

## E-ASSESSMENT AND CONSTRUCTIVISM MODEL: A SWOT ANALYSIS (VIABILITY OF E-ASSESSMENT)

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### ABSTRACT

*This paper presents a learner-centered model for designing e-assessment homework within e-assessment environments. The model is based on constructivism learning hypothesis. A honest situation using the model within an e-assessment course is presented to show the purpose of the model in an actual e-assessment environment. Taken for established that the constructivists' model of theory is true in which learner-centered, learner's autonomy and teacher as facilitator factors are backbones in the training procedure; then why not to quality measurement into the hands of the learner. Hence, pedagogical course ware in line with e-assessment-based instruction modules, applications and templates know how to be developed to satisfy the following principles advantage more; supportive feedbacks are reported to be wonderfully successful to that end. The purpose of this qualitative study is to viewpoint on viability and practicality of e-assessment via a SWOT analysis skill in which clear parameters such as Strengths, Weaknesses, Opportunities and threats (SWOT), based scheduled the learners, teachers, administrators and difficult expert attitudes to that educational model and in line with Richard's maxims are favored. To this end, four questionnaires, a five-point Likert scale one for three levels of respondents ranging beginning 1 (strongly agree) to 5 (rejection idea), are industrial for data elicitation from the SWOT, working in e-learning centers of some Iranian universities or oversea experts. Statistically, participants showed their notice in the strengths and opportunities as well as the prepared values of e-assessment. But, the study has a deep test in its design; another challenging difficulty is the low IT literacy of the teachers and administrators and the final one refers to the misconception noble savage of the learners. Finally, this study predicts the future stance of development and expansion of e-assessment in the educational context with more collaboration among learners, teachers, administrators and testing experts in educational settings.*

**KEYWORDS:** E-assessment, Constructivism, SWOT analysis, Viability, IT literacy, Supportive comment

### PRELIMINARIES

E-assessment can be clear as education facilitated and supported through the use of information and communications technology. It covers a range of activities from the use of knowledge to hold learning as part of a blended approach (a mixture of traditional and e-assessment approaches), to learning that is delivered absolutely online. Anything the information, however, learning is the vital element- Assessment is presently one of the key buzzwords among language researchers

and education specialists, and now uses as assessment tools which can better track education and knowledge progress. Assessments to facilitate create known Intelligent, which we reduce to smart assessments present teachers with a quick and simple way to behavior assessment for learning. Smart Assessment presented on-line teaching means are linked to each approach to guide teachers in moving students to the next stage. Many smart tests are now being trialed in schools and their influence on students and teachers learning is being estimated. We are often asked this and the answer is that the 'e' used to represent 'electronic' but nowadays it merely signifies the use of knowledge. Koohang and Harman (2005) stated that "e-learning is the delivery of education (all actions relevant to teaching, teaching, and learning) through several electronic media." Koohang (2004) stated that appropriate instructional design that includes learning theories and principles is critical to the getting of e-learning. However e-learning is becoming gradually prevalent among students, the issue of education in e-learning ideas must be given a complete attention. In other words, certifying learning, which is done through e-learning courses, must be significant in designing instruction for e-learning courses.

There are lots of good reasons to believe an online education curriculum:

- Virtual training is more reasonable than traditional classroom training, with savings of 60% or more.
- Virtual courses can be taken in multiple sittings and are offered 24 hours a day, 7 days a week — to better hold your busy plan.
- Virtual training is as mobile as you are! Your teaching can take place on the road, in the café, or any other place you have an internet-accessible computer.

### *Aims for replacements*

Detachment learning, or e-learning, is labeled a clarification to these problems for the following reasons:

- A comprehensive knowledge syllabus is mapped to the relevant curriculum.
- Classification of national specialists to create a comprehensive, nationally quality assured e-learning resource covering the entire curriculum.
- Comfortable is available anywhere with an Internet link.
- Knowledge paths and the Learning Management System allow learners and trainers to match the e-learning to their current learning needs and clinical case load, ensuring that theory is reinforced by practice.
- E-assessment tools provide learners and trainers with suggestion of development and can be questioned at local and national levels to ensure consistent high quality training, with four tangible aims:
  - 1- Our goal with the smart tests is to target basic critical concepts, and designs;
  - 2- Small and easy to manage on-line tests that can diagnose to what extent students understand the concept;
  - 3- Educational and prompt feedback to teachers about class and different performance;

- 4- Directed teaching suggestions that address the conceptual hurdle strong research;
- 5- Support for the diagnosis and for the advice given;

This paper is planned as follows: 1) To learning viability of E-assessment from multi-dimensional views such as the office terminology in gain and loss question and problems use of E-assessment in our country for practicality, usability, cost-effective, probable, sensitive, cultural, facility-based instances. 2) The argument then turns to telling an ideal agenda for designing E-assessment environment based on submission of constructivists learning theory and Richard's maxims and from the views of teachers, students and administrators for better acting the suggested design in an actual E-assessment environment. 3) By SWOT analysis, this research plans to enable department of education in Iran to have an summary of the system interoperability and how best to capture the possible targeted segments. 4) Finally, this paper to describe the road map of this technology-based learning and how the system can be developed and extended in the educational system. 5) Conclusion and references are drawn for further researches on the use of E-assessment model in E-learning environments that adds to the practical reduced value of this research.

### ***Constructivism as the principal model***

Entrenched in learning theories advanced by Dewey (1916), Piaget (1972), Vygotsky (1978) and Bruner (1990), constructivism learning theory is defined as active construction of new knowledge based on a learner's prior experience. Wool folk (1993, p. 485) states the following: The key idea is that students actively construct their own knowledge: the mind of the student mediates input from the outside world to determine what the student will learn. Knowledge is dynamic rational work, not reactive function of teaching. Koohang and Harman (2005) stated that e-learning is the delivery of education through various electronic media. Koohang (2004) stated that appropriate instructional design that includes learning theories and principles is critical to the success of e-leaning. Investigate agrees that constructivism learning theory, which focuses on information structure based on learner's before practice, is a good fit for e-learning because it ensures learning among learners (Harman & Koohang, 2005; Hung, 2001; Hung & Nichani, 2001; Koohang & Harman, 2005). Honebein (1996) advanced a set of goals that aid the design of constructivism in learning settings. The goals are to:

- Deliver experience with the knowledge production process;
- Deliver experience in and appreciation for multiple viewpoints;
- Insert learning in realistic and relevant contexts;
- Support ownership and voice in the learning improvement;
- Insert learning in social experience;
- Encourage the use of multiple modes of demonstration;
- Encourage self-awareness in the knowledge construction process. (Honebein, 1996 p. 11)

Murphy (1997) presented an excellent summary of characteristics of constructivism learning theory based on a comprehensive review of literature. These characteristics are as follows: Many perspectives and images of conceptions and content are presented and encouraged.

- Aims and objectives are derived by the student or in cooperation with the teacher or system.

- Teachers serve in the role of leaders, monitors, coaches, tutors and facilitators.
- Actions, opportunities, tools and environments are provided to encourage metacognition, self-analysis -instruction, -suggestion & understanding.
- The student plays a central role in facilitating and monitoring learning.
- Education circumstances, environment, skills, comfortable and tasks are appropriate, honest, and authentic represent the natural complexities of the real world.
- Main sources of data are used in order to ensure authenticity and real-world difficulty.
- Information construction and not reproduction is emphasized.
- This structure takes place in individual contexts and through community cooperation, association and knowledge.
- The learner's previous knowledge structures, beliefs and attitudes are considered in the knowledge construction process.
- Problem-solving, higher-order thinking skills and deep appreciative are emphasized.
- Errors provide the opportunity for insight into students' previous knowledge constructions.
- Survey is a favored approach in order to encourage students to seek knowledge in-dependently and to manage the pursuit of their goals.
- Learners are provided with the opportunity for learner transport learning in which there is an increasing difficulty of tasks, skills and information achievement.
- Knowledge difficulty is reflected in an importance on theoretical inter relatedness and inter disciplinary knowledge.
- Cooperative and cooperative learning are favored in order to expose the learner to alternative viewpoints.
- Support is facilitated to help students perform just beyond the limits of their ability.

Richards (1996) mentions four other maxims: the Maxim of Accuracy, the Maxim of Efficiency, the Maxim of Conformity, and the Maxim of Empowerment. Richard Maxims are principles that are developed from a good teaching system:

1. The maxim of involvement (follow students' interest to maintain involvement)
2. The maxim of planning (plan and try to follow your plan)
3. The maxim of order (maintain discipline)
4. The maxim of encouragement (seek ways to encourage student learning)
5. The maxim of accuracy (work for accurate student output)
6. The maxim of efficiency (make most of the efficient use of class time)
7. The maxim of conformity (make sure your teaching follows the prescribed method)
8. The maxim of Empowerment (give the learner's control)

### ***SWOT analysis***

SWOT analysis (instead SWOT Matrix) is a controlled planning method used to value the Strengths, Weaknesses, Opportunities, and Threats complicated in a project or in a business project.

Setting the objective should be done after the SWOT analysis has been completed. This would allow possible aims or objectives to be set for the association.

**Strengths:** features of the business or project that gives it an advantage over others;

**Weaknesses:** are features that place the team at a disadvantage relative to others;

**Opportunities:** elements that the project could achievement to its benefit;

**Threats:** elements in the environment that could reason trouble for the business or project;

### ***Internal and external factors***

1. Internal factors – the *strengths* and *weaknesses* internal to the association.
2. External factors – the *opportunities* and *threats* presented by the environment external to the association.

### ***Benefits of E–Assessment***

Some of the benefits of e–assessment that one might want to consider are:

- Fast feedback to students,
- Allows practice and review,
- Direct response to control,
- Allows assessment of a course's strengths and weaknesses,
- Can be related to other computer–based or online materials.

### ***Plagiarism***

Plagiarism is a fear for many thinking of using CAA, (Weller, 2002); but Rovai, (2000) and Carroll, (2002) suggest that assessment design is the key to deterring plagiarism. O'Hare & Mackenzie, (2004) assert that there is a level of imagination and rigor required for the design of assessment online compared to that for more traditional forms of assessment. Weller et al, (2002) suggests that the use of portfolios can help to counter plagiarism, as these places less reliance on single assessment items. The JISC funded Plagiarism Advisory Service gives advice and guidance on plagiarism prevention.

### ***Causes for using E–Assessment***

Bull and McKenna, (2004: page 3) suggest a number of reasons that academics may wish to use CAA:

1. To increase the frequency of assessment, thereby, motivating students to learn, encouraging students to practice skills.
2. To broaden the range of knowledge assessed.
3. To increase feedback to students and lecturers.
4. To extend the range of assessment methods.
5. To increase objectivity and consistency.
6. To decrease marking loads.
7. To aid administrative efficiency.

Nichol and Macfarlane, Dick, (2005; 2004) identified from the research literature seven principles of good feedback practice that could support learner self–regulation – active control by students of some aspects of their own learning.

### ***Assessment and Education***

Assessment is essential to the perform of learning. For students, excellent presentation on ‘high-stakes’ assessment gives contact to promote learning opportunities and employment. For teachers and schools, it provides verification of achievement as persons and organizations. Assessment systems are used to evaluate personality and organizational achievement, and so know how to have a reflective driving influence on systems they were planned to supply.

There is an intimate association between teaching, learning and assessment, illustrated in below figure. Robitaille, et al, (1993), distinguish three components of the curriculum: the planned program (set out in guidelines statements), the implemented program of study (which can only be celebrated by studying classroom practices) and the attained curriculum (which is what students can do at the end of a course of study). The links between these three aspects of the curriculum are not straightforward. The ‘top-down’ ambitions of some policy makers are hostages to a number of other factors. The assessment system tests and scoring guides- provides a far clearer definition of what is to be learned than does any verbal description (and perhaps provides the only clear explanation), and so is a far better basis for curriculum planning at classroom level than are impressive statements of educational ambitions. Teachers’ values and competences also mediate policy and ability; however, the assessment system is the most powerful driver of classroom practice.

### ***Why is e-learning often related to constructivist pedagogy?***

Constructivism is at the present one of the principal pedagogies used in instruction. It encourages learners to build their own knowledge based on individual experience and apply this directly to their environment. The meeting point is on education rather than instruction with the individuality at the middle of a community process.

Constructivism is regularly measured the ideal pedagogy for e-learning as it both draws upon the strengths of the medium and best overcomes it weaknesses:

- 1- Constructivist pedagogy sees the student at the middle of the education familiarity rather than the teacher. In the e-environment, it is hard to continue the conventional role of the teacher, but more than that, Internet forces the student to actively connect in their learning and gives them such a degree of choice– of what to study, where to learn, how to revise and with whom. It is as a result accelerating the procedure of introduction the student at the center of the knowledge skill.
- 2- Constructivist pedagogy sees familiarity being built and practical according to individual experience. E-learning enables context-based, work-based education.
- 3- Through the learner at the center of the learning positive, students require to take dependability for the learning. Online technologies simply tolerate students to view and arrival upon their learning.
- 4- Constructivist pedagogy sees the student as an active member in their education knowledge rather than a passive vessel to be filled with information. E-learning military learners to be adventurer seeking out in sequence, making links and structure knowledge.

5-Constructivism sees education as a social occurrence; therefore conversation and collaboration are crucial. E-learning simply enables communication between learners without the barriers of point in time and place.

### ***E-Assessment and Constructivism***

Most learning theories recognize the importance of assessment and feedback. Indeed, according to constructivists, learning results from our reflections on feedback from environmental interactions. What are perhaps different about constructivist approaches to assessment are their emphases on the importance of the individual's processing of environmental feedback and so on; the design of assessment-centered environments that provide ongoing meaningful feedback to learners. Constructivism suggests that self-assessment is integral to learning, and so implies that opportunities for the same should occur continuously and be embedded within learning activities. Constructivist theory also implies that it is especially important to encourage learners to continuously construct and reconstruct their knowledge, to evolve and change their understandings, in response to feedback. Thus, constructivist approaches contend that good assessment practices are those that value revision and the processes of knowledge construction.

Because constructivism views knowledge as complex mental structures, constructivist approaches further contend that good assessment practices emphasize learning with understanding and the application of knowledge, and not the memorization of isolated facts and procedures.

In many ways, the online environment offers considerable support for the development of assessment-centered learning. To begin with, online course platforms provide very complete records of student work, including user logs and discussion transcripts as well as more traditional course assignments, quizzes, tests, and so to support multiple and varied forms of assessment. In addition, most course platforms also provide tools for embedding assessments within student effort, and for supervision course homework and grading and production these obvious to students. Furthermore, as earlier noted, computer-based assessments can be embedded in courses to give automatic and immediate feedback.

On the other hand, assessment and feedback can be mainly demanding for online instructors. To start with, the lack of usual face-to-face meetings makes common, ordinary feedback important. Online instructors usually need to extend and assess many more homework over the track of a semester than face-to-face instructors, who have the prospect to informally assess and remediate student understandings in the classroom. In addition, online learners expect a much quicker turn around on their assignments than traditional students. Furthermore, while programmed assessments are easily managed online, some research suggests that students learn better from personal feedback tailored particularly to their needs than from preset feedback, mainly when learning involves higher order perceptive and the application of understanding.

### **RESEARCH QUESTIONS AND HYPOTHESES**

R.Q1: To what extent do learners, teachers and administrators encouraging of smart assessments?

R.Q2: To what extent are the findings of such assessments generalizable and global or just local?

R.Q3: To what extent are the respondents real representatives of beneficiaries'?

The hypotheses include: Respondents are not experienced and mature enough to decide the value of e-assessment in universal and e-assessment-based education in particular. Therefore, viability and generalizable of the agenda needs a review.

## METHODOLOGY

### *Introduction*

The world stepped into the era of online information and technologies that practically have contact on all sides of human being life including economics, education, social and cultural sides. Certainly, the progresses made advances in World Wide Web and Open Source Softwares have led to various changes in the areas of teaching, way of education and learning, causal to the formation of a fresh type of education and learning program, termed as "E-learning". Expansion of virtual E-assessment is one of the most appropriate approaches for making higher education for students to access a plethora of learning materials, easily and conveniently. Today, E-assessment is one of tools for education. On the other hand, its application and development face challenges and obstacles; this study attempts to disclose challenges and infra structures for the development of E-assessment in developing countries such as Iran and to know what problems and challenges exist and what solutions make E-assessment as a major success with the fact that E-assessment is a need for Iran. However, the focus is still largely on creating the E-assessment content for educational system. It is necessary to consider the individual and dependent factors that play an important role in the development and adoption of E-assessment. For example, attitude and belief of students, teachers and administrators towards E-assessment may affect their acceptance of the technology in the teaching-learning process. Development of virtual E-assessment is invented to be means to that end by triggering certain such as electronically self instruction and suitable access to self-assessment.

### *Design*

This qualitative study, for evaluate the E-assessment effects on improving learning quality a survey was performed. In terms of nature this study is qualitative, variables are non-experimental, and in terms of objective, it is an applied research and favors descriptive/correlation method. As a result, the correlation of independent variables such as, Strengths, Weaknesses, Opportunities and Threats are measured with dependent variables which are the approach of administrators, teachers and learners towards E-assessment. The qualitative data are gathered from learners, teachers and educational administrators through five Likert- point questionnaires along with face-to-face interviews. Interviews are done at each selected E- learning center in order to obtain the participants' perceptions towards the helpfulness of E-courses. The qualitative approach was selected as it would help the researcher to confine correctly the standpoints of participants in further facets. The total procedure convoluted collecting information throughout the interview, asking questions about the data collected, decoding the connotation throughout a combination of techniques, analyzing and evaluating the conclusions and disseminating the result.

### *Participants*

The statistical population (N=110) of this paper consists of three groups, including 10 educational administrators; 30 teachers and 60 learners from three Universities which offered their General English in e-assessment-based instructions format. The participants were invited to respond to items, receiving information in a face-to-face oral interview. Data were mobile recorded, based on their formal consent.

### ***Instrument***

On the basis of review of the literature, three questionnaires were developed to collect the necessary data from administrators, teachers and learners. The questionnaire covered four areas: 1) strengths features; 2) weaknesses features; 3) opportunities features; 4) threats features; main components of e-learning in higher e-assessment extension and education in Iran, which were measured on a five-point Likert scale which ranged from 1 (strongly disagree) to 5 (No idea). Comfortable and face validity of research instrument was complete by committee members and some experts in this turf. Questionnaire dependability was separately planned by Alpha Cronach coefficient for each question of three questionnaire templates. Based on the consequences of this test and the correlation coefficient, some questions were eliminated and some others were adapted. In general, the reliability for the overall research instrument was estimated at 0.86. Administrators, faculty members and students of Fars Science and Research Branch Islamic Azad University, Kazerun Islamic Azad University, Shiraz medical University filled questions of questionnaires formats, handed out to each group. The compiled data were saved at data bank designed for this purpose. Data collected were analyzed using the Statistical Package for the Social Sciences (SPSS 18). Suitable statistical measures for explanation (frequencies, percent, means, and standard deviations) and inference were used.

### ***Data Analysis***

Participants' opinions were evaluated using a self-administered 30-item, Likert scale questionnaire (items regarding Strengths, Weaknesses, Opportunities and Threats of E-assessment method). Administrators, teachers and learners ranked these choices in an order of completely agree (score: 5) to no idea (score: 1) in a behavior which best described their opinions. In addition, the questionnaire had an open-ended question engaging administrators, teachers and learners to reproduce their viewpoints about performance of learning programs through E-assessment:

I) Strengths: If the method attracts the administrators, teachers and learners to follow the E-assessment eagerly (10 items: e. g. "Online tests provide an opportunity for students to complete the exam at any time at his/her disposal"; "Online assessments can provide increased instruction time")

II) Weaknesses: How does the student feel independently in learning within the method (5 items: e. g. "One of the noted barriers to use e-assessment is related to growing up professional candidates for planning online tests and their evaluation processes"; Face-to-face method makes the researcher participate in class for learning").

III) Opportunities: How does the student think about the effectiveness of the method on his/her learning outcome (12 items: e.g. I understand the course objectives and educational content

deeply in e-learning"; "while learning substance is being delivered honestly by the tutor in class, I study improved")

IV) Threats of using E-assessment: How does the student feel about his/her ability to use electronic educational materials in the e-learning method or deal with traditional method requirements in face-to-face approach (8 items: e.g. "I can easily download and study educational material"; "I can't keep pace with educator's teaching speed in the class").

Answers to open-ended questions were analyzed via content analysis in arrange to classify them into three themes: helpful, unhelpful and unbiased explanation.

## RESULTS AND DISCUSSION

To find out the factors and successful fields for E-assessment relevance expansion in educational setting, the determined variables from administrators, teachers and students were entered in to basis analysis.

*Descriptive Statistics of the students' questionnaire*

	N	Minimum	Maximum	Mean	Std. Deviation
Threats	40	8	20	14.70	2.356
Weaknesses	40	12	23	8.22	2.778
Strengths	40	20	47	36.25	6.134
Opportunities	40	20	53	38.90	6.961
Sum	40	70	138	108.08	14.759
Valid N	40				

The on top of descriptive statistics in the table seems to provide hold up to the reality that based on the accomplished students' questionnaire, the students favor items, associated to the strengths and opportunities rather than the weaknesses and threats for implementing and civilizing e-assessment model in Iranian educational system.

*Learners' Questionnaire*

**Case Processing Summary**

	N	%
Cases Valid	40	100.0
Excluded <sup>a</sup>	0	.0
Total	40	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.806	30

*Teachers' Questionnaire*

**Case Processing Summary**

		N	%
Cases	Valid	40	100.0
	Excluded <sup>a</sup>	0	.0
	Total	40	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.891	30

*Administrators' Questionnaire*

**Case Processing Summary**

		N	%
Cases	Valid	10	100.0
	Excluded <sup>a</sup>	0	.0
	Total	10	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.766	30

*Testing experts' Questionnaire*

**Case Processing Summary**

		N	%
Cases	Valid	10	100.0
	Excluded <sup>a</sup>	0	.0
	Total	10	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.766	30

But the testing experts and experienced test developers had different conceptions. They understood certain beginning and relevance of interfaces workshops are necessary for any person, who needs to have a statement in this respect. A absolute concrete conclusion refer to the virtual communication and statement mode. Respondents choose questionnaires' items based on the information them predictable from the investigator. Except testing experts procedure should be charily attended to in prospect associated researches.

### **Discussion**

This paper develops information about successfully application of E-assessment in education context based on social studies research. On the other hand, the recent study reveals that the usability of E-assessment is doubtful and it cannot be relied upon, particularly in social science research. Therefore, the following suggestions entertain precedence:

- 1) **Right virtual communities preferred for survey circulation:** The investigator should effort to choose communities, recognizable with the question of the research. As a matter

- of fact, they were involved in the use of E-assessment in learning system but they have not enough information about merit and demerit in use of such concepts.
- 2) **In rank overload:** Possibly, the message in each item about E-assessment in the questionnaire was not attended to and just reacted to by the potential respondents. On the other hand, all of respondents do not have enough discretionary time to ask more information about meaning of ambiguous items.
  - 3) **Simplicity of refusing to participate in the assessment:** Questionnaire surveys rely extremely on respondents' program power to contribute in. But the questionnaire sort of survey makes it easy to decline by the participants. A probable respondent might only remove the message conventional, either clicking or not clicking on the question with no explanation needed. Absent responses reduce the validity of following statistical analysis. The absolute number of incomplete items is not of great importance as is the percentage of the total number of returned questionnaires not fully completed.
  - 4) **Mistrust/fear of commit a breach of ambiguity:** Perhaps some people mistrust questionnaire surveys or fear that their identity may be revealed.
  - 5) **Physically different:** The researcher has to travel to certain locations to find people who belong to certain organizations as participants. Assistance from professional organizations will definitely help to obtain valid and reliable results. Questionnaire surveys definitely cannot research much more geographically diverse regions that online surveys can. There are more expenses required for either participants or academics.
  - 6) **Huge attempt:** On the other hand, to raise the reaction speed and achieve consistent and suitable results from questionnaire surveys, huge attempt is necessary. The survey needs to be carefully designed. The extent and number of open-ended questions must be limited. On one hand, it is significant to consist of all the essential items in order to gather the information required and to control the length of the questionnaire as longer surveys may defer a lower reply rate.
  - 7) **Authentic Question:** This survey has not real authenticity because generally it cannot reflect potential pitfalls application of e-assessment in nowadays educational system of Iran. However, a single cross-sectional survey cannot unravel the different effects of each of SWOT factors on each other; in fact it is very difficult on the base of result of this survey to prove that exactly which factors actually cause impediment to the viability improvement of this application.

## CONCLUSION

Other restrictions to this survey refer to gather data: 1) limiting access to large population of concern 2) lacking time and funding to carry out survey in different point of time 3) lower priority for carrying out a survey because of low IT literacy of participants to provide accurate, authentic responses 4) this self-constructed questionnaire with closed-ended questions may have a lower validity rate than other survey types 5) collecting data cannot reflect the individual respondent circumstances or the local culture that may be the root cause of respondent behavior (Further research) For future work, we plan to continue with the implementation of the flexible e-assessment system. A diagnostic assessment will be included in the database in order to identify the students' learning styles. Different question types will be developed including free-text

response questions. The various question types will be mapped to the different learning styles and the system will automatically present the relevant questions for the identified learning styles. Adaptive assessment based on the Item Response Theory will also be effective in further research studies.

Questionnaires can be either devised by the researcher or they can be based upon some ready-made index. There are obvious advantages in using ready-made questionnaires, a baseline to compare results with validated and reliable available data. Questionnaires were completed in the form of a self-administered questionnaire i.e. Where the respondents were requested to complete the questionnaire in a limited time through in the form of a structured interview, where the researcher explains the aim and scope of this study.

Irrespective of which method is used, the formulation of the questions and the structure of the questionnaire are critical to the success of the survey. For better implementation of the flexible e-assessment system in educational system, a diagnostic assessment should be designed in the databases in order to identify preferred students' learning styles.

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