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A Triangulated Study on the Impact of Digitally-Based Exams on Iranian EFL Teachers' Development and Job Satisfaction

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Abstract

Innovative testing techniques are of great importance in modern classrooms. The institute under study created an innovative achievement test compatible with its blended learning program, otherwise known as digitally-based exams. It was seen that the main benefit of these exams was its environmentally-friendly nature, which led to a decrease in wasted paper. The teachers' perceptions on this type of exam also showed that teachers who used digitally-based exams generally had more positive ideas. The current study sought to understand whether digitally-based exams had a significant effect on teachers' self-development and job satisfaction. 60 teachers were employed to participate in this study, 30 of whom used the digitally-based exams and 30 who used the traditional paper-and-pencil exams. Kassabgy, Boraie, and Schmidt's (2001) job satisfaction questionnaire which held 28 items was used to estimate the teacher's levels of job satisfaction and was distributed among all of the participants. The questionnaire results of the two groups of teachers were compared to see whether the use of digitally-based exams had a significant impact on job satisfaction or not. Then, 15 of the teachers who used the digitally-based exams were randomly selected to participate in semi-constructed interviews which lasted about ten minutes and were asked two questions to analyze their ideas on their own development. The interviews were recorded and transcribed, key words were extracted, and the results were examined. This study was carried out as the first phase of a study aiming to design an assessment-method satisfaction scale.

Keywords: *Digitally-Based Exams, Paper-and-Pencil Exams, Teacher Development, Job Satisfaction*

Introduction

Teachers are among the most important individuals in modern societies and are the key factors in education. Their roles are continuously changing (Urzúa & Vásquez, 2008) and they have gone from being the most powerful source of authority in the classroom to being a facilitator who helps students learn (Webb, 2005). Thus, it can be said that teachers are not rigid and inflexible. On the other hand, they are changeable and develop over time, considering their academic background, research matters, and experience.

Participation in training courses and observations of actual classes results in the changes of teachers' views toward teaching and the entire profession. Many student teachers decided that teaching is not suitable for them (Webb, 2005) which can be due to the fact that their ideas on teaching and being a teacher develop into a series of experiences in practical teaching. In other words, what was previously an abstract idea on teaching turned into practical knowledge and experience and the student teachers now have a clear mindset of what being a teacher really means.

As a result, experienced teachers significantly differ from novice teachers considering the fact that their experiences have led to several changes in their mindset and classroom behaviors. These changes that teachers experience in their self-development is not always positive though. Occurrences such as burn-out and job change are common in the teaching profession. Some teachers cannot tolerate the pressure put on them by institutes and students anymore and decided to change their profession.

In order to avoid such side-effects in the teaching profession, institutes and educational centers tend to take measures to improve the teaching environment and provide teachers with incentives to continue their job in the best possible way. One of the most important factors that leads to a more positive work place is job satisfaction. Job satisfaction can be defined as “one’s judgment of the negative or positive stance of their working environment. It is how one perceives their working environment and what they consider the positive or negative points of that job” (Weiss, 2002, p. 21).

Being one of the most important parts of all classes and courses, the impact of assessment on teachers is inevitable. That is, the assessment and evaluation of students and the way students and teachers react to it are vital elements in a classroom. Assessment is normally defined as “any method, tool, or strategy that teachers use to elicit evidence of students progress towards previously stated goals” (Chen, 2003, p. 26). There are different types of assessment such as placement, proficiency, diagnostic, and achievement exams (Biggs, 1999) which serve multiple purposes including, among many others, placing students in a specific level, determining if the test-taker has a specific amount of knowledge in a certain area, or checking to see whether a student has learnt the subject matter or not.

The institute under study had recently designed a series of digitally-based exams to decrease the amount of paper wasted every year. These exams were based on the previously implemented traditional exams but were presented to the students on television screens (Kianoosh & Soltani,

2018a). The impact that this type of exam had on the students and the teachers' perceptions towards it were examined by Kianoosh and Soltani (2018b). However, considering the fact that assessment has the ability to affect teachers and lead to their development (Brown, 2004), the current study was an attempt to understand if digitally-based exams had a significant effect on teachers' self-development and job satisfaction or not.

Assessment and Teachers

Consistent assessment and testing are not only needed for evaluating students, but also for understanding them and making sure of the progress they are making. Hence, it is important to not only examine teachers' and test makers' ideas on the test, but also the students' themselves. Studies in several different fields including second language acquisition (SLA), psychology, psycholinguistics, and psychometrics have greatly helped researchers understand ESL students' different beliefs and perspectives on language assessment and testing. Many believe tests to be anxiety-provoking and nerve-wracking.

The past few decades have seen several types of innovative and contemporary tests. Task-based, communicative, online, group, project-based, and computer assisted tests are all new forms of testing and assessment (Brown, 2004). Hence, recent studies have sought to examine the significance of these types of tests in different areas in teaching.

However, one factor that has been relevantly ignored in these studies is how these different types of exams impact the teachers. That is, as assessment and evaluation is said to have effects on not only the students but also the teachers, the researchers ought to examine the direct effects that these two types of exams, namely digitally-based and paper-and-pencil tests, have on the teachers.

Previously, many of the teachers had personal complaints in relation to the exams. They often complained of how long it took to correct the papers and how they had to stay in the institute for a longer period of time to correct all their papers. They also complained of the high number of papers they had which were detrimental for the ecosystem and natural environment. They also stated that since paper correction took so long, they did not have enough time left to give constructive feedback to the students (Kianoosh & Soltani, 2018a). Thus, the digitally-based exams were designed based on the teachers' and students' complaints. Furthermore, teachers' perceptions toward this type of exam seemed to be positive (Kianoosh & Soltani, 2018a).

Method

In relation to the instruments used in the current study, Kassabgy, Boraie, and Schmidt's (2001) job satisfaction questionnaire, Touchstone and Viewpoint textbooks, Oxford Word Skills, online learning materials, semi-structured interviews, paper-and-pencil exams, digitally-based exams, and a researcher-designed questionnaire were used, which are all explained in detail as follows.

Kassabgy, Boraie, and Schmidt's (2001) Job Satisfaction Questionnaire

In this study, to measure the amount of teachers' job satisfaction, a questionnaire was used. To be more precise, the questionnaire was designed by Kassabgy, Boraie, and Schmidt (2001) and its validity and reliability has been analyzed by Dornyei (2003), Radai (2003), Nakata (2006), and Ng and Boucher-Yip (2014), as well as several others. It consisted of 28 items, 14 of which are related to the teachers' expectations and 14 of which the teachers experience in their working life. Therefore, it can be said that this questionnaire has two sub-scales: satisfied and unsatisfied teachers. This questionnaire also had a sub-section related to the teachers' biodata so that personal, academic, and career-related data can be gathered.

Touchstone Textbooks

Written by Michael McCarthy, Jeanne McCarten, and Helen Sandiford, this series is comprised of four books in total including books at the elementary, pre-intermediate, intermediate and upper-intermediate levels, or in other words, levels A1 to B2. Based on standard American English, each book, which consists of 12 units, is adapted to meet the needs of the language learners of that specific level. Each unit has four lessons which encompass listening, reading, writing, speaking, grammar, pronunciation, and vocabulary, as well as a vocabulary notebook which reviews the words taught in each unit. At the end of every three units, there is a review page to help the students work on what they learned. At the end of each book, there are three extra sections called Free Talk (which gives ideas for free discussion in the classroom), Sounds Right (which gives extra tasks based on pronunciation), and Extra Practice (which gives extra activities based on the grammar).

Each book includes a workbook, which consists of 12 units and provides extra practice for what is worked on in the textbook. Moreover, online material is available for the workbook. There are also MP3 CDs, which include all the audio tracks needed to complete the listening activities in the book. There are Teacher's Guides, which include answers to the tasks, teaching tips, useful notes, as well as language summaries and the answers to the workbook questions. The students at the language school understudy had to work on three units per course.

Viewpoint Textbooks

The Viewpoint textbooks are the continuum of the Touchstone textbooks, although on an advanced level. These books were written by Michael McCarthy, Jeanne McCarten, and Helen Sandiford, and include two books, high intermediate (B2) and advanced (C1). Based on standard American English, each book consists of 12 units, each have covering lessons, including listening, reading, writing, speaking, grammar, pronunciation, and vocabulary. Furthermore, at the end of every three units, there is a review page to help the students work on what they learned during the course of each unit. At the end of each book, there are two extra sections called Speaking Naturally (which gives extra tasks based on pronunciation), and Grammar Extra

(which gives extra tasks based on grammar as well as language commentaries on more advanced forms of the taught grammar).

Each book includes a workbook, which consists of 12 units and provides extra practice for what is worked on in the class. Moreover, online material is available for the workbook. There is also an MP3 CD, which includes all the audio tracks needed to complete the listening activities in the book as well as a Teacher's Guide, including answers to the tasks, teaching tips, useful notes, as well as a language summary and the answers to the workbook questions. The students at the language school had to work on two units per course.

Oxford Word Skills

Four of the books in this series were used in the classes. Oxford Word Skills: Basic (used for the elementary and pre-intermediate levels, Oxford Word Skills: Intermediate (used for the low intermediate and intermediate levels), Oxford Word Skills Idioms and Phrasal Verbs: Intermediate (used for the lower advanced levels), and Oxford Word Skills: Advanced (used for the advanced levels) were utilized in the classes as extra material to work on vocabulary and word usage. These books were written by Ruth Gairns and Stuart Redman and are based on British English. All of the books consisted of 80 units, save for Oxford Word Skills Idioms and Phrasal Verbs, which has 60 units. Each unit works on about 10 to 40 words or phrases, followed by relevant tasks used to practice them in context. The words in this book are classified by topics. During each course, six units were taught, which were relevant to the topics in the language learners' textbooks. Each book has an interactive CD used to activate the words as well as a booklet at the end of the book with the answers to the tasks.

Online Materials

As flipped classrooms were used in the institutes' educational syllabus, traditional classroom based activities were accompanied by online based tasks and activities. To facilitate students' understanding of what was taught in the classroom, online quizzes were provided which were supplemented with immediate online correction and feedback that provided the learners with grammatical rules and definitions. Crossword puzzles were designed and employed to test the students' vocabulary knowledge, also providing them with scores and feedback. Online footage as well as video activity books were also available for students who wanted to view videos and pictures in order to see language in real-life use. They had tasks to execute prior to and after viewing the pictures or videos in order to test their understanding and comprehension based tasks were also available. An online forum was also accessible for the students through which they could communicate with other students and classmates by leaving comments and ideas. In order to retrieve extra materials in relation to the grammar and vocabulary taught in class, an online workbook was also created to provide extra types of tasks.

Paper-and-Pencil Achievement Tests

The paper-and-pencil tests developed and finalized in the current study were designed by the testing department. They were checked, proofread, and criticized by all members of the testing department of the institute as well as several selected teachers. They were piloted on a small scale to check their validity and reliability, and then they were published in high numbers to be sent to the branches. Two groups of tests were used throughout each level: midterms and finals (the advanced levels had final tests only). The midterms consisted of different sections related to grammar, vocabulary, Oxford Word Skills, and writing and were scored from a total of 20 points. The finals consisted of sections related to listening, grammar, vocabulary, Oxford Word Skills, reading, and writing and were scored from a total of 40 points, save for the advanced levels which were scored out of 60 points. The students had to write the answers in answer columns provided on the right-hand side of the pages in the test. Furthermore, the final page of each test had about one to two pages of space for the writing section. The students wrote their answers on the answer sheet, which was a double sided page with three columns on one side for the answers to the questions and the writing topic as well as writing space on the other side. Answer keys were designed for each test and all possible answers were included.

Digitally-Based Achievement Tests

The paperless tests developed and finalized in the current study were designed by the testing department and utilized via memory sticks. They were initially taken from paper-and-pencil based tests previously used in the institute and modified to fit the institute's, as well as the students' needs and purposes using PowerPoint which were then converted to pictures (in JPEG format) and consequently MP4s using *ProShow*. There were two groups of tests: midterms and finals. The midterms covered all of the levels, save the advanced ones, and consisted of different sections related to grammar, vocabulary, Oxford Word Skills, and writing and were scored from a total of 20 points. However, the first two courses (lower elementary) did not consist of a section related to Oxford Word Skills and the advanced levels did not have a midterm test.

The finals consisted of sections related to listening, grammar, vocabulary, Oxford Word Skills, reading, and writing and were scored from a total of 40 points, save for the advanced levels which were scored out of 60 points. Each slide had a specific timing on the television and could be seen up to three times, save for the listening section which was seen once at the beginning of the test and the writing section whose topic was also made available on the answer sheet. The students wrote their answers on the answer sheet, which was a double sided page with three columns on one side for the answers to the questions and the writing topic, as well as writing space on the other side. Answer keys with a structure similar to that of the answer sheets were also designed and provided to the learners.

Researcher-Designed Interviews

The researchers sought to understand the ideas teachers who used digitally-based exams had on their professional development. Thus, the following three questions were designed and asked of 15 of the teachers:

1. What are some of the benefits you have reaped from these digitally-based exams?
2. How has the assessment process, which is one of the most important parts of teaching, been facilitated for you?
3. How do you feel now as a teacher? Have your ideas on teaching and the assessment process changed?

Each interview lasted about seven minutes and all of the teachers were informed that their voices will be recorded but they would remain anonymous and the results would not have any impact on them. These interviews were transcribed and key words were extracted.

Results

This study was quasi-experimental in nature and was mixed method as it had both qualitative and quantitative findings. The results of this study can be seen below.

Quantitative Findings

In order to have a clearer understanding of who took part in the current study, their demographic background was analyzed. Their gender, academic degree, working situation, and major were examined and the results can be seen in Table 1.

Table 1
Demographic Information of the Participants

		Frequency	Percent
Gender	Female	56	93.3
	Male	4	6.7
	Total	60	100.0
Degree	Associate's	1	1.7
	Bachelor'	46	76.7
	Master'	13	21.7
	Total	60	100.0
Working Situation	Employed Full-Time in One Educational Organization	23	38.3
	Employed Full-Time in Two or More Educational Organizations	2	3.3
	Employed Part-Time in One Educational Organization	32	53.3
	Employed Full-Time in One Educational Organization Plus Part-Time at One or More Educational Organizations	3	5.0
	Total	60	100.0
Major	Literature	9	15.0
	Other	23	38.3
	TEFL	13	21.7
	Translation	15	25.0
	Total	60	100.0

According to Table 1, 56 (93.3%) of the participants were females while 4 (6.7%) were males. In relation to their academic degree, 1 (1.7%) of them held an associate's degree, 46 (76.7%) of them held a bachelor's degree, and 13 (21.7%) of them held a master's degree. In relation to their working situation, 23 (38.3%) of them were employed full-time in one educational organization, 2 (3.3%) of them were employed full-time in two or more educational organizations, 32 (53.3%) of them were employed part-time in one educational organization, and 3 (5%) were employed full-time in one educational organization plus part-time at one or more educational organizations. In relation to the participants' academic major, 9 (15%) had studied literature, 13 (21.7%) had studied TEFL, 15 (25%) had studied translation studies, and 23 (38.3%) had studied other Persian language majors. Furthermore, the participants' age and experience were also analyzed and the results can be seen in Table 2.

Table 2

Descriptive Statistics of the Participants' Age and Experience

	N	Range	Minimum	Maximum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
Age	60	22.00	18.00	40.00	27.76	.72	5.61	31.53
Experience	60	19.00	1.00	20.00	5.81	.70	5.49	30.15

Table 2 shows that the participants' age ranged from 18 to 40 ($M = 27.76$, $SD = 31.53$). Moreover, the participants' experience in number of years ranged from 1 to 20 years ($M = 5.81$, $SD = 5.49$). In order to study the reliability of the job satisfaction scale used in the current study, Cronbach's Alpha analysis was used. Cronbach's Alpha was checked for the entire scale and the results show that the scale was highly reliable ($\alpha = .91$) for the 28 items in the scale. In order to further analyze this scale, Cronbach's Alpha was used to see if any of the items should be omitted and it was seen that all of the items have high reliability and if any of the items were to be omitted, the Cronbach's Alpha would remain higher than .91. Thus, all of the items were retained and the inferential statistics were analyzed.

The aim of the current study was to see whether digitally-based exams had a statistically significant impact on teachers' job satisfaction or not. Thus, independent samples t test was used to analyze the questionnaire findings of the teachers who used digitally-based exams and those who used traditional paper-and-pencil exams. The results can be seen in Table 3.

Table 3

Independent Samples Test

		Levene's Test for Equality of Variances				t-test for Equality of Means					
		F	Sig.	t	df	Sig.	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
								Lower	Upper		
Total	Equal variances assumed	5.25	.02	3.10	54	.00	7.25	2.33	2.57	11.94	
	Equal variances not assumed			3.22	46.69	.00	7.25	2.24	2.73	11.78	

As Table 5 shows, there was a significant difference in the questionnaire results for the group of teachers who used the digitally based exams ($M=2.56$, $SD=10.55$) and the group of teachers who used the traditional paper-and-pencil exams ($M=-4.69$, $SD=5.91$) conditions; $t(54)=3.10$, $p=.20$. These results suggest that teachers who used the digitally based exams had a significantly higher level of job satisfaction compared to those who used the traditional paper- and-pencil exams.

Qualitative Findings

In order to further investigate what the teachers' ideas on their self-development were, the researchers carried out semi-constructed interviews with 15 of the participants who used the digitally-based exams. These interviews consisted of three questions and the findings of these interviews can be seen in Table 4.

Table 4

Interview Results

1. What are some of the benefits you have reaped from these digitally-based exams?

This exam helps the teachers understand what students learnt and plan their future classes based on the washback effect.

It added character to the exam which helped me further gain information on the importance of suitable assessment and evaluation.

Paperless is easy to correct and follow.

Correction is easier so we have more free time to provide students with feedback and plan for aimful and individual feedback.

The assessment process was simplified and left the teacher with more room for flexibility in controlling the exam.

2. How has the assessment process, which is one of the most important parts of teaching, been facilitated for you?

It provides us [teachers] with timely, actionable student-based data that can be positively effective in reflective teaching.

Teachers can use this data to empower their students.

The information provided by this type of exam can be recorded in digital files for further statistical analyses.

Much less time was spent on exam correction and more time was allotted to other stages of teaching. Providing students with feedback became much easier.

3. How do you feel now as a teacher? Have your ideas on teaching and the assessment process changed?

Every school is unique and this exam makes Safir a model green school.

Flexibility and learner-centeredness is important in these types of exams since students get feedback as individuals.

People should keep up with technology.

Teachers must consider the personality and attitude of the students.

Teachers have better control over the exam so they can monitor the exam process more effectively.

It was seen that the teachers had mostly positive ideas on their self-development as teachers. The majority of the teachers were mostly happy about how much easier exam correction had become for them. This allowed them to spend more time on lesson planning and providing feedback rather than spending hours on end on correcting test papers. They also believed that the data provided them with more precise data on what the students had or had not learnt. They also stated that this exam was unique and flexible which were both positive factors for them.

Conclusion and Discussion

The current study sought to analyze the impact of using digitally-based exams on teachers' self-development and job satisfaction. It was a mixed-method study that consisted of both qualitative and quantitative information and included data from a standardized scale and semi-constructed interviews.

The results of this study showed that job satisfaction was significantly higher in teachers who had used the digitally-based exams in their classes when compared with teachers who used the traditional paper-and-pencil exams. They also showed a positive reaction in relation to their self-development as teachers. This can be due to several reasons. Skaalvik and Skaalvik (2011) had previously determined that an important factor that has an impact on teacher job satisfaction is the evaluation and teaching process. The easier and more logical the evaluation process, the higher the teachers' levels of job satisfaction and vice versa. In the current study, it was also seen that with the facilitation of assessment in the institute under study, job satisfaction increased.

Alzaidi (2008) stated that better work conditions can lead to better living conditions for teachers. Thus, as conditions in the work place improve for teachers and students alike, teachers gain higher levels of job satisfaction. The same can be said for the findings of the current study. It was said by the teachers that the implementation of the digitally-based exams led to less time spent on paper correction and more time on lesson planning. It was also mentioned that they had a clearer idea on what the students had or had not learnt so they understand the true impact their teaching skills had on the students.

Mertler's (1992) study showed that high levels of teacher job satisfaction as a result of better work conditions led to higher student development. Thus, high levels of job satisfaction not only cause higher teacher self-development, they also give rise to better student development.

The current study was an attempt to examine the impact of digitally-based exams on teachers' self-development and job satisfaction. To this end, interviews and a job satisfaction scale were used and the results showed that teachers who used the digitally based exams had a significantly higher level of job satisfaction in comparison with teachers who used traditional paper-and-pencil exams. Teachers who used digitally-based exams also had positive ideas in relation to their self-development. It should be mentioned here that the current study was the first phase in an attempt to design a testing method satisfaction scale.

The results of this study show that not only did the teachers have higher job satisfaction as a result of using a different testing method, they were happy with said method. As the evaluation method was seen to have an impact on teacher job satisfaction, it is possible that it may have an impact on other teacher-related variables. Thus, by creating a testing method satisfaction scale, the researchers seek to understand how different testing methods can have an impact on teachers and administrators.

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