

Wash back Effects of LMS testing on Iranian EFL Learners' Strategies

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Abstract

A mixed-method design was employed in this study to investigate the wash back effects of learning management system testing on Iranian English learners. Furthermore, since wash back might affect female or male participants differently, another part of study concentrated on the differences between male and female in their study methods. Both qualitative and quantitative data were collected through using a questionnaire and an interview. By and large, the participants included 53 students and 20 teachers. The results showed that the English learners were significantly affected by the learning management system testing. That is to say learners changed their studying methods when they were tested based on learning management system. However, there seems to be no significant differences between male and female learners. In addition, Iranian English learners mostly focused on the content of what they study, rather than how they study it.

Key words: Wash back, learning management system, studying methods

1. Introduction

In educational and testing setting different scholars have suggested a number of terms to refer to the notion of “wash back” such as ‘test impact’ (Baker, 1991), ‘consequential validity’ (Messick, 1989, 1996), ‘systemic validity’ (Frederiksen& Collins, 1989), ‘measurement-driven instruction’ (Popham, 1987) or ‘curricular alignment’ (Madaus, 1988; Smith, 1991a)”. The term wash back or backwash refers to the impact of testing on teaching and learning (Hughes, 1989; Alderson & Wall, 1993; Bailey, 1996; Saville, 2000; Cheng & Curtis, 2004). This impact can manifest itself in different parts. For example, it may affect the way students try to learn or their studying methods or it can have some influences on the contents that students study to prepare for a test.

Wash back have been investigated from various perspective. That is why there are different types of wash back. Depending on the test and its intended use, this wash back can be considered potentially negative (harmful), positive (beneficial) or neutral (Bachman & Palmer, 1996; Bailey, 1996). Positive wash back occurs in a situation that a language test leads to useful and meaningful language development. Simply put, the test has positive effects on teaching and learning. However, negative wash back is in action when minimal meaningful language development occurs.

Testing has also been investigated from different perspectives. According to Shohamy (2001) there are two different perspectives regarding the concept of testing: traditional testing and use-oriented testing. Traditional testing brings the objective type of items to the center of attention, and ignores the test use. Traditional testing considers testing as a separate part from test takers, educational system, and society. However, use-oriented testing “addresses issues related to the rationale for giving tests and the effects that tests have on test takers, education and society” (Shohamy, 2001, p. 4).

With great advancement in technology, there have been great changes in educational system. Nowadays students have access to some forms of technology that no generation ever had. One of these technologies is the Internet which itself opens the door to millions of other possibilities. Learning management system is one of the educational related technologies which have changed learning and has the potential to change it more. Learning management system is a software that can help learning by providing various kinds of reports regarding training programs or educational courses. It allows teachers to provide students with materials, for example tests or assignments. It can also help people in charge of learning to track students’ progress. LMS is usually used online which is one of the unique features of this software. Students can access LMS everywhere with ease. LMS can store and manage learning data. As the result, it is not only a software to help students. It can also help teachers and more importantly researcher.

Learning management system has been available for a few years, and there are a number of different words for digital aid or platforms for education, for example computer-based learning environment, or managed learning platforms /systems. However, the learning management system (LMS) is usually used to refer to products that help individual to administer part or all of a course. Right now there are a lot of courses online in universities or other institutes in all around the world which made it possible for individuals who have access to the Internet to take part in the course. This courses usually are cheaper than other regular courses, and usually are taught by very good teachers. Great universities such as Yale University has a lot of free courses. There is the hope that in near future there will be free or affordable education for everybody, and LMS a big is part of this huge project.

2. Purpose of the study

This study aims at investigating the wash back effects of LMS testing on Iranian EFL to provide teachers with a clearer idea of the roles LMS testing can play concerning wash back. In order to address the aforementioned issues, the following research questions arise:

Does LMS testing system have any significant wash back effect on the students' study methods?

Are there any significant differences between men and women regarding LMS wash back?

3. Method

3.1. Setting

Language institutes are quite popular in nowadays competing education. However, there can be vast differences in their approach toward teaching and consequently testing. The language institute which was chosen to carry out the study is located in the north part of the city, Tehran. Classes are usually mixed gender and private or semi-private, and students meet twice a week. There are at most 4 students at semi-private classes and 7 students in public classes. Each session is three hours long, and students are allowed to have a break after the first 90 minutes. Each term is 8 weeks long. And there are written and interview examinations at the end of each term. Beside these examinations, there is optional continuous LMS testing for students. The institute give an online test each week to the students if they are willing to participate, and give students some feedback based on their performance on the test. Although these tests are not obligatory, the final written and interview examinations are obligatory to pass the level.

3.2. Participants

Participants of this study comprise 53 students both male and female in a language institute in the upper part of the city, studying general English.

Their ages range between 20 and 35. They mainly study English for immigration-related purposes. The majority of the students have a university degree. After 8 months they should be competent enough to participate in IELTS 4-5 or B1 classes.

3.3. Instrumentation

A questionnaire and interview will be used to provide in-depth information to help interpret the data. The questionnaire, a five-point Likert scale, which is consisted of two main parts, was used. The first part of the questionnaire will be allocated to demographic information, and the second part will seek for information in 4 different categories. The first category of the second part will bring the content to the center of attention, and it will include six questions about students' concern regarding what they study. The second part, which comprises of five questions, will focus on the students' study methods. This section aims to elucidate the impact of LMS testing on students' study methods. The third section, which will include six items, will be concerned about the students' perceived importance of final exams. The last section comprises of four questions aim to focus on students' attitude towards LMS testing and their grades. The items on the students' questionnaire were designed on a five-point Likert scale, where five = strongly (totally) agree, four = agree, three = no comment (no idea), two = disagree and one = strongly (totally) disagree (Appendix A).

The questionnaire was developed by Hemmati and Soltanpour (2014) who primarily used three different sources: Alderson and Hamp-Lyons (1996), Alderson and Wall (1993), Andrews (1994), Wall and Alderson (1996). Both confirmatory and exploratory factor analyses were conducted. The KMO (Kaiser-Meyer-Olkin) index (0.81) indicated that each factor predicted enough items. To assess the reliability of scale, Cronbach's alpha was computed and showed an acceptable reliability of 0.75.

3.4 Procedure

Questionnaire

Originally, 60 questionnaires were distributed; the return rate was 88% (53 out of the total 60). In addition, a total of 20 learners participated in the interview. The questionnaires were distributed among different English classes. There also was an assistant in case any participant had difficulty understanding the questionnaire, and the interview was conducted in Tehran. The questionnaire was the main part of the data collection in this study. However, to achieve more accurate results and cross validate the results provided by the questionnaire, an interview consisting of eight questions was considered as the second instrument.

The questionnaire, a five-point Likert scale was issued in English and distributed among English learners. There was also an assistant present to help the participants if they had any difficulty understanding the meaning or

purpose of the questions. In the first part of the questionnaire demographic information was asked. The other part of the questionnaire, including four main categories, focused on content, study methods, perceived importance of the tests, and students' attitude toward testing. There are six questions in the first part, which focused on the content, and concentrated on what the students study. The second category which had five questions concentrated on students' studying methods. This section was to investigate whether learning management system testing influence learners' studying methods. The third section, which included six questions, had the concern of perceived importance of LMS testing. The last section, which was consisted of four questions, brought the students' attitude toward LMS testing to attention. The items on the questionnaire are of five-point Likert scale in which five stands for strongly or totally agree, four stand for agree, three stands for no comment or no idea, two for disagree, and one for strongly or totally disagree as it is explained in Appendix A.

The questionnaire was basically derived from two sources. First of which is from relevant studies such as Alderson and Hamp-Lyons (1996), Alderson and Wall (1993), Andrews (1994), Wall and Alderson (1996). The second source was the information elicited from students. The questionnaire was used in a study by Hemmati and Soltanipour (2014). "The questionnaire was piloted, and both confirmatory and exploratory factor analyses were conducted. The KMO (Kaiser-Meyer -Olkin) index (0.81) showed that each factor predicted enough items. To assess whether the developed scale was reliable, Cronbach's alpha was computed and showed an acceptable reliability of 0.75." (Hemmati & Soltanipour, 2014, p. 20).

Interviews

A mixed-method design was employed in this study; that is, we took advantage of both qualitative and quantitative date. Therefore, 20 English learners who participated in the first part of the study provided the required date in the interviews. Based on the questionnaire, which had been designed to elicit quantitative date, the interview consisted of eight open-ended questions. Participants voluntarily took part in the interviews, and the interviews were carried out individually. Most of the interviews were face-to-face in language institutes. However, some of them were carried out online. During the interviews the researcher attempted to create an atmosphere of trust and positivity to elicit reliable date, and the interviews were conducted in the students' native language. All recording was transcribed and coded to provide a better understanding of the wash back effects.

A total of 53 students participated in the study. The questionnaire was distributed in different classes (and institutes), and students were asked to complete the questionnaire in their regular class time. Study's purpose was explained to the students. Students will be informed that there will be no

correct or incorrect answers. In addition, it will be pointed out that students' participation is voluntary and their information and answers will be confidential. The researcher or a researcher assistant will help to solve any problems students might have regarding understanding or purpose of the questions. On completion, the questionnaire will be collected.

3.5 Data Analysis

The influence of LMS testing on students' study methods

The frequency, percentage, means and standard deviation (SD) of the data was calculated for all the items and the main domains. The t test was used to investigate the significance of the results.

4.1 Results

The results of descriptive data indicated that LMS testing influence students' study methods. That is in this method of testing students change their usual practices in learning English, and they deploy specific methods to cope with LMS testing. The details of the analysis are as follows.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	295	27.11	27.11	27.11
Agree	425	39.06	39.06	66.17
No comment	312	28.67	28.67	94.84
Disagree	37	3.40	3.40	98.24
Strongly Disagree	19	1.74	1.74	100
total	1088	100	100	

Table 1Group Statistics

group	N	Mean	Std. Deviation	Std. Error Mean
test	Experimental	26	78.3846	13.36286
	control	26	51.0769	10.17418
				2.62067
				1.99532

Table 2 Independent Samples Test between Experimental and Control Group

	Levene's Test for Equality of Variances		df	t	P	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
	F	P						Lower	Upper
test	1.224	.274	50	8.291	.000	27.307	3.293	20.691	33.923

According to the results shown in the table 1 and 2 and $t = 8.291$, $p = .000 < 0.05$, a statistically significant difference between two groups were detected. The experimental group scored higher than the control group.

Table 3 Group Statistics

sex	N	Mean	Std. Deviation	Std. Error Mean
test	male	25	67.6400	12.49960
	female	27	62.0370	22.00434

Table 4 Independent Samples Test between Teacher's feedback and Control Group

	Levene's Test for Equality of Variances		df	t	P	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
	F	P						Lower	Upper
test	16.731	.000	50	1.139	.269	5.602	4.917	-4.322	15.528

According to table 3 and 4, and $t = 1.139$, $p = .269 > 0.05$, it is understandable that there is no significant difference between male and female participants.

Qualitative Data Analysis

The interview consisted of eight questions. Seven of which were based on a priori category procedures; that is, they were previously set and designed based on four themes. (1) the importance of LMS testing to students, (2) the influence of LMS testing on what the students study (content), (3) the influence on the students studying method (method), and (4) the students' attitude towards LMS testing. Furthermore, at the end of the interview the students were asked to add whatever they felt could be considered

important. Taking all the details that students said was not easy. In some cases, the interviewee also discussed other points which seemed relevant to the topic. The researcher tried to include as much as possible in the study to reach coherent and reliable results.

The researcher started the interview by the question "How important do you consider LMS testing?" Nearly all the students considered LMS testing important. Some argued that the scores can indicate how much they have learnt. However, some believed that it is of utmost value to achieve a high a score, but a high score solely is not a good indication of learning. In addition, because of the nature of the LMS testing, it should be quite easy. It is understandable that students can never achieve good scores if a very difficult test is administered every week, or students can get demotivated or they may quit. Therefore, quite easy tests were administered which some students considered incomparable with IELTS questions. That is why some students asserted they want to learn and also get high scores in LMS. Achieving high score is the first level of learning which is necessary, but it is not enough. In addition, they had to take LMS tests because of the institute policy. If they do not take the LMS tests, it becomes very difficult for them to pass the final exam and go to the next course.

The next question, that is the second question, was: Do you want to sacrifice important curricular content for your LMS scores that you get? The answer to this question was "No". Because students believed learning is the single most important part of education. However, they considered high scores as the indication of learning, and they did not want to receive a low score. They put the primary importance on learning, and considered high scores as the indication of learning. In addition, they considered LMS questions quite easy, and even if they received the full score they did not believe that the score is a valid indication of their ability. The other reason that might discouraged them was that some of the students could almost receive full score in LMS, but when they participated in IELTS mock test they were not able to shoot a band near their LMS equivalent. Of course it was an incomparable situation. One cannot simply compare the scores of two tests based on relative achievement. LMS and IELTS are of different nature in the institute that the study was done. By and large, students tend to feel that higher scores meant better result.

The question number 3 was:

Which parts of text book seem more important to you, the parts that help you learn more or the parts that help you get higher scores? English learners usually try to improve their English irrespective of their score in the class because TOEFL or IELTS exams are highly reliable and they are aware of it. As the result, they argued that it is important to them to get higher goals, but they put the priority on content. In other words, they consider learning their first priority, and at the same time they try to get higher scores.

The fourth question was: Do you think LMS testing has changed your studying methods? If so to what extend? They answered this question positively. Learners agreed that LMS testing has put a responsibility on them, and they somehow tried to fulfill this responsibility by taking actions and using specific methods that they did need to acquire an acceptable score. Language learners who took part in LMS, studied more frequently in comparison with themselves when they had not joined the LMS testing program.

The fifth question was about teacher driven evaluation. The learners were asked whether they change their approach towards studying if their teacher was in the charge of final exams. That is “Would you change your study methods if your teacher was to construct your tests?” the students mostly answered “yes”. That might be due to the fact that English learners to some extent believe that teachers highlight the important parts, as other teachers did in Iranian educational system, and to get high scores they have to study those specific areas. Another reason is that learners almost never want to be in a situation in which the teacher or other individuals may develop a negative attitude towards them. As the result, if the teacher was responsible for constructing the test, they would study differently.

The sixth question took strategies into consideration. This question was “Which is more important learning strategies or test taking strategies?” Mostly students answered both because from one hand they really wanted to become part of an English speaking community, and to do so they need to have the knowledge to speak. Furthermore, test taking strategies in real life are of little value to speakers of a particular language. On the other hand, they really were in the need of test taking strategies because they were going to take IELTS mock exam and real exam in at most 8 months. That is why test taking strategies were of high value to them. They needed both test taking strategies and learning strategies to cope with their issues.

The seventh question was about their attitudes toward LMS testing. The question asked “What is your attitude towards the LMS testing? Are they fair?” Learners had different opinion regarding fairness of the tests because some of the learners believed some parts of the exams were fair, but the others were not. Especially those students who wanted to take IELTS exam. They were all worried about the writing part of the real exam. Some students argued that some tests are too easy, and achieving a high score is almost possible for everybody while in international standardized testing only few people can shoot high scores.

The eight question which was the last question in the interview asked “Do you want to add anything that you feel might be important to the study? Some of the points and issues that students argued are as follows:

The first issue regarding LMS testing was that student could not negotiate or communicate with the machine that marks their tests. If an assistant like a teacher was present, he or she could help by clarifying some vague parts of

the questions to students. So, the students specify lack of communication and negotiation as the main problem regarding LMS testing.

The other problem was the idiosyncrasies in teaching. Learners believed that although they studied a lot for a test, they could not achieve a satisfactory score. That is they did not pay attention to some points while studying, and those points were asked in the test. Therefore, they were unsatisfied with their performance in the test. Another objection close to this issue was that teachers always can find some concepts and points that were not mentioned or taught by all the teachers or if it is taught different criterions brought into consideration while teaching it. As the result, students cannot answer those questions satisfactorily.

Some students believed the tests have given them a sense of anxiety. Some of them always felt nervous because they had a test. On the other hand, when they get lower scores, they were worried about their progress.

Discussion and conclusion

Many other studies came to same conclusion as this study (e.g., Andrews, Fullilove and Wong, 2002; Alderson and Wall, 1993; Cheng and Curtis, 2004; Ferman, 2004; McNamara, 2000) that wash back can affect students or learners in various ways.

In this study the first issue to investigate was the students' studying methods. It has been discussed that studying methods are influenced by various kinds of testing. Most of the English learners who participated in the study said that their studying methods were influenced by the LMS testing. Participants were asked about their studying methods, and almost all of them agreed that their studying methods are influenced by the testing method. That is LMS testing as an agent of testing has had affected the learners' studying methods. Students studied based on LMS testing. Even when they were asked whether they change their studying methods if their teachers were responsible for constructing and marking a test, they replied positively. It seems that students studying methods are greatly influenced by various kinds of testing. Haughes (1993) suggested a tracheotomy to explain the concept of wash back in real learning context which includes participants, processes and products. He argued that perceptions of the learners are shaped through the nature of a test regarding their teaching and learning activities. Consequently, these perceptions and attitudes lead to specific actions that participants are to pass (process) in order to accomplish the task. It is worth mentioning that each test has a number of tasks and items which influence the learning outcomes (products).

The second part in the questionnaire concentrated on the effects of LMS testing on English learners' studying content. In the interview students highlighted a high influence, and also the results of the questionnaire confirmed this fact which is in line with other studies. The contents of text book are becoming more and more important to learners because of new approaches in testing. That is to say learners are to understand a subject fully

to answer the question, or else they will not be able to complete the task in required time. As the result, nowadays students focus more on the content.

Another part of the questionnaire focused on the importance of different parts of text books. Nearly all students said they study all parts, but some parts intrinsically require more attention. It is understandable that not all parts of a text book are equally important, and students could somehow detect and highlight it. However, to make tests more challenging the test designers have to ask about subtle points or points which may not be directly introduced in the text book. This is because of the fact that if students receive excellent scores during a term, they expect to get the same or near to that score in real IELTS, TOEFL, or PTK exams. The other issue regarding the tests is that tests have to encourage the best learners to try more, and at the same time do not overwhelm the weak students. Also Anderson and Wall (1993) pointed to the fact that a test influences teachers and learners in a way that they would not normally do in a situation in which there are no tests.

The process of designing a test is up to one teacher only each time they want to design a test. The teacher in charge of designing will most likely pay attention to the parts that other teachers do not pay attention as much, and teachers are not aware of the parts that will be part of the test. Therefore, teachers highlight different parts, and students subsequently study differently and perform differently in the exam. In the researcher's experience teachers highlight, the parts that they feel they should be highlighted sometimes without any particular reasons. Some teachers pay more attention to writing skill and components of writing such as grammar, cohesion, coherence, etc. Some teachers put the primary focus on input for example listening or reading, and some say speaking is the symbol of language, and focus on speaking skill. Ultimately, nearly all the teachers agree that international standardized tests such as IELTS, TOEFL or PTK are unpredictable, and any parts or points can be potentially a real exam question.

Although these international exams are usually of prime importance to English learners, they are not the ultimate goal because English learners ultimately want to study or live in an English speaking community. As the result the most important point for the learners is the ability to communicate or it is better to say communicative competence. Hughes (2003) asserted that test taking strategies solely cannot provide the learner with a means of ability improvement.

English learners also tend to ask or bring IELTS questions to their classes in order to get more familiar with the real exam or real exam's expectations. However, they also focused on the specific parts that might be important to students who want to take tests. As we discussed before, students also were taught supplementary materials beside their course book, but the LMS system was just based on the course book. Students most of the time referred

to the course book to get the required score. Students also asserted the supplementary materials they study were not according to LMS testing. However, they tried to study some supplementary materials which are more probable to help them any test including LMS. It is worth saying that LMS related books are not specified in the course. Therefore, learners almost always tried to focus more on learning.

The overall results showed that LMS can significantly change students study methods. Apparently, there were not any differences between male and female participants. This could be as the result of awareness towards IELTS or TOEFL's reliability. Nowadays everybody is aware of the fact that they shoot higher scores by learning more not by accident or chance. As the result, they, female or male learners, are more concerned with their learning. Another factor that might play a role here is the fact that international exams are expensive and also time consuming. No one actually wants to spend a large amount of money and long time to get their required IELTS or TOEFL or any other international standardized tests, and because learners consider their LMS score as a measurement of their learning, they try to get higher score. Consequently, they change their studying methods to get higher score. English learners are aware of the fact that the best way to get higher bands or scores is to learn the content.

Implications

By concentrating on the findings of this study, it is understandable that this study has theoretical and pedagogical implications. The theoretical aspect of this study can improve insight into the wash back effect. Another implication of this study addresses the phenomenon of wash back in mechanical testing or it might be better to say in LMS testing.

In the pedagogical implication of the study first of all, I would like to bring mechanization into the focus of attention. With great advances in technology, now there is the possibility to take advantage of the technology by assigning some part to machines or computers. It goes without saying that, computers never get tired and can work 24-7. They are also less costly in comparison with human managed education. It is inevitable that computers will change the educational system, but Nobody knows to what degree and when. This study can provide insight into LMS testing wash back on English learners. According to the result of this study LMS testing can have a significant effect on students' study methods and the content that students study. Well prepared tests can show the way to students to achieve their desired score or level of proficiency. However, ill-prepared tests can have a detrimental effect on the content that the students study and students' study methods. Considering the future of education, where mechanization is of prime importance, LMS testing deserve more attention.

The finding of this study is applicable to other Language institutes or any other institutes which tries to use a kind of online testing system. The

experts and specialist can design the test in a way that automatically guide the students in their studying methods. It seems that a reform movement is on its way to revolutionize the system of learning and testing. The financial implications are of great value to all the people involved. For example, the computer can act like a tutor whenever a student feels like studying or testing himself or herself without spending a large amount of money. Furthermore, the institutes can provide the students with cutting edge technology in education by investing a little money. It also provides students with great feedback in a way that they do not need to spend much time and money on real some exams to get feedback.

This study also will help mechanical testing system as an assistant to promote better studying methods in students. It has been argued that mechanical testing is not a good measure for evaluation. However, in some cases using it can be beneficial if we take a look at the big picture. That is to say if one considers the financial and organizational issues, they realize that with large number of students, it is inevitable to use mechanical testing. It is understandable that this approach to testing needs more revisions.

Suggestions for Future Studies

The wash back effect is a quite complicated and important area of research. Considering the large number of people who want to learn a new language, and anything in general, if we are to inspire students to do the appropriate studying outside classroom, we have to have a deep understanding of the issues involved in wash back. In this study, a questionnaire and interview were used to collect data. In future studies other means of data collection can also be used such as observation. Furthermore, teachers and experts can be interviewed to provide a better understanding of the phenomenon. Furthermore, students from different fields of study can be investigated. The wash back effect can be different in various fields of studies.

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Appendix A: Questionnaire

Instruction: Dear student, please take a few minutes to answer the survey items as precisely as possible. The questionnaire is merely for research purposes and your response is very important to us. You stay anonymous, the information will be confidential and you will not be evaluated based on these answers.

Gender: male female

Field of study:

Semester of study:

No	ITEMS	Strongly Agree	Agree	No comment	Disagree	Strongly Disagree
1	All sections of English textbooks are of equal importance.					
2	Final examinations influence my studying method.					
3	I try to study based on previous final exams.					
4	I have collected different exam samples to consider in my studying.					
5	I bring the previous exam questions to class for reviewing.					
6	In studying my textbooks I consider pedagogical aims not the final exams.					
7	I try to learn test taking strategies.					
8	I spend less time on sections that are less likely to appear in the final exams.					
9	I study the important points without considering the final exams.					
10	I study based on final exam questions.					

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11	If I focus on the final exam questions, I get better marks.				
12	How other students judge my marks is important to me.				
13	I consider learning strategies more important than test taking strategies.				
14	If my teachers were responsible for the final exams, I'd study differently.				
15	The supplementary materials that I study are influenced by final exams.				
16	I set the priority of learning the reviewed points in books and classes based on the priorities of final exams.				
17	I ask my teacher to answer and discuss the previous final exam questions in class.				
18	I expect my teachers to put more emphasis on points tested in final exams.				
19	I feel bad if I get lower marks than my friends and classmates.				
20	Final exams provide good feedback for students' studying.				
21	I believe that final exams are fair to students.				

