40 countries (CITO, 2017d).

One other CITO activity is to determine professional qualifications and competence and issue certificates for critical jobs to guarantee the individuals' capabilities and to identify areas that need to be revised and also to improve professional human resources (CITO, 2017b). CITO also audits the examination process to optimize, improve, and revise it. Assessment systems need to be dynamic and constantly live up to changing requirements. CITO checks the status of systems by performing a quick scan or a more in-depth audit. In most cases, organizations need a more thorough check of their examination procedures. CITO can catch on whether they can realize their examination objectives or not. The main goal of the audits is to identify the weaknesses and shortcomings of assessment systems in order to improve the whole examination process (CITO, 2017a).

The successful activities of CITO have been feasible with the support of its expert and proficient human resources. Presently, CITO has almost 600 employees. In addition to its professional team, more than 2000 professionals of training and test development out of CITO work with it constantly. CITO offers an interesting, informal, dynamic, and collaborative workplace for its employers and experts. It facilitates the conditions for the scientific interaction of its experts and enables them to achieve personal and professional growth (CITO, 2017).

Korea Institute for Curriculum and Evaluation (KICE): KICE is a governmental educational research institutes and was founded in January 1998. Since its foundation, it has played an important role in making educational policies, administrating, and conducting national and international research. Therefore, it has developed in quantity and quality during a short period. KICE has a high reputation in different areas mostly in the administration of national examinations (KICE, 2018). KICE's main mission is to improve the quality of education at school levels (primary and secondary school) and to improve public education through research, curriculum development, and educational evaluation. It aims to develop into an international educational planning and evaluation institute (KICE, 2016).

The activities of this institute are in the field of curriculum planning; education and learning; assessment and educational evaluation; preparation, implementation and analyses of achievement tests, College Scholastic Ability Test (CSAT) and national tests; textbook

authorization, and global education.

In the field of curriculum planning, the institute has developed a curricula for elementary and secondary education and conducted related research in this regard. In view of that, it conducts research in cooperation with teachers, school administrators, and educational policy-makers to better understand the factors influencing curriculum development, implementation, and evaluation (KICE, 2018b).

In the field of education, KICE plays an effective role due to its capacities. It organizes and holds long-term programs to improve teaching quality at primary and secondary schools. It also relates research on teaching/learning methods and materials and conducts international comparative studies on learning-teaching (KICE, 2018g).

KICE provides various assessment services with the intention of reliable and accurate measurement. It develops, administers, scores, and evaluates standard, valid, and reliable tests for different reasons, such as college scholastic ability test (CSAT), selection test of public kindergartens, primary schools and specific primary school, selection test of secondary school teachers, elementary, middle and high school graduate equivalency tests for self-study student, and national assessment of educational progress (KICE, 2008).

College Scholastic Ability Test (CSAT) is one of the most important tests developed and managed by KICE, commissioned by the Ministry of Education, science and technology (MEST). The test is required for Korean college and higher education. KICE also provides curricular standards and the descriptors of achievement level in an attempt to support the advanced progress assessment tools developed by teachers (KICE, 2008; KICE, 2018a).

Along with the administrative activities in education assessment, KICE also considers related research as one of its major priorities. Accordingly, KICE conducts studies on the national assessment of educational progress (NAEP) and international assessment, including TIMSS (Trends in International Mathematics and Science Study) and PISA (Programme for International Student Achievement) (KICE, 2008; KICE, 2018e). Textbook authorizations is another key function of KICE. The Institute is in charge of the development and distribution of textbooks aiming at the enhancement of textbook policies and authorization for quality control (KICE, 2018h).

KICE also plays an important role in global education and conducts research on global education and educational policies through implementing projects related to international

education development and cooperating with related institutes and organizations outside Korea such as Organization for Economic Cooperation and Development (OECD); United Nations Educational, Scientific and Cultural Organization (UNESCO); International Association for Evaluation of Educational Achievement (IEA); Educational Testing Service (ETS); National Centre for Research on Evaluation; Standards and Student Testing (CRESST), Qualifications and Curriculum Authority (QCA), Australian Council for Educational Research (ACER), Curriculum, Corporation (CC), Beijing Education Examination Authority (BEEA), National Education Examinations Authority and Tianjin Municipal Education Admission and Examination Authority (TAEA) (KICE, 2018). One major objective of the institute is to develop into a professional research institute and international competitive power.

The analysis of KICE human resources reveals that there are proficient and expert human forces working there. Presently, it has 276 employees, including the directing board, 184 research experts, and 91 office staffs. KICE provides an efficient and optimized context for its employees through creating a dynamic, active, and interactive scientific research workplace (KICE, 2018).

National Organization for Educational Testing of Iran (NOET): It was founded as the most authoritative testing center of the country in 1968 with the purpose of selecting university students. Its main objectives have been the establishment of an efficient assessment and evaluation system at all educational levels, the assessment and measurement of the knowledge of applicants for higher education at different educational levels, and the evaluation and academic assessment of universities and higher education institutes to guarantee the quality of higher education (NOET, 2016b).

The key functions of the organization are in the areas of development and administration of tests, research, and consulting. One of the most important activities of the organization is to develop, administer, and score high stake and large-scale tests. The tests are categorized into five groups: (a) universities and higher education admission tests, (b) English language testing, (c) employment tests, (d) certification and qualification tests, and (e) customized tests. University admission tests are designed and implemented at six levels of associate, bachelor, master, doctoral, technical, and professional qualification and Payam Noor (NOET, 2016a).

NOET has also established a research management system and defined research projects according to its missions and organizational priorities, which have been implemented by

researchers inside and outside the organization. However, the enhancement of research activities and the implementation of projects related to new concepts in testing seem totally necessary for the optimization of activities.

NOET also offers consulting services for educational institutions, such as the ministry of education; these services are in form of professional consultancy for school teachers so as to prepare them to guide higher education applicants to select their major and for the full authorized representatives of testing to become familiar with the principles of examinations. It also provides such services for the ministry of science, research and technology in form of professional consultancy for the internal and external administrators and evaluators of universities and higher education (NOET, 2016).

Like any other organization, NOET also needs expert human resources. Therefore, one of its strategic objectives is to recruit expert staffs. Specialist human resources are not readily available, unlike non-expert human resources and appropriate planning is required to provide them in accordance with organizational goals. HR planning is in fact the prediction of the organizational needs in terms of human resources and the planning of the stages needed for fulfilling such needs. According to the data gathered by the department of planning and human resources management of NOET in 2016, NOET has 599 employees; 5 employees are delegates of the ministry of science, research, and technology, and 2 people are working in provincial offices. Of the 592 personnel employed in the organization, 22% hold master and doctoral degrees and 37.5 percent of them hold bachelor degree. Most staff has studied in humanities. In addition to the permanent staff, the specialized test development team, including university professors and subject matter experts collaborates with NOET. Due to the defined missions of the organization regarding the educational assessment and evaluation, it is required to provide facilities for the staff to follow their education. Expert human resources recruitment is also needed to increase the efficiency of the organization (Performance Evaluation Report of National Organization of Educational Testing, 2016).

## **Discussion and Conclusion**

This study aimed to conduct a comparative study of the National Organization of Educational Testing of Iran (NOET) and its peers in the area of educational assessment mission in order to improve the performance and present a basis for strategic evaluation. To this end, three peer institutes - ETS from America, CITO from Netherlands, and KICE from South Korea, all among pioneers in testing at the national and international level- were selected to be compared in

terms of their missions, activities, educational assessment services, and organizational structure. These centres can present a pattern to NOET so as to assist it to optimize its performance and consequently carry out a strategic evaluation. The present research is a document analysis and conducts a comparative study in different stages. Identifying and analysing the reasons for success of these centres can play an effective role in improving and revising the functions and activities of NOET.

The comparison of NOET with ETS, CITO, and KICE shows that NOET, as the largest organization for testing in Iran that is responsible for the development, implementation, and scoring of high stake and large scale tests holds the required standards of a progressive testing centre in terms of organizational mission, goals, and activities; however, it needs to improve and revise its performance in some areas. The results of the study will be discussed in the following paragraphs.

The analysis of ETS, CITO, and KICE indicate the variety and broadness of their domain of activities and functions. Testing is only a part of the wide and various range of their activities and they are active in different areas from educational policy-making to text-book authorization; put differently, these three institutes systematically and effectively cooperates in the educational cycle from planning to implementation; this can be perceived as one of the strategic secrets of their success. Unfortunately, NOET, in spite of having distinctive organizational knowledge and experience, has been considered as a mere administrative organization since its formation and the educational policies and other cycles are dictated to it by other non-expert institutions. The comparison and evaluation of the testing activities of ETS, CITO, and KICE shows that they have been involved in the development of different tests and design and administer diverse tests for different goals. They also develop custom-made tests based on their clients' requirements.

Qualification and certification testing is very important for employment in critical jobs to guarantee individuals' capabilities, to identify the area that need to be revised, and to enhance expert human resources. For many critical jobs, apart from having university degrees, the applicants need to get a certificate and a professional qualification license, so they need to pass an exam. Although NOET design, administer, and score many tests every year, it less considers the development of qualification and certification tests. According to the successful experiences NOET has gained in developing many high stake tests, it seems worthy to operationalize projects on developing qualification and certification tests due to the

importance of such tests in the organizational planning. The first step to identify the related occupation and the second is to negotiate with the related centres and organizations in order to provide the suitable context for cooperation and test development.

Employment testing is another field which is emphasized by ETS, CITO, and KICE and needs attention in NOET. NOET has invigilated five inclusive employment exams so far; it also develops, administers, and scores employment tests of several institutes and organizations; however, it is much better to define the process of such testing as a formal mission in line with the progressive international testing centres and to provide the context for the optimized and board-range implementation of employment tests through defining new roles or redefining the current roles and redesigning the organizational structure.

The analysis of the testing procedures of the institutes under study reveals that they develop standard tests for different education levels to monitor the progress of the trainees. This is an area that is required to be more taken into consideration in NOET. Further, with regard to the application of educational background as one of the main components of student admission in some disciplines, the development of standard tests at different levels to standardize the educational background is more required.

One important point shown by the study of CITO and KICE is that the assessment of learners' progress is very comprehensive in the test development process. They cover the whole education system from kindergarten to higher education and are responsible for the development of valid, reliable, and efficient measurement of individuals within the whole education system. The education system in Iran lacks such an integration of assessment and different institutes are involved in testing. Therefore, the need for developing a national assessment institution to aggregate the assessment activities with the purpose of improving them is felt. Due to the experiences of NOET in developing high stake tests based on national and international knowledge and experience, its satisfactory research credits, its expertise in providing examination security, the establishment of educational equality and efficient responsiveness, it is desirable to centralize the assessment activities in NOET or to make it responsible for the direct supervision of the assessment activities of institutes. This may result in the aggregation of assessment activities and the establishment of a national institution to integrate the procedures, to optimize the assessment, to establish educational equality, and to increase the efficiency of the institutions involved in assessment and measurement. To achieve this goal, it is required to provide the legal, technical, financial,

executive, and HR Infrastructures in NOET and to negotiate effectively with the involved ministries, organization, and institutes, such as the ministry of science, research, and technology; ministry of health and medical education; ministry of education and the technical and vocational training organization.

The results also demonstrate that ETS, CITO, and KICE pay particular attention to research and planning for comprehensive and practical research. They are pioneers in educational assessment research, new products development and policy-making studies and allocate considerable budgets to constructive research. NOET also launches and implements different research projects, but, it still has a long way to reach the desirable level. It is required to undertake research on new psychometric and testing subjects along with the objectives and missions of NOET to optimize the test development and scoring process. Accordingly, NOET needs to collaborate with internal and external experts in assessment, evaluation, and educational studies in order to improve the quality of research management.

One another aspect of the present study was to evaluate the human resources structure of NOET compared to those of its peers. As it was mentioned before, HR are regarded as a part of the organizational capital and play a very important role in realizing the organizational objectives. In fact, expert human resources are the key to the success of the knowledge-centred economy. The analysis of the organizational structure of the institutes under study shows that these centres have expert human resources and desirable working conditions based on team work, interactional and exchange. Hence, the expert human resources in different majors related to educational assessment and research and wide-ranging national and international relations can be regarded as an important factor for success and growth in these institutes. These centres arrange for required facilities for their employees' individual improvement. In addition to internal experts, they also constantly work with external education and testing experts even from other countries for their research and assessment activities. The presence of experts in different majors makes the research in different fields possible for them. They provide the suitable context so that many experts wish to cooperate with them.

The study of HR structures of NOET indicates that it has expert and competent human resources, but it still needs to increase them in order to realize the organizational goals in the most optimal way. Consequently, relating to its objectives and priorities, the organization must provide conditions for the recruitment of internal and external human resources in

related majors to empower its human resources and to enhance the dimensions of its activities, on one hand, and also support the improvement of the employees' knowledge, skills, and competence through providing them with facilities to continue their education and also through defining and administering modular training programs and holding specialized workshops and courses employing professors and internal and external experts in assessment, in form of empowerment programs. Training is regarded as a safe tool for the improvement of performance quality and for problem-solving in progressive organizations. Employees at different organizational levels need to gain new knowledge and expertise so as to optimize their performance (Shariatmadari, 2004). These goals can be realized when they are based on scientific needs assessment, fix issues and problems, change in the work procedures and mechanism consistent with the evaluation of trainings efficiency, based on fulfilling the official requirements.

The comparative study indicates the importance of educational policy-making in policy-makers' comprehension of education, the establishment of standards for education and research and the formulation of educational policies. ETS and KICE play important roles in developing educational policies through conducting comprehensive research. For instance, KICE does this by designing national curriculum and establishing teaching-learning policies. Educational policy-making is a field less considered by NOET. It mostly focuses on its administrative role. While, considering its experiences in high stake and large-scale testing, it plays an important role in helping the policy-maker to better comprehend the concepts of education and assessment. It seems that many challenges and concerns of NOET against the achievement of organizational goals come from not being involved in educational policy-making. Therefore, actions should be taken in this regard.

In the end, it is worth noting that an important point discovered through the evaluation of ETS, CITO, and KICE is the broadness of their international activity domain. They provide different countries with diverse services, such as consultancy, teaching/learning, and the evaluation of their assessment systems. Their resumes show their success and reputation of their international performance, which uncovers different reasons, the most important of which is their long history in testing, having expert and competent human resources, constant relations with other countries, customership and consulting services. Bearing successful international relations is a very important factor in introducing and improving the performance of any institute. NOET has much potential for providing international services,

first of all its neighbor countries. Therefore, it is worth that NOET enhances its international relations and its assessment services in order to develop into the educational assessment pivot in the region.

In general, by the comparison of NOET with ETS, CITO, and KICE, the following suggestions can be made to optimize and increase the efficiency of NOET:

- The enhancement of the activity domain of testing and the development of different types of tests with more emphasis on the implementation of qualification and certification tests for critical jobs and also employment tests
- Comprehensive planning for the centralization of assessment activities of different education levels in NOET and establishing an integrated educational assessment system
- Comprehensive planning for the empowerment of human resources as the most important organizational capital conforming to its mission, through systematizing and planning for recruitment of specialized human resources
- Empowerment of the existing human resources through enabling the employees to continue their education in specific disciplines and holding specific mid-career training workshops
- Creating a work environment based on interaction and scientific exchange in line with the realization of organizational goals and objectives
- Paying particular attention to research management system, defining and implementing research projects related to the activities of different departments and realizing the goal of any operation based on a research attachment.
- Planning for the supervision and support students' dissertations in assessment, measurement and testing based on future studies
- Enhancing international activities domain by providing consulting, training, and research services in order to develop into the pivot in educational assessment in the region
- Providing conditions for the cooperation of foreign specialists in the fields of assessment and measurement, testing, applied statistics, and educational research education and counseling
- Getting involved in educational policy-making through recruiting and fostering related human resources in order to present its active and effective role in the policy makers'

comprehension of the field of education.

To implement the above recommendations, at the first stage, NOET needs to determine its guidelines. The guidelines can be both general and specific. In its general sense, it can be defined as whatever the organization decides to accomplish or avoid (Alvani & Sharifzadeh, 2015). Here comes one of the main challenges. In fact, the organization is between an executive institution and a legislative one and consequently conforms to their executive and legislative institutions. Moreover, it has to respond to the judicial guidelines. In view of that, it is recommended that the organization mostly focuses on the implementation of the assessment of the education system of the country.

At the second stage, it must have a proper evaluation system in order to be attentive to the extent its mission and objectives are realized, an evaluation system that leads to constant improvement and transparent responsiveness besides supplying information and applies all usual instruments, including performance evaluation, modeling and benchmarking (Mohammadi, 2012).

It is expected that the institution in charge of policy-making and steering of NOET provides the suitable context for the optimization, revision, and improvement of the functions and activities of NOET, using the recommendations, and modeling on the institutes under study based on the future studies for the organization.

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