

## **Final Examinations and Their Washback Effects: A Study on Iranian Payame Noor University Distance Learners**

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### **Abstract**

This study aimed at investigating the washback effect of university-level final examinations on Iranian distance learners' study methods and content. Furthermore, the differences between male and female students and between humanities and science students with regard to the washback effect were studied. Using a questionnaire and an interview, both quantitative and qualitative data were collected. The results showed that the students were influenced by the final exams. The exams were important to them and significantly influenced the content and methods of their studying. Furthermore, there were significant differences between different groups of students regarding the washback effect of the exams. Several implications and directions for further research emerged from this study.

Keywords: washback, study method, study content

### **Introduction**

Testing has always been a crucial aspect of education. That is why evaluation is one of the necessary modules of each curriculum development program. According to Alderson and Wall (1993), it is a common belief that testing affects teaching and learning. The way in which examinations influence teaching and learning is commonly described as washback or backwash. Some writers use the term 'washback', whereas others prefer 'backwash' to describe the effects or influences of tests or examinations (Pan, 2009).

Research findings (e.g., Wall and Alderson 1993; Alderson and Hamp-Lyons, 1996) have suggested that the washback phenomenon exists but is too complicated to be considered in simple experimental designs. A test can affect the perceptions and attitudes of participants such as teachers and learners. These perceptions may then influence the work that the participants do, which, in turn, forms the learning outcomes.

Scholars have approached the washback issue from different perspectives (Luxia, 2005). According to Cheng and Curtis (2004), there are at least two major types or areas of washback or backwash studies.

The first type is related to traditional, multiple-choice, large-scale tests, which have had a primarily negative influence on the quality of teaching and learning (Madaus and Kellaghan, 1992; Nolan, Haladyna and Haas, 1992, all cited in Cheng and Curtis, 2004; Shepard (1990). Studies in which a specific test or examination has been modified and improved upon (e.g., performance-based assessment) to exert a positive influence on teaching and learning (Linn and Herman, 1997; Sanders and Horn, 1995, both cited in Cheng and Curtis, 2004; Wesdorp, 1982) found little washback effect from the introduction of multiple-choice tests into the assessment of language education, whereas Smith (1991) and Shohamy (1993, as cited in Luxia, 2005) observed an alignment of testing and teaching, such as teaching to the content and format of the tests.

The second type of study, however, based on Cheng and Curtis (2004) and Luxia (2005), has shown washback to have a positive, a negative or no influence on teaching and learning. Furthermore, many of those studies focused on understanding the mechanism of how washback or backwash is used to change teaching and learning (Cheng, 1998; Wall, 1999, as cited in Cheng and Curtis, 2004).

It is claimed that different factors play pivotal roles in the way high-stakes tests affect education (Alderson and Hamp-Lyons, 1996). What remains an open question, however, is specifying these factors that have the potential to moderate the backwash effects of tests (Razavipour, Riazi and Rashidi, 2011).

Considering the main focus of the present study, it is necessary to mention that in Iran, Payame Noor University (PNU) is the only distance education university and the largest state university, with more than one million students at different levels. It is worth mentioning that PNU's final examinations are achievement tests, but because of the large population of examinees (hundreds of thousands) and because these examinations can influence the students' academic careers, they can be considered high-stakes tests. These tests are constructed and administered at the end of each semester by the central organisation of the university. Therefore,

studying the washback effect of these tests on students is an original study that can have extensive implications for the educational context of the biggest university in Iran and one of the biggest universities in the world.

Despite PNU's size and prominence, there have been a limited number of studies on the educational system of this university. Shahbazi and Nikkar (2012: 160) reported that one of the disadvantages of the educational system of this university was reported to be "the difficult final examinations" and the "unacceptable assessment of the students' knowledge by the scores attained through the final exams".

In another study, Khatibi (2013) examined the relationship between PNU services and its students' satisfaction. The findings revealed that the lowest rate of dissatisfaction belonged to the final exams at the university.

Based on the aforementioned issues, this study addressed the following research questions:

1. Do PNU's final exams have any significant washback effect on the students' study methods?
2. Are there any significant differences between different groups of students (gender, fields of study) with regard to the washback effect of the final exams on their study methods?
3. Do PNU's final exams have a washback effect on the students' study content?
4. Are there any significant differences between different groups of students (gender, fields of study) regarding the influence of final exams on their study content?

Based on the research questions, four null hypotheses were suggested.

## **Methodology**

### ***Setting***

Payame Noor University is a distance learning university in Iran that has branches all over the country. It has more than 800 thousand undergraduate, graduate and post-graduate students, although only undergraduate students were considered in the present study. Based on the

information issued by the university, the number of female students is twice as the number of male students. The classes are not obligatory to attend, and the number of classes is approximately one third or even one fourth the number of classes in normal universities. In addition, regardless of the branch the students attend, they all receive the same final exams at the end of the semester. The questions of the exams are developed by professors and instructors chosen based on their experience and the quality of their questions. All students, regardless of the branch where they study, have the same textbook. The amount of material covered in one semester is determined by the central organisation of the university. The students are free to attend or not to attend the limited number of their classes; however, they must attend the exams at end of the term to be able to pass their courses. Another important point is that almost all exams are in a multiple-choice format, and after being administered, the papers go to specific headquarters to get scored. Therefore, teachers do not have a part in the scoring system. There are some exceptional courses in each field in which the exam is comprised of essay questions. One example is the writing course for students who are studying English as a foreign language. In their advanced writing course, they have to write three paragraphs, and the papers are scored by the teacher, who facilitated six sessions of class during the semester. Finally, it is worth mentioning that students pay for their courses, although the cost is not as high as courses at private universities.

### ***Participants***

A total of 522 (72.6% females and 27.4% males) students in different fields at PNU (54.2% humanities and 45.8% sciences) participated in the study. These students were studying in 5 different provinces of Iran and they were from the northwest, the northeast, the west, and the centre of the country, which are the most densely populated areas. Therefore, they were selected based on the number of students and their availability. Based on the biodata that were collected by the questions at the beginning of the questionnaire and to have more control over the participants' fields of study, participants were divided into two general groups, humanities and sciences. This was done because it was impossible to concentrate on all the different fields of study. It is worth mentioning that the number of female students studying at Payame Noor University is almost twice the number of males. In addition, the students studying humanities (283,

54.2%) outnumbered the science students (239, 45.8%), reflecting the greater number of students studying in different branches of humanities at the university. Overall, the participants had the following characteristics: They were students at Payame Noor University at the time of the study, they had passed at least two semesters at the university (which was a requirement because they were asked questions about the exams, which required them to have taken part in the exams), and they were volunteers.

### *Instruments*

A questionnaire was the main instrument in the study. However, to provide in-depth information to help interpret the data and to cross-validate the information provided by the questionnaire, an interview consisting of eight questions was considered the second instrument.

The questionnaire, a five-point Likert scale, was designed and issued in Persian, the native language of the participants and consisted of two main parts. The first part asked questions about demographic information. Part two consisted of 4 categories and 21 items in total. The first category, which was called 'content', included six questions regarding the students' concern about 'what' they study. The second category, which included five questions, was concerned with the students' 'study methods'. This section aimed to elicit information to determine whether the students' study methods were influenced by the final exams. The third section, consisting of six items, was concerned with the students' perceived 'importance of final exams'. Finally, the last section, which included four questions, aimed to elicit information about the students' attitude towards the final exams 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 stages of designing and validating the questionnaire consisted of theoretical derivations, observations, interviews and piloting. The questionnaire was primarily derived from three different sources. The first one was relevant research studies, for example: Alderson and Hamp-Lyons (1996), Alderson and Wall (1993), Andrews (1994), Wall and Alderson (1996). The second one was the researchers' own experiences in teaching and testing at the university. Finally, talking to students created a

good source of information to devise the inventory. 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.

The interview consisted of eight open-ended questions. The questions were derived from the same sources mentioned for the questionnaire.

## **Procedures**

### ***Questionnaires***

Originally, approximately 1100 questionnaires were distributed; the return rate was approximately 48% (522 out of the total 1100). In addition, a total of 30 students participated in the interviews. The questionnaires were distributed in different provinces of the country, and the interviews were conducted in the Tehran province.

The frequency, percentage, mean and standard deviation (SD) of the data were calculated for all the items and the main domains. The chi-square and chi-square cross tabulation, a joint frequency distribution of cases based on two or more categorical variables, were used to investigate the significance of the results.

### ***Interviews***

This study took advantage of a mixed-method design; that is, both qualitative and quantitative methods were employed. Therefore, 30 (20 females and 10 males; 19 students of humanities and 11 of sciences) students who participated in the first phase also provided the interview data. They were assured that attending the interview sessions was voluntary, and the interviews were carried out on an individual basis. Unlike the participants who completed the questionnaires, the interviewees were chosen only from the Tehran province. All face-to-face interviews, which were conducted in the students' native language, were recorded, but the researcher tried to create a friendly atmosphere and not

to limit the interviewees too much. All recordings were transcribed and coded to create a link with the components of the questionnaire.

## Results

### *Quantitative Data Analysis*

#### *The influence of final exams on students' study methods*

The results of descriptive analysis showed that the students' study methods were influenced by PNU's final exams. The details of the analysis are as follows.

The first item in this category was: *The end-of-term exams influence my method of studying*. The total percentage of students who did not agree that the final exams influenced their study methods was only 13.4%. In contrast, more than 70% of students agreed with the statement and 15.3% had no idea. The second item in this category was: *I try to study based on the questions of the previous final exams*. Again, there was a sharp contrast between the percentage of agreements versus disagreements, 63.2% vs. 23.9%. In addition, 12.8% had no opinion. The third item was: *I spend less time on certain sections of the book, anticipating that they are less likely to be tested in the final examinations*. A total of 22.4% disagreed with this item, and 9.2% of students had no opinion. However, 68.4%, agreed with the statement. The next item was: *I study based on the final examinations*. The results for this item mirrored those of the previous item: The percentage of disagreements was 24.2%, whereas 62.3% agreed, and 13.6%, had no opinion. The last item was: *If the end-of-term exams were done by my own professors, I would change my study methods*. The total percentage of disagreements was 18.4%, which was in sharp contrast with the percentage of agreements, 70.3%. Additionally, 11.3% preferred not to comment on the item. Table 1 shows the mean and standard deviation for each item.

All in all, as Table 2 indicates, 5.4% of the students totally disagreed and 15% disagreed with the 5 items in the domain regarding content, leading to a total disagreement rate of 20.4%. Forty percent of the students agreed and 27.1% totally agreed with the content items, leading to a total agreement rate of 67.1%. In addition, a total of 12.5% did not comment on

the items. The results show that the students' study methods' were highly influenced by the PNU's final exams; nonetheless, a chi-square analysis was run to gauge the significance of the results.

**Table 1:** Descriptive statistics for the influence of final exams on the 'studying method'

Item	Strongly Agree	Agree	No Comment	Disagree	Strongly Disagree	X	SD
Final examinations influence my studying method.	24.9	46.4	15.3	8.8	4.6	2.22	1.060
I try to study based on previous final exams.	18.6	44.6	12.8	17.6	6.3	2.48	1.164
I spend less time on sections that are less likely to appear in the final exams.	29.1	39.3	9.2	16.7	5.7	2.31	1.215
I study based on final exam questions.	21.5	40.8	13.6	18.8	5.4	2.46	1.174
If my teachers were responsible for the final exams, I'd change my studying method.	41.4	28.9	11.3	13.2	5.2	2.12	1.229

**Table 2:** Frequency and percentage of the influence of final exams on the studying method

	Frequency	Percent	Valid Percent	Cumulative Percent
Totally Disagree	142	5.4	5.4	5.4
Disagree	392	15.0	15.0	20.5
No Idea	325	12.5	12.5	32.9
Agree	1044	40.0	40.0	72.9
Totally Agree	707	27.1	27.1	100.0
Total	2610	100.0	100.0	



As displayed in Table 3, the selections of “agree” (residual = 522) and “totally agree” (residual = 185) were more than what was expected, whereas the selections of “disagree” (residual = -130), “totally disagree” (residual = -380) and “no idea” (residual = -197) were lower than expected.

**Table 3:** Observed, Expected and Residual Values; the influence of final exams on the studying method

	Observed N	Expected N	Residual
Totally Disagree	142	522.0	-380.0
Disagree	392	522.0	-130.0
No Idea	325	522.0	-197.0
Agree	1044	522.0	522.0
Totally Agree	707	522.0	185.0
Total	2610		

As Table 4 indicates, the results of the chi-square analysis ( $\chi^2 (4) = 970.916$ ,  $P < .05$ ) showed that the influence of final exams on the study methods of students is significant. Accordingly, the answer to the first research question was: PNU’s final exams have a significant influence on students’ study methods. Therefore, the first null hypothesis was rejected.

**Table 4:** Chi-Square analysis, the influence of final exams on the studying method

Chi-Square	970.916 <sup>a</sup>
Df	4
Asymp. Sig.	.000

<sup>a</sup> 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 522.0.

#### *The influence of final exams on the study methods of different groups of students*

A chi-square analysis was run to compare the male and female students with regard to the influence of final exams on their study methods. The results, ( $\chi^2 (4) = 10.560$ ,  $P = .032$ ), showed that the differences between the male and female students were significant, indicating that male

students' study methods were more influenced by the final exams than were the study methods of the female students.

Another chi-square analysis was run to compare the influence of final exams on the study methods of humanities students and science students. The results, ( $\chi^2$  (4) = 15.546, P = .004), showed significant differences between the two groups. The science students' study methods were more influenced by final exams than were the humanities students'. Therefore, the null hypothesis was rejected.

#### *The influence of final exams on study content*

The results of the descriptive analysis showed that the students' study methods were influenced by the PNU final exams. The details of the analysis are as follows.

The first item in this category was: *All parts of PNU books are equally important*. Only 1.0%, of the students strongly disagreed with this item, and 23.8% disagreed. On the contrary, 15.1% and 39.1%, i.e., a total of 54.2%, agreed with the item. The second item in the content category was: *While studying my books, I consider the final exam tests more than the pedagogical aims*. The percentage of students who strongly disagreed with the item was 15.3%, and 26.2%, disagreed. Approximately 19.2% of the students preferred not to comment on the item. However, 15.3%, and 23.9%, a total of 39.2%, showed agreement. The next item was: *I study the important points of my books based on the final exams*. Nine percent of the students strongly disagreed with the item, and 21.8% disagreed with it. Seventeen percent did not comment on the item; however, 52.1% agreed with it. The next item was: *The supplementary material that I study is influenced by my final exams*. The answers indicated that 38.7% disagreed, 42.2% agreed, and 19.2% had no opinion. The fifth item was: *I assign priority to learning to the materials in the books based on the priorities given to them in the final exams*. Only 5.0% strongly disagreed and 13.2% disagreed with the item. More than 22 % had no opinion, and 59.1% agreed with the item. The last item in this category was: *I expect my professors to bring the questions of the previous exams to the class for reviewing*. Only 11.8% disagreed, 22.6% had no opinion, and 65.5% showed agreement. Table 5 shows the mean and standard deviation for each item.

**Table 5:** Descriptive statistics for the influence of final exams on the ‘content’

Item	Strongly Agree	Agree	No Comment	Disagree	Strongly Disagree	X	SD
All sections of PNU textbooks are of equal importance.	15.1	39.1	21.1	23.8	1.0	2.56	1.041
In studying my textbooks I consider pedagogical aims not the final exams.	15.3	23.9	19.2	26.2	15.3	3.02	1.316
I study the important points without considering the final exams.	19	33.1	17	21.8	9.0	2.69	1.255
The supplementary materials that I study are influenced by final exams.	14.4	27.8	19.2	26.1	12.6	2.95	1.272
I set the priority of learning the reviewed points in books and classes based on the priorities of final exams.	21.6	37.5	22.6	13.2	5.0	2.42	1.115
I ask my professors to answer and discuss the previous final exam questions in class.	29.3	36.2	22.6	8.0	3.8	2.21	1.070

As Table 6 indicates, 7.8% of the students totally disagreed and 19.9% disagreed with the 6 items in the domain of content making, leading to a total 27.7% disagreement. On the contrary, 33% of the students agreed and 19.1% agreed entirely with the items, leading to a total 52.1% agreement. In addition, a total of 20.3% did not comment on the items.

As is displayed in Table 7, the selections of “agree” (residual = 405.6) and “no idea” (residual = 8.6) were more than what was expected, whereas the selections of “disagree” (residual = -4.4), “totally disagree” (residual = -382.4) and “totally agree” (residual = -27.4) were less than what was expected.

**Table 6:** Frequency and percentage of the influence of final exams on content

	Frequency	Percent	Valid Percent	Cumulative Percent
Totally Disagree	244	7.8	7.8	7.8
Disagree	622	19.9	19.9	27.7
No Idea	635	20.3	20.3	47.9
Agree	1032	33.0	33.0	80.9
Totally Agree	599	19.1	19.1	100.0
Total	3132	100.0	100.0	

**Table 7:** Observed, Expected, and Residual Values; the influence of final exams on the ‘content’ of studying

	Observed N	Expected N	Residual
Totally Disagree	244	626.4	–382.4
Disagree	622	626.4	–4.4
No Idea	635	626.4	8.6
Agree	1032	626.4	405.6
Totally Agree	599	626.4	–27.4
Total	3132		

As Table 8 indicates, the chi-square analysis results ( $\chi^2(4) = 497.422$ ,  $P < .05$ ) indicated that the differences were significant. Therefore, the third null hypothesis was rejected.

**Table 8:** Chi-Square analysis, the influence of final exams on the ‘content’ of studying

Chi-Square	497.422 <sup>a</sup>
Df	4
Asymp. Sig.	.000

<sup>a</sup> 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 626.4.

### *The influence of final exams on different groups’ study content*

A chi-square analysis was run to compare the male and female students with regard to the influence of final exams on their study content. The results ( $\chi^2(4) = 14.924$ ,  $P = .005$ ) indicated there were significant

differences between the male and female students. The male students were more influenced by the final exams in terms of their study content.

Another chi-square analysis was run to compare the influence of final exams on the study content of humanities and science students. The results ( $\chi^2(4) = 29.681, P = .000$ ) indicated that there were significant differences between the humanities and science students in this regard. The study content of humanities students was influenced by final exams more than the science students' was. The results rejected the fourth null hypothesis, showing a significant difference between male and female students and between humanities and science students with regard to their study content.

### *Qualitative Data Analysis*

Out of the eight interview questions, seven questions were based on an a priori category procedures; that is, they were based on pre-set themes. The four themes were: (1) the importance of final exams to the students, (2) the influence of final exams on what the students studied (content), (3) the influence on the students' methods of studying (method), and (4) the students' attitude towards the exams. However, the last question, in which the interviewees were asked to add whatever they wanted, needed a different analysis. Allocating all the details of what the students said was not easy or straightforward, and in some cases, the two researchers needed discussions to reach a final decision. This also happened with some other questions because some students did not limit themselves to answering the question; they preferred to discuss other points.

The first question of the interview was: How important do you consider the end-of-term exams? All students said that the end-of-term exams were very important to them because they were allowed not to attend their classes, but they had to attend the exams, and if they failed, there was nothing they could do except repeat the course. In addition, they had to pay for their courses, and failing an exam meant paying for the course for a second time.

The second question was: Are you ready to sacrifice important curricular content for the marks you get from the exams? The answer to this question

was ‘yes’ for all students; however, some who answered ‘yes’ preferred to get good marks but also wanted real knowledge.

The third question was: Which parts of the textbooks are more important to you, the ones that appear in the exams or those with more information? The answer to this question was ‘the parts that appear in the exam’; however, the students said that they did not like to admit this.

Question number 4 was: Do you think your study method is influenced by the final exams? To what extent? The answer to this question was ‘yes, a lot’. They said that they tried to study in a way that was geared toward their final exams.

Question number 5 was: If your end-of-term exams were constructed and marked by your teachers, would you change your method of study? The answer to this question was primarily ‘yes, most likely’.

Question number 6 was: Which is more important to you, test-taking strategies or learning strategies? The answer to this question was ‘both’. When they were asked to choose one of them, most students said they would prefer the learning strategies.

Question number 7 was: What is your attitude towards the end-of-term exams at Payame Noor University? Do you find them fair? The students asserted that some exams were fine and acceptable, but there were also exams that were not really fair.

The last question was: Do you have anything to add? Some of the points students added were as follows:

The problem with the present testing system is that we cannot communicate and negotiate with the machines that mark our papers. If our teachers were our examiners, we could talk to them and they would be able to help us.

If there were not so many problems in the questions we would be happy with the testing system, but, unfortunately, every semester there are unpredictable problems in the exam papers. Besides, we never feel safe and confident when

coming to the exam session. Who knows? Teachers are always able to find something that is not directly mentioned in the book.

I have many sample tests for each course, provided that the book has not changed over years, I go through the tests and all the important points of the book have been repeated in them. There remains one thing to do; extracting the important points and getting ready for the final exam.

Tests give me anxiety, especially the way they are done at the end of the term. Sometimes I forget whatever I have studied and I might even feel sick.

### **Discussion and Conclusion**

The results of this study confirm the results of many other studies (e.g., Andrews, Fullilove and Wong, 2002; Alderson and Wall, 1993; Cheng and Curtis, 2004; Ferman, 2004; McNamara, 2000) that found that the washback effect can influence learners.

The washback effects of tests on the study methods of students were the first issue under investigation in this study. It is claimed that study methods can be influenced by tests. The majority of the participants asserted that their study methods were influenced by PNU's final exams. Although the participants were asked in different ways, the results were the same: They studied based on the final exams. Even in answering one question on whether they would change their study methods if their own teachers designed and constructed the tests, the majority asserted that they would. It seems that the students' perceptions toward their learning activities, in accordance with Hughes' suggestion, are greatly influenced by final exams. Hughes (1993) suggested a mechanism of washback in real learning and teaching contexts. He constructed a model of washback through the tracheotomy of participants, processes and products. He believed that, first of all, the nature of a test influences the perceptions of the participants regarding their teaching and learning activities. These perceptions and attitudes also have effects on what the participants do to carry out their work (process), including practicing the types of items available in the test, which affect the learning outcomes (product).

As for the second domain of the questionnaire, regarding the influence of final exams on students' study content, the students reported a high influence, and the data analysis results confirmed the significance of the influence. This is in line with the existing literature. Previous studies on the effect of washback on contents and curricula are concerned with schools and institutes that focus on content and narrow down the curricula to concentrate on subjects that are going to be tested. Bearing in mind that PNU classes are limited to a few sessions for each subject and that even these few classes are not compulsory, the findings of other studies can be applicable to the content of both teaching and learning. Therefore, it is safe to say that the results of this study confirm those of previous studies.

According to the results, the majority of students consider all parts of PNU books to be equally important. It goes without saying that not all sections of any textbook are equally important, and if these students consider them so, it is due to the influence of tests. More than 20 years of teaching at PNU by one of the researchers confirms that some PNU textbooks have been used for many years, and each year, teachers develop multiple choice tests based on the main points of the same books. Therefore, after a few attempts, test designers, who have to maintain test novelty, have to go for sections of the book that have not yet been tested; therefore, they end up testing details and even marginal points. The problem of repeatedly constructing tests based on the same book has been discussed in many faculty meetings, in which the researcher takes part. This issue that was raised in the interviews is also in line with what Alderson and Wall (1993: 117) noted; that is, a test causes language teachers and learners to do things "they would not necessarily otherwise do because of the test".

Furthermore, because many teachers teach the same course at different centres of the university, and each semester, only one teacher designs the test from his or her own point of view, even teachers cannot be sure which parts of the textbook will appear in the next exam; therefore, they simply tell their students that any point can potentially be an exam question. The experience of the researchers and many other teachers at this university is that teachers emphasise the sections they believe must be emphasised, but they ultimately must tell their students that the exam questions might be from any part of the book. These findings confirm Prodromou's (1995) and Hughes' (2003) findings that multiple-choice tests can have a negative washback effect because they limit test content and knowledge of students



and cause poor teaching practises. Hughes (2003) argued that practising for multiple-choice items and learning test-taking strategies does not provide learners with the most effective means of improving their language ability. Two other pieces of evidence that show the influence of final exams on study content are the students' agreement that they asked their teachers to discuss previous exams during class time and they give priority to what they learn based on what appears in exams. As was mentioned, the limited hours of class time at PNU do not allow for much supplementary material for class discussion; however, students are usually referred to supplementary material for self-study. Notably, again, the majority of students asserted that the supplementary material they studied was influenced by final exams. In addition, in the interviews, they asserted that they considered the previous exam papers a type of supplementary material for their courses. According to Spratt (2005), if exams generate the publication of exam-related materials, they are considered high stakes. Most students and teachers at PNU are already aware of the exam-related materials and exam-related classes available on the market.

The overall results showed significant differences between different groups of students with regard to what they studied. Apparently, the male students were more influenced by the final exams in terms of their study content. This could be traced back to what some of the male students said in the interviews. That is, they were more concerned about the money they paid for their courses; therefore, they did not want fail any course because they would have to repeat them and thus pay even more. The other significant result was related to humanities students, whose study content was more influenced by final exams than was that of their counterpart science students. A few of their teachers asserted that because of the nature of their courses, these students were aware that the best way to pass the exams successfully was to learn the curriculum content.

### **Implications**

Taking into account the findings and discussions presented in the previous sections, this study has both theoretical and pedagogical implications. Regarding the theoretical implications, first, the results of the present study can improve our insight into the washback effect. Another implication of this study addresses the phenomenon of washback in different fields of study, which has rarely been addressed.

Considering the pedagogical implications, there are hundreds of thousands of BA and BS students studying at PNU, and every semester, they must take part in the university's final exams, which are very influential on the students' academic career. According to the results of this study, these exams have a significant effect on what the students study and how they study; therefore, the exams require far more attention than they have been given. Ill-prepared and unreliable questions can have disastrous consequences in the education system of PNU. If offering high-quality education to a large group of students is the intention, the university policymakers must pay more attention to these exams. Considering the unique characteristics of PNU, where final exams are so important, the exams deserve more attention. According to the results, many students only read the previous final exam questions to be able to pass the tests, making the functions of these tests even more important. The university authorities should know that the majority of students do not consider the university final exams fair. It seems that we have to find the reasons for this widespread opinion, although some reasons are already clear. The problematic areas must be clarified, and solutions must be found.

Although the findings of this study are not applicable to other Iranian universities or educational organisations, a great number of students can benefit from the results. The courses of all fields of study at the university should be reviewed by the experts in the same field to decide on the appropriate type of exam. It seems that a reform movement should be conducted by carrying out well-monitored pilot studies on the effect of different versions of tests created by experts in each field. The important financial implications for the students and their families are an important factor in the way students approach these tests. Some students admitted that they spent a considerable amount of time and money preparing for the tests, but they were willing to do so because of the consequences of failure in the exams. It goes without saying that the test preparation business reflects economic inequalities in education because only students who can afford them can benefit from these supplementary classes.

This study has implications for test constructors as a basis for improving the items. Many studies (e.g., Cheng, 2008) have indicated that multiple-choice tests do not accurately indicate students' actual learning and skills; nonetheless, these tests are widely used at PNU. It is undeniable that multiple-choice tests can be used as an effective measure for some

courses; however, for others, they are not of any use. It seems that a broad revision of the types of courses and the appropriate types of tests for them is necessary.

### **Suggestions for Further Studies**

The washback effect is a very complicated and vast area of research. Each of the domains studied in this project can be worked on in separate studies. Considering the fact that there are few existing instruments in the area of washback, only two data collection methods, a questionnaire and an interview, were used in this study. Further studies can benefit from other methods of data collection, such as observation. Furthermore, longitudinal studies can study students to investigate the influence of PNU exams over time.

There are many aspects of the washback effect that remain to be investigated. Examples of these aspects are the influence of tests on the rate and sequence of learning and the degree and depth of learning. Finally, it should be mentioned that although many courses in all fields of study at PNU are tested by multiple choice tests, some courses assess students with essay question exams. The possible different washback effects of these two types of tests on students remain to be investigated.

**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 PNU 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 series of PNU final exam questions 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.					
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 professors 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	PNU final exams provide good feedback for students' studying.					
21	I believe that PNU final exams are fair to students.					

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