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Washback effect of high-stakes tests on ICT usage: Teachers' perceptions

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Abstract: It has widely been acknowledged that high-stakes tests influence teaching and learning process. A number of studies have been performed in different countries to investigate the washback effect of high-stakes tests on the various stakeholders of the tests. Nevertheless, educational researchers have pointed to this need that the influence of high-stakes tests on using Information and Communication Technology (ICT) in the classroom should be explored. The purpose of this paper is twofold: first, to examine whether high-stakes Entrance Exam of the Universities (EEU) in Iran influences the use of ICT in English classes and second, to identify the teachers' perceptions of the factors encouraging and discouraging teachers to integrate ICT into the curriculum. To achieve the purpose of the study, a validated questionnaire was administered to 30 English teachers who were teaching in the high schools in Isfahan, Iran. Stratified random sampling was used to select equal number of teachers from all educational districts in the city of Isfahan. The descriptive analysis of the data showed that the content and format of the EEU prevent teachers to use ICT in English classes. The majority of the respondents also believed that the parents' and principals' expectations of the students to perform well on the EEU discourage them to use ICT applications in their teaching processes. Moreover, various ways to integrate ICT into the curriculum, ability to use ICT for sharing information and ideas with others, and evidence of the positive impact of ICT on teaching and learning are important factors motivating teachers to integrate ICT into the curriculum. On the other hand, insufficient technical supports at schools and little access to Internet and ICT prevent teachers to use ICT in the classroom. The study has pedagogical implications that can benefit teachers who teach in high-stakes test contexts.

Key words: Washback, ICT, High-stakes tests, Entrance Exam of the Universities (EEU), Perceptions.

INTRODUCTION

The term washback refers to the property of the test, especially high-stakes test, which concerns its effects on teaching and learning (Cheng, 2004). Alderson and Wall (1993) consider washback to be what teachers and learners do that "they would not necessarily otherwise do" (p. 117). High-stakes tests, on the other hand, are defined as tests whose results are seen by students, teachers, administrators, parents, or the general public as the basis upon which important decisions are made (Qi, 2004). The washback effect of various high-stakes tests has been investigated by different researchers (see Cheng, 1998; Watanabe, 2004; Ferman, 2004; Yildirm, 2010; Melor Md Yunus, Salehi & Kashefian-Naeeini, 2011). However, there is a lack of research regarding the washback effect of the Entrance Exam of the Universities (EEU) in Iran on the stakeholders, educational system and the whole society. In Iran, as in many other countries where a university entrance exam is the sole criterion for student selection, limited space and resources have restricted many talented and enthusiastic applicants seeking access to higher education (Kamyab, 2009). Therefore, the phenomenon of the university entrance exam has caused discontent and conflict.

In Iran, the EEU is the most important nationwide high-stakes test administered annually in June. The high school graduates are required to sit for this test in order to get the passport letting them enter the higher education. The unique format and content of the EEU implicitly or explicitly direct the high school teachers to teach towards this test and focus on the educational materials which will be tested in the EEU. It is generally believed that this paper-based test hinders the high school English teachers to use Information and Communication Technology (ICT) in English classes. The purpose of this paper is to explore the EEU washback effect on using ICT in English classes and to examine the high school English teachers' perceptions of the factors motivating or preventing teachers to integrate ICT into the curriculum.

Literature Review:

The Role of High-Stakes Tests:

High-stakes tests often do not accurately measure the students' skills or knowledge, and even cause stress for most of the students. Moreover, they are often given as a single long test lasting for about 3 to 4 hours. Given the pressure and stress of high-stakes tests, students may be urged for cheating and learning multiple-choice test-taking skills. Even a group of critics believe that since some students perform poorly under the

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pressure associated with high-stakes tests, these tests are less representative of their appropriate standards of achievement.

High-stakes tests can be norm- or criterion-referenced, and internal or external in origin (Qi, 2004). They often provide future academic and employment opportunities on the basis of their results. Public examinations or large-scale standardized tests are usually considered as high-stakes tests because their results are used to make decisions that are of prominent educational, financial, or social impact (Genesee and Upshur, 1996). The high-stakes tests such as employment exams or university entrance exams are powerful enough to influence the educational systems directly or indirectly. However, these tests are often criticized for a number of reasons. Some researchers believe that the results of high-stakes tests should not be used as the main criterion for decisions related to graduation, admission to universities and promotion (Cheng, 1998; Watanabe, 2004; Melor Md Yunus, Salehi & Kashefian-Naeeini, 2011). It is inappropriate to base major decisions about students, teachers, schools, or instructional programs on a single test because it is inconsistent with what we know about the process of learning and testing. High-stakes tests can be used as one of the measures to make significant decisions about the students or other stakeholders. In general, critical decisions about the students and educational programmes must involve more than the results of a high-stakes test. A day-to-day classroom assessment which helps teachers improve the quality of instruction is highly recommended by the opponents of high-stakes tests.

ICT in Teaching and Learning:

Information and communication technologies (ICTs) refer to a wide range of technologies. ICTs are defined as technological tools and resources which are used to communicate, create, disseminate and manage information (Thierer, 2001). These technologies include computers, the Internet, radio, television, social networks and etc. In the last decade, there has been a growing interest in using computers and the internet to improve the effectiveness of teaching and learning in all levels and in both educational and non-educational settings. Although nowadays the older technologies such as radio, television and telephone are given less attention, they have a longer and richer background as educational tools. For example, radio and television have been used for distance education for over four decades. Therefore, the integration of new ICTs such as computers, the Internet and social networks in education is still in its infancy in comparison with the use of older technologies such as radio and television. This is due to the limited infrastructure of ICTs and the high costs of access to internet in developing countries (Carlson and Firpo, 2001).

The study of integrating ICT in teaching and learning is one of the most widely discussed issues in the field of education (Rosen and Weil, 1995; and Thierer, 2001). The majority of researchers and educators believe that ICT, when properly used, improves teaching and learning and provides more teaching and learning supports for the teachers and learners (see Westera and Sloep, 2001; Melor Md Yunus, Lubis and Lin, 2009; Salehi and Salehi, 2011) . Poole (1996) pointed out that computer illiteracy is considered as the new illiteracy. This statement clearly shows the importance of equipping the schools with computer facilities and using ICT in schools. There is no doubt that using ICT in schools improves teachers' instructional process and facilitates students' learning process. Many research studies have shown the positive effects of technology aided instruction (see Burnett, 1994; Fitzgerald and Warner, 1996). Even, some ICT related studies have shown that there are a number of factors that motivate teachers to use ICT in teaching. However, some discouraging factors act as a barrier and prevent teachers to integrate ICT applications into the teaching process.

A number of different ICT tools and applications may be integrated in teaching and learning (Melor Md Yunus, Lubis and Lin, 2009). Some of these tools and applications may be designed specifically for educational purposes and some others for more general use. The choices of resources, and the way they are used, can be linked to different learning theories which may be invoked to explain or predict learning benefits from the use of ICT (Wilshart and Blease, 1999). Roblyer and Edwards (2000) believe that the use of ICT in education has evolved from two main approaches, namely directed and constructivist instructional methods. The theoretical foundations of directed instruction are based on behaviorist learning theories and information processing theory, which is a branch of cognitive psychology. The theoretical foundations of the constructivist approaches are based on the principles of learning derived from cognitive learning theory.

Methodology:

This study employed a validated questionnaire survey to (i) identify whether the high-stakes EEU influences the use of ICT in English classes and (ii) measure the teachers' perceptions of the factors encouraging and discouraging teachers to integrate ICT into the curriculum. The participants consisted of 30 high school English teachers who were stratified randomly selected from the five main educational districts in the city of Isfahan, Iran. The respondents were requested to judge whether the high-stakes competitive EEU in Iran acts as a facilitator or barrier in using ICT in the classroom. The participants were familiar with the use of ICT since most of them use the Internet for the purposes of gathering information, sending email and working on social networking.

The final draft of the questionnaire consisted of five main parts and was designed and prepared in English. The first part consisted of six demographic items related gender, age, academic qualifications, years of teaching experience, major grades that were currently being taught and numbers of teaching periods per week. The second part consisted of three multiple-choice items related to the teachers' familiarity with ICT. The third part consisted of 11 items and was designed to elicit teachers' perceptions of the EEU washback effect on using ICT in the classroom. All the items in this part were designed on a five-point Likert scale of agreement, where one = strongly disagree, two = disagree, three = undecided, four = agree and five = strongly agree. The five-point Likert scale was employed as it is one of the most commonly accepted Likert scales in the education field (Cohen, 1976; Cheng, 2004; Green, 2007). The fourth part, including eight items, dealt with the factors that encourage teachers to use ICT in the classroom. And the last part of the questionnaire consisted of eight items dealing with the factors that discourage teachers to use ICT in the classroom. The items in the last two parts were designed on the Likert scale of agreement as well. In the analysis phase of the study, frequencies, percentages and means for each item were calculated and presented in tables.

Results And Findings:

The results and findings are presented in five separate sections. First, the demographic data are presented, which is then followed by the analysis of the data obtained from the second part, teachers' familiarity with ICT. In the next three sections, the results are categorized according to three themes, namely, the washback effect of the EEU on using ICT in the classroom, factors encouraging teachers to use ICT and factors discouraging teachers to use ICT in the classroom.

Demographic Data:

It can be seen in Table 1 that 60 percent of the surveyed teachers were male and 40 percent were female. More than two thirds of the teachers (70 %) aged 20 to 40 and less than one third (30 %) aged over 40 indicating that the majority of the English teachers were young or middle-aged. More than half of the respondents (60 %) had Bachelor's degree and 30 percent of them had Master's degree. Three teachers were PhD candidates who were pursuing their postgraduate studies. The majority of the teachers (70 %) had one to nine years of teaching experience, and 30 percent of them had more than 10 years of teaching experience. Exactly one third of the respondents were teaching in pre-university centers as the major grade that they were teaching and the remaining two thirds were teaching in grades one to three. More than half of the sampled teachers (53.2 %) were teaching between 16 to 27 hours per week and less than half of them (46.8 %) were teaching more than 28 hours in a week.

Table 1: Demographic characteristics of the teachers.

Items	Variables	Frequency	Percent (%)
Gender	Male	18	60.0
	Female	12	40.0
Age	20-30	7	23.3
	31-40	14	46.6
	41-50	6	20.0
	Above 50	3	10.0
Academic qualifications	Bachelor's degree	18	60.0
	Master's degree	9	30.0
	PhD Candidates	3	10.0
Years of teaching	1-3	3	10.0
	4-6	7	23.3
	7-9	11	36.6
	10 and above 10	9	30.0
Major grades of teaching	Grade One	6	20.0
	Grade Two	5	16.6
	Grade Three	9	30.0
	Pre-university level	10	33.3
Weekly teaching hours	16-21	8	26.6
	22-27	8	26.6
	28-33	9	30.0
	Above 33	5	16.6

Teachers' familiarity with ICT:

The second part of the questionnaire, including three items, was related to the teachers' familiarity with ICT. When the respondents were asked about their personal experience with ICT, it was found that the majority of high school teachers (70 %) considered themselves as frequent or confident users of ICT. This belief is a clear indication of the high school teachers' familiarity with ICT; however, this does not necessarily mean that the teachers will integrate ICT into the curriculum. Less than one fourth of the respondents (23.3 %) were limited users of ICT and just two teachers had never personally used ICT. When the teachers were requested to

judge about themselves regarding the use of ICT in the classroom, the majority of them (76.6 %) stated that they never use ICT in the classroom or they prefer to use it very little. As it can be seen in Table 2 and Figure 1, most of the teachers (83.2 %) believed that their colleagues are not familiar with ICT or they use the ICT very little. Based on the surveyed teachers' perceptions, just one sixth of the teachers (16.6 %) are frequent or confident users of ICT. In fact, the results of this item are not consistent with the results obtained from the first item in this part in which the teachers were asked about their personal experience with ICT.

Table 2: Teachers' familiarity with ICT.

Items	Variables	Frequency	Percent (%)
How is your personal experience with ICT?	Never Used	2	6.6
	Limited User	7	23.3
	Frequent User	14	46.6
	Confident User	7	23.3
How do you judge yourself in using ICT in your classes?	Never Used	10	33.3
	Limited User	13	43.3
	Frequent User	5	16.6
	Confident User	2	6.6
How do you think of other teachers' familiarity with ICT?	Never Used	11	36.6
	Limited User	14	46.6
	Frequent User	3	10.0
	Confident User	2	6.6

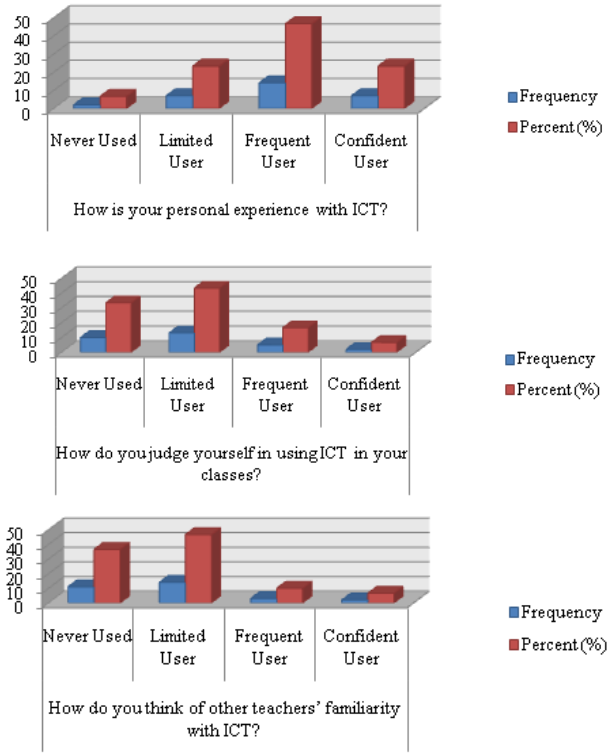

Fig. 1: Teachers' familiarity with ICT.

The EEU Washback Effect on Using ICT:

When the respondents were asked about the EEU washback effect on using ICT in the classroom, all the items got the mean scores below three, indicating the teachers' negative attitude towards all the 11 items of this part (see Table 3 and Figure 2). The item 'My own personal perceptions of the EEU affect my use of ICT in English teaching' got the highest mean score, 2.90. More than one-third of the surveyed teachers (36.6 %) believed that their personal perceptions of the EEU affect the way they use ICT in English teaching. Moreover, almost all the respondents i.e. 93.3 % indicated that the EEU discourages them to use ICT in English teaching. Exactly 90 % of the teachers disagreed with the items "Parents' expectations of their children to perform well in the EEU inspire me to use ICT in English teaching" and "The supplementary materials designed for helping the

students to pass the EEU encourage me to use ICT in English teaching" (see Table 4). The sampled teachers' beliefs about these items represent their attitudes towards the negative washback effect of the EEU on using ICT in the classroom. In general, the high-stakes EEU acts as a barrier preventing the teachers to integrate ICT into the curriculum. The EEU explicitly directs the teachers to teach to the content and format of the test and make them ignore using ICT applications in teaching and learning.

Table 3: Teachers' perceptions of the EEU washback effect on using ICT

Statements	Mean
My own personal perceptions of the EEU affect my use of ICT in English teaching.	2.90
The importance of the EEU motivates me to use ICT in English teaching.	1.96
The students' perceptions of the EEU inspire me to use ICT in English teaching.	1.96
The parents' perceptions of the EEU motivate me to use ICT in English teaching.	1.90
The principals' perceptions of the EEU encourage me to use ICT in English teaching.	1.86
The textbooks designed for the students to study for the EEU encourage me to use ICT in English teaching.	1.66
Parents' expectations of their children to perform well in the EEU inspire me to use ICT in English teaching.	1.60
The EEU content inspires me to use ICT in English teaching.	1.60
The supplementary materials designed for helping the students to pass the EEU encourage me to use ICT in English teaching.	1.56
The EEU format encourages me to use ICT in English teaching.	1.56
The EEU encourages me to use ICT in English teaching.	1.53

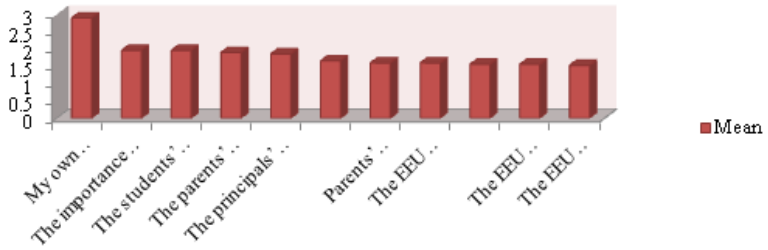

Fig. 2: EEU washback effect on using ICT according to the mean score.

Table 4: Teachers' perceptions of the EEU washback effect on using ICT.

Statements	Strongly disagree and disagree		Undecided		Agree and strongly agree	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
The EEU encourages me to use ICT in English teaching.	28	93.3	1	3.3	1	3.3
My own personal perceptions of the EEU affect my use of ICT in English teaching.	14	46.6	5	16.6	11	36.6
The EEU content inspires me to use ICT in English teaching.	26	86.6	2	6.6	2	6.6
The EEU format encourages me to use ICT in English teaching.	25	83.3	4	13.3	1	3.3
The importance of the EEU motivates me to use ICT in English teaching.	24	80.0	3	10.0	3	10.0
The students' perceptions of the EEU inspire me to use ICT in English teaching.	22	73.3	4	13.3	4	13.3
The parents' perceptions of the EEU motivate me to use ICT in English teaching.	25	83.3	3	10.0	2	6.6
Parents' expectations of their children to perform well in the EEU inspire me to use ICT in English teaching.	27	90.0	2	6.6	1	3.3
The principals' perceptions of the EEU encourage me to use ICT in English teaching.	24	80.0	4	13.3	2	6.6
The textbooks designed for the students to study for the EEU encourage me to use ICT in English teaching.	26	86.6	3	10.0	1	3.3
The supplementary materials designed for helping the students to pass the EEU encourage me to use ICT in English teaching.	27	90.0	2	6.6	1	3.3

Factors Encouraging Teachers to use ICT:

This section aimed to investigate the teachers' perceptions of the factors that encourage them to use ICT in the classroom. Table 5 and Figure 3 show the most encouraging factors according to the mean scores. Table 6 also shows the frequencies and percentages for each factor. As it can be seen in Table 2, all the items got the mean scores above 3.85, indicating the teachers' positive perceptions of the list of eight factors encouraging teachers to use ICT in the classroom. Teachers believed that various ways to integrate ICT into the curriculum, evidence of the positive impact of ICT on teaching and learning, and ability to use ICT for sharing information and ideas with others are the most important factors motivating them to integrate ICT into the curriculum. In addition, as Table 3 shows, the majority of the respondents stated that using ICT improves their teaching skills and even positive educational views about ICT urge them to employ educational technologies inside the classroom.

Table 5: Factors encouraging teachers to use ICT .

Statements	Mean
Various ways to integrate ICT into the curriculum inspire me to use ICT.	4.56
Evidence of the positive impact of ICT on teaching and learning encourages me to use ICT in class.	4.30
Ability to use ICT for sharing information and ideas with others inspire me to use ICT.	4.30
Using ICT improves my teaching skills so that it inspires me to use ICT.	4.16
Positive educational views about ICT urge me to use ICT.	4.13
ICT motivating factors for the students encourage me to use ICT.	4.00
My own personal views about ICT urge me to use ICT in the classroom.	3.96
Better management of the classes with ICT encourages me to use ICT.	3.86

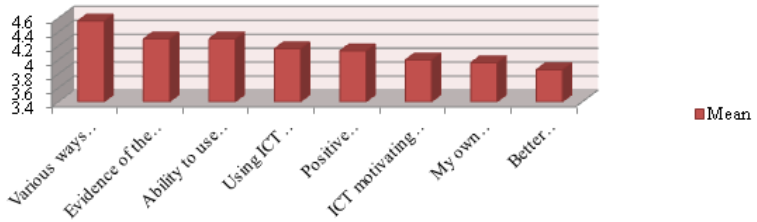

Fig. 3: Factors encouraging teachers to use ICT according to the mean scores.

Table 6: Factors encouraging teachers to use ICT.

Statements	Strongly disagree and disagree		Undecided		Agree and strongly agree	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Evidence of the positive impact of ICT on teaching and learning encourages me to use ICT in class.	1	3.3	2	6.6	27	90.0
Various ways to integrate ICT into the curriculum inspire me to use ICT.	0	0.0	2	6.6	28	93.3
Positive educational views about ICT urge me to use ICT.	1	3.3	5	16.6	24	80.0
My own personal views about ICT urge me to use ICT in the classroom.	2	6.6	6	20.0	22	73.3
ICT motivating factors for the students encourage me to use ICT.	2	6.6	5	16.6	23	76.6
Ability to use ICT for sharing information and ideas with others inspire me to use ICT.	1	3.3	1	3.3	28	93.3
Using ICT improves my teaching skills so that it inspires me to use ICT.	0	0.0	4	13.3	26	86.6
Better management of the classes with ICT encourages me to use ICT.	2	6.6	7	23.3	21	70.0

Factors Discouraging Teachers to use ICT:

This part aimed to explore the teachers' perceptions of a list of 8 factors that discourage them to use ICT in the classroom. Table 7 and Figure 4 show the most discouraging factors according to the mean scores. As it can be seen, just three items got the mean scores equal to or above 3.50, indicating the teachers' attitude towards these three items as the most discouraging factors that prevent them to use ICT in teaching activities. Teachers believed that insufficient technical supports at schools and little access to Internet and ICT prevent them to use ICT in the classroom. Shortage of class time was another important discouraging factor for the teachers to

integrate ICT into the curriculum. Moreover, the item "Time needed to learn using ICT prevents me to use ICT" received 40 percent of the teachers' agreement.

However, more than two-thirds of the respondents believed that their colleagues' negative attitudes and school views about ICT do not influence their perceptions of using ICT in the classroom (see Table 8). More than half of the surveyed teachers (56.6 %) also stated that society views about ICT and requirements of qualifications do not hinder them to use ICT applications in the classroom. In general, other people's opinions regarding ICT do not influence the teachers' perceptions of using ICT applications in the classroom.

Table 7: Factors discouraging teachers to use ICT.

Statements	Mean
Few ICT technical supports at schools discourage me to use ICT in classroom.	4.33
Little access to ICT prevents me to use ICT.	4.23
Shortage of class time hinders me to use ICT.	3.50
Time needed to learn using ICT prevents me to use ICT.	2.93
Requirements of qualifications discourage me to use ICT.	2.60
Society views about ICT hinder me to use ICT.	2.50
School views about ICT discourage me to use ICT.	2.30
Colleagues' negative views about ICT hinder me to use ICT in the class.	2.20

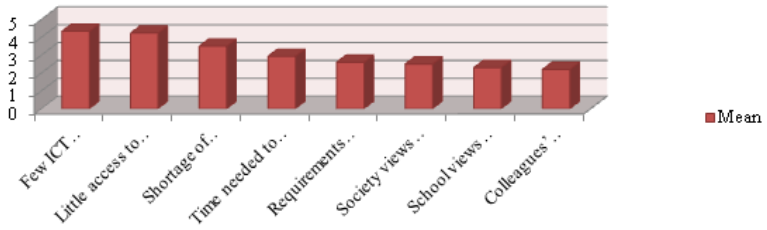

Fig. 4: Factors discouraging teachers to use ICT according to the mean scores.

Table 8: Factors discouraging teachers to use ICT.

Statements	Strongly disagree and disagree		Undecided		Agree and strongly agree	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Shortage of class time hinders me to use ICT.	8	26.6	3	10.0	19	63.3
Little access to ICT prevents me to use ICT.	2	6.6	4	13.3	24	80.0
Few ICT technical supports at schools discourage me to use ICT in classroom.	1	3.3	2	6.6	27	90.0
Society views about ICT hinder me to use ICT.	17	56.6	5	16.6	8	26.6
Colleagues' negative views about ICT hinder me to use ICT in the class.	22	73.3	5	16.6	3	10.0
School views about ICT discourage me to use ICT.	20	66.6	3	10.0	7	23.3
Time needed to learn using ICT prevents me to use ICT.	14	46.6	4	13.3	12	40.0
Requirements of qualifications discourage me to use ICT.	17	56.6	3	10.0	10	333

Conclusion:

There is no doubt that by integrating ICT into the curriculum, a fundamental shift will be made in the way teachers teach and the way students learn. This paper aimed at investigating the EEU washback effect on using ICT in English classes and examining the high school English teachers' perceptions of the factors motivating or preventing teachers to integrate ICT into the curriculum. The findings of the study showed that the negative washback effect of the high-stakes EEU can explicitly be seen in the teachers' beliefs about this competitive test. The low mean of the items showed that the majority of the teachers believe that the EEU discourages them to implement ICT applications in teaching. The content and format of the EEU direct the teachers towards using skills which help the students pass this nationwide test. In fact, the EEU acts as a barrier preventing the teachers to integrate ICT into the curriculum.

The surveyed teachers stated that various ways to integrate ICT into the curriculum and the ability to use ICT for sharing information and ideas with others motivate them to use ICT in the classroom. The evidence of the positive impact of ICT on teaching and learning was another important factor inspiring teachers to integrate

ICT into the curriculum. Moreover, the majority of the surveyed teachers believed that using ICT improves their teaching skills and even positive educational views about ICT encourage them to use new information and communication technologies inside the educational settings. On the other hand, insufficient technical supports at schools and little access to Internet and ICT prevent teachers to use ICT in the classroom. Shortage of class time and time needed to learn using ICT were reported as two other discouraging factors for teachers to integrate ICT into the curriculum.

In general, assessments should be employed as a medium to measure students' achievements and show them what they have learned and what they still need to learn. The assessments should also be used to improve instruction and inform teachers about the process of teaching and learning. Therefore, the information obtained from a range of assessments can help teachers diagnose students' difficulties and strengths and modify instruction so most of the students can improve their learning process. In fact, a range of assessments should be considered for the students' high-stakes decisions such as the admission into tertiary education.

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