Investigating the Relationship between Barriers to Research Development and Knowledge Production among High School Teachers in Lamerd

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Abstract

This research is applied in terms of its purpose and descriptive-correlational in terms of its implementation. The statistical population of the study consisted of 220 high school teachers. Using Cochran's formula, 136 people were selected as sample size according to simple random sampling. Two researcher-made questionnaires were used to collect data. Validity of the questionnaires were based on Gouy's analysis and their reliability were based on Cronbach's alpha which were calculated to be 0.78 sad 0.83, respectively. In order to analyze the data, descriptive and inferential statistics were used. Descriptive statistics was used to determine percentages, to prepare tables and to calculate the frequency of teachers' feedback in each question and component. Pearson inferential statistics and regression were used to study meaningfulness between variables. The results of this study showed that there is a relationship between barriers to research development and knowledge production among high school teachers.

Keywords: research, knowledge production, barriers to research development.

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Introduction

Fundamental and sustainable transformation in each society depends on the transformation of the educational system in that society. One of the essential elements of this transformation is the development of research that provides the ground for the transition from the industrial community to the scientific and knowledge-based society. In such society, research and production of knowledge are the core of development and progress (Jabari, 2014). Technological advancements and the structure of human capabilities are also so interlinked that the success of each one needs another and the development of both requires a revision of educational systems and the ability to respond to the new challenges of knowledge production (Hasanai, 2012). In fact, research is one of the basic needs for the advancement and development of the entire country, and the strength and independence of any country is based on the research and production of knowledge. Therefore, the type and level of research activities are the main indicators of development and progress (Simin, 2014). In the face of future challenges, education is an invaluable asset. The realization of every ideal in the current societies is dependent on education. On the other hand, the dominant structure of education is its human resources that are teachers (Safi, 2014). The educational system of each country, as a dynamic and targeted system, plays a decisive and constructive role in the production and development of knowledge and seeks to increase knowledge production. In the age of knowledge and innovation, it is the main source of global economic competition, the educational system of each country is trying to use the knowledge to enhance innovation (Ta'ifi, 2015). Since teachers are the main source of knowledge production and the main educational assets and resources in each country, they should be managed in a manner appropriate to their knowledge. Therefore, it is necessary to try to discover the hidden mines in their minds in order to make this treasure a valuable asset (Alavi, 2015). It is clear to anyone that just education and physical presence in educational places are not the only important factors for learning, but

research in the present age is one of the most important factors in the production and increase of knowledge (Khajeh Bahrami, 2013). UNESCO focuses on the three main functions of education: knowledge production (research), knowledge transfer (education), knowledge dissemination (services). Among these three functions, knowledge production is of more importance in today's world. Knowledge production is not only a major factor in the scientific, economic, social, political, and cultural development of society, but also in maintaining the integrity of the religious and national identity (Conrad, 2016). It should be acknowledged that the teachers' lack of interest in research is equal to the stagnation in society in all development indicators (Amirianzadeh, 2015). Therefore, we should seek to discover the causes that have lead to this profound weakness in the education community. This research seeks to discover these. The cases that need to be evaluated should be identified and in order to find ways to attract teachers to the research and provide a platform for the input of this productive-minded brains into the field of research. The very small contribution of teachers' educational and research outputs to the curriculum and content of the programs, the very low per capita of teachers' production and research, poverty of information and skills among teachers especially in the field of basic and new knowledge, exploitation of traditional practices in classrooms despite the frequent advice and emphasis, their resistance to changing programs, and dozens of other reasons suggests that teachers have little interest in research. Hence, the present study seeks to investigate the barriers to the development of research skills and the production of teachers' knowledge. Therefore, by referring to theoretical and scientific foundations, this study examines the terms and conditions that can help and inspire teachers to produce scientific research and, consequently scientific theories and scientific production.

Theoretical backgrounds

The fundamental and sustainable evolution in each society depends on the transformation of the education and training system of that society. The essential means of this transformation is research

development that provides the ground for the transition from the industrial society to the scientific and knowledge-based society. In such a society, the study and production of science is the axial core of development and progress. Technological advancements and the structure of human capabilities are so interconnected that the success of each one needs another, and the development of both requires revision of educational systems and the ability to meet the new challenges of the production of science (Sardashti et ah, 2013). In fact, research is one of the most basic needs for achievement of the country's progress and development, and the strength and independence of each country is based on research and production of science. Therefore, the type and level of research activity is one of the main indicators of development and progress (Bazargan, 2012). Facing future challenges, the education is an inevitable capital. The realization of any ideal in the current societies is dependent on education. On the other hand, the main structure element of education is its human resources, that is, teachers (Afrooziniya, 2014). Findings of Ahanchian (2016) showed that the most important barriers to conducting research are lack of motivation in the researcher, lack of time and being too busy, restrictive administrative regulations and disuse of research results. And the least effective barriers are disinterest in conducting research, inability to use computers and uselessness of the research projects. Ebrahmi et al (2014) concluded that the barriers to educational structure had the greatest impact on the research inefficiency in universities and research centers of the country. Anderson (2016) in his study showed that the most important barriers to science production are motivational barriers, economic barriers, administrative and bureaucratic barriers, the barriers related to the method of giving scientific-research services and individual barriers related to their technical and specialized capabilities. Cohen et al (2016) in their study indicated that the establishment and expansion of a research notice system in the Ministry of Education and Provinces is an effective factor in the use of research findings in education. Brown (2014) in his

research showed that the use of research improves educational experiences and increases scientific creativity.

Research objectives

The main objective

Investigating the relationship between barriers to research development and knowledge production among high school teachers in Lamerd.

Secondary objectives

1- Investigating the relationship between economic barriers to research development and knowledge production among high school teachers in Lamerd

2- Investigating the relationship between structural barriers to research development and knowledge production among high school teachers in Lamerd

3- Investigating the relationship between cultural barriers to research development and knowledge production among high school teachers in Lamerd

4- Investigating the relationship between human barriers to research development and knowledge production among high school teachers in Lamerd

5- Investigating the relationship between technological barriers to research development and knowledge production among high school teachers in Lamerd

Research Questions

Main Question

Is there a relationship between barriers to research development and knowledge production in education from the point of view of high school teachers in Lamerd?

Secondary Questions

1. Is there a relationship between the economic barriers to research development and knowledge production in education from the point of view of high school teachers in Lamerd?
2. Is there a relationship between the structural barriers to research development and knowledge production in education from the point of view of high school teachers in Lamerd?
3. Is there a relationship between the cultural barriers to research development and knowledge production in education from the point of view of high school teachers in Lamerd?
4. Is there a relationship between the human barriers to research

development and knowledge production in education from the point of view of high school teachers in Lamerd?

5. Is there a relationship between the technological barriers to research development and knowledge production in education from the point of view of high school teachers in Lamerd?

Research Methodology

This research is applied in terms of purpose and descriptive-correlational in terms of data collection method. Given that the purpose of this research is the practical application of knowledge, the research is applied. Descriptive research consists of a set of methods aimed at describing the circumstances or phenomena under study.

Society and statistical sample

A statistical society is a collection of individuals or units that have at least one commonality (Delaware, 2012). Since statistical societies have a large geographic extent and scope and possibility of referring to all of them is not possible to the researcher, it is inevitable to select a group of them as a sample and generalize the results. So, researcher choses sampling method. The statistical population of this study consists of a total of 220 high school teachers in Lamerd. In this study, 136 people were selected as the sample using Morgan table. The sample members were chosen by simple random sampling.

Measurement tool

In order to collect data, two researcher-made questionnaires were used:

Barriers to Research Questionnaire: This questionnaire consists of 30 items in terms of structural, economic, cultural, human and technological barriers. The questionnaire was designed in the Likert five-point range.

Table 1: Research barriers questionnaire and its components

Row	Component	Related Questions
1	Economic barriers	Questions 1-6
2	Structural barriers	Questions 7 to 12
3	Cultural barriers	Questions 13 to 18
4	Human barriers	Questions 19 to 24
5	Technological barriers	Questions 25 to 30

Knowledge Questionnaire: This questionnaire examines amount of familiarity and skills of teachers in knowledge production and their familiarity and skill in using knowledge databases. The questionnaire contains of twenty questions in Likert's five-point range.

Reliability and validity of the measurement tool

Table 2: Reliability of Research Barriers Questionnaire

component	Economic barriers	Structural barriers	Cultural barriers	Human barriers	Technological barriers	Total
Reliability	0.71	0.71	0.75	0.74	0.69	0.78

Table 3: Reliability of the Knowledge Production Questionnaire

component	Skill in Research	skills in the use of scientific bases	Total
Reliability	0.83	0.76	0.83

Table 4: Structure Validity of the Research Barriers Questionnaire

Variables	Economic barriers	Structral barriers	Cultural barriers	Human barriers	Technological barriers
The correlation coefficient	0/88	0/80	0/82	0/79	0/90
Significance level	0/0001	0/0001	0/0001	0/0001	0/0001

Table 5: Structure Validity of the Knowledge Production Questionnaire

Variables	Skill in Research	skills in the use of scientific bases
The correlation coefficient	0/78	0/83
Significance level	0/0001	0/0001

Investigating Research Questions

The main question of the research: Is there a relationship between barriers to research development and knowledge production in education from the point of view of high school teachers in Lamerd?

Table 6: Pearson Correlation Coefficient for Two Components of Barriers to Research Development and Knowledge production

	Variables	Barriers to Research Development	Knowledge production
Barriers to Research Development	Pearson Correlation Coefficient	1000	-.418
	Significance Level		0.000
	N	136	136
Knowledge production	Pearson Correlation Coefficient	-.418	1000
	Significance Level	0.000	
	N	136	136

It is noticeable that the level of significance is less than 0.05. Therefore, there is a significant relationship between barriers to research development and knowledge production. This relationship is in the negative direction. That is, the production of science increases with decreasing barriers.

Table 7: Regression analysis of barriers to the development of research and production of knowledge

	β	*t*	*p-value*	*R*	R^2	Significance test of regression	
						p-value	F
Constant factor	16.122	7.852	0.000	-0.418	0.175	0.000	
Knowledge production	-0.456	4.896	0.000			7.532	

Regarding the results of Table 7, the regression is significant. Also, the coefficient of determination is 0.175, which means that by the obstacles to the development of research, up to 17.5% of the changes in the production of science can be explained.

The relationship between barriers to research development and knowledge production can be summarized as follows:

(Barriers to research development) × (-0.456) + 16.122 = production of knowledge

Minor Research Questions

First question: Is there a relationship between the economic barriers to research development and knowledge production in education from the point of view of high school teachers in Lamerd?

Table 8: Pearson Correlation Coefficient for Two Components of Economic Barriers and Knowledge production

	Variables	Economic Barriers	Knowledge production
Economic Barriers	Pearson Correlation Coefficient	1000	-.336
	Significance Level		0.000
	N	136	136
Knowledge production	Pearson Correlation Coefficient	-.336	1000
	Significance Level	0.000	
	N	136	136

It is noticeable that the level of significance is less than 0.05. Therefore, there is a significant relationship between economic barriers and knowledge production. The Pearson correlation coefficient between these two components is 0.336. This relationship is in the negative direction. That is, production of knowledge increases with the reduction of economic barriers.

Table 9: Regression analysis of the component of economic barriers and production of teachers' knowledge

	β	*t*	*p-value*	*R*	R^2	Significance test of regression p-value	F
Constant factor	15.326	6.258	0.000	-0.336	0.112	7.256	
Economic Barriers	-0.486	6.144	0.000			0.001	

Regarding the results of Table 9, the regression is significant. Also, the coefficient of determination is 0.112, which means that, by economic barriers, up to 11.2% of the changes in the production of teachers' knowledge production can be explained.

The relationship between economic barriers and the production of teachers' knowledge can be summarized as follows:

(Economic barriers) × (-0.486) + 15.326 = Production of knowledge

Second question: Is there a relationship between the structural barriers to research development and knowledge production in education from the point of view of high school teachers in Lamerd?

table 10: Pearson Correlation Coefficient for Two Components of Structural Barriers and Teachers' Knowledge production

	Variables	Economic Barriers	Knowledge production
Structural Barriers	Pearson Correlation Coefficient	1000	-.412
	Significance Level	136	0.000
	N		136
Knowledge production	Pearson Correlation Coefficient	-.412	1000
	Significance Level	0.000	136
	N	136	

It is noticeable that the level of significance is less than 0.05. Therefore, there is a significant correlation between structural barriers and the production of teachers' knowledge. Pearson correlation coefficient between these two components is 0.412. This relationship is in the negative direction. That is, the production of knowledge increases with the reduction of structural barriers

Table 11: Regression analysis of the component of structural barriers and production of teachers' knowledge

	β	t	*p-value*	R	R^2	Significance test of regression	
						p-value	F
Constant factor	15.425	7.985	0.000	-0.412	0.170	8.821	
Structural Barriers	-0.589	4.857	0.000			0.000	

Regarding the results of Table 11, the regression is significant. Also, the coefficient of determination is 0.170, which means that by structural barriers, up to 17% of the changes in the production of teachers' knowledge can be explained.

The relationship between structural barriers and the production of teachers' knowledge can be summarized as follows:

(Structural Barriers) × (-0.589) + 15.425 = Production of knowledge

Third Question: Is there a relationship between the cultural barriers to research development and knowledge production in education from the point of view of high school teachers in Lamerd?

Table 12: Pearson Correlation Coefficient for Two Components of Cultural Barriers and Production of Teachers' Knowledge

	Variables	Economic Barriers	Knowledge production
Cultural Barriers	**Pearson Correlation Coefficient**	**1000**	**-.396**
	Significance Level	**136**	**0.000**
	N		**136**
Knowledge production	**Pearson Correlation Coefficient**	**-.396**	**1000**
	Significance Level	**0.000**	**136**
	N	**136**	

It is noticeable that the level of significance is less than 0.05. Therefore, there is a significant relationship between cultural barriers and knowledge production. The Pearson correlation coefficient between these two components is 0.396. This relationship is in the negative direction. That is, the production of knowledge increases with the reduction of cultural barriers.

Table 13: Regression analysis of cultural barriers and production of teachers' knowledge

	β	*t*	*p-value*	*R*	R^2	Significance test of regression	
						p-value	F
Constant factor	15.443	8.112	0.000	-0.396	0.157	8.365	
Cultural Barriers	-0.453	4.635	0.000			0.000	

Regarding the results of Table 13, the regression is significant. Also, the coefficient of determination is 0.157, which means that through cultural barriers, up to 15.7 percent of the changes in the production of teachers' knowledge can be explained.

The relationship between cultural barriers and the production of teachers' knowledge can be summarized as follows:

(Cultural barriers) × (-0.453) + 15.443 = production of knowledge

Fourth Question: Is there a relationship between the human barriers to research development and knowledge production in education from the point of view of high school teachers in Lamerd?

Table 14: Pearson correlation coefficient for two components of human barriers and the production of teachers' knowledge

	Variables	Economic Barriers	Knowledge production
Human Barriers	Pearson Correlation Coefficient	1000	-.428
	Significance Level		0.000
	N	136	136
Knowledge production	Pearson Correlation Coefficient	-.428	1000
	Significance Level	0.000	
	N	136	136

It is noticeable that the level of significance is less than 0.05. Therefore, there is a significant relationship between human barriers and knowledge production. Pearson correlation coefficient between these two components is 0.428. This relationship is in the negative direction. That is, the production of knowledge increases with the reduction of human barriers.

Table 15: Analysis of Human Barrier and knowledge Production Regression

	β	*t*	*p-value*	*R*	R^2	Significance test of regression	
						p-value	F
Constant factor	14.236	7.362	0.000	-0.428	0.183	8.336	
Cultural Barriers	-0.369	4.863	0.000			0.000	

Regarding the results of Table 15, the regression is significant. Also, the coefficient of determination is 0.183, which means that through human barriers, up to 18.3% of the changes in the production of teachers' knowledge can be explained.

The relationship between human barriers and the production of teachers' knowledge can be summarized as follows:
(Human barriers) × (-0.369) + 14.236 = Production of knowledge

Fifth Question: Is there a relationship between the human barriers to research development and knowledge production in education from the point of view of high school teachers in Lamerd?

Table 16: Pearson Correlation Coefficient for Two Components of Technological Barriers and Teachers' Knowledge Production

	Variables	Economic Barriers	Knowledge production
Technological Barriers	Pearson Correlation Coefficient	1000	-.627
	Significance Level		0.000
	N	136	136
Knowledge production	Pearson Correlation Coefficient	-.627	1000
	Significance Level	0.000	
	N	136	136

It is noted that the significance level is less than 0.05. Therefore, there is a significant relationship between technological barriers and knowledge production. The Pearson correlation coefficient between these two components is 0/627. This relationship is in the negative direction. That is, the production of knowledge increases with the reduction of technological barriers.

Table 17: Regression Analysis of Technological Barriers and the Production of Teachers' Knowledge

	β	t	p-value	R	R^2	Significance test of regression	
						p-value	F
Constant factor	16.256	7.326	0.002	-0.627	0.393	8.110	
Technological Barriers	-0.517	4.407	0.004			0.003	

Regarding the results of Table 17, the regression is significant. Also, the value of the coefficient of determination is 0.393, which means that by the technological barriers dimension, up to 39.3% of the changes in the production of knowledge can be explained.

The relationship between technological barriers and the production of teachers' knowledge can be summarized as follows:

(Technological barriers) × 0.517 + 16.256 = production of knowledge

Table 18: Significant Relationship between Linear Regression for Each Barrier to Research Development and Knowledge production

Components	Beta	The value of t	Significance Level
Human barriers	0.369	2.363	0.000
Structural barriers	0.598	2.212	0.000
Economic barriers	0.486	1.565	0.000
Cultural barriers	0.453	3.223	0.000
Technological barriers	0.517	3.113	0.000

Given the values of the beta column, structural barriers can have the greatest impact on the production of teachers' knowledge. The significance level of each of the five components is less than 0.5, so each of the five barriers influences the production of teachers' knowledge.

Conclusion

The results of the research showed the significant relationship between the obstacles to the development of research and science production. This relation is negative, that is, the production of science increases with the reduction of barriers. The coefficient of determination is equal to 0.175, which means that by the barriers to research development, up to 17.5% of the changes in the production of science can be explained. The findings of this research also showed that the barriers to research development, from the teachers' point of view, are respectively, structural, technological, economic, cultural and human barriers. Therefore, it is concluded that the structural barriers have the greatest importance and human barriers have the least importance. In explaining this finding, It can be said that research is one of the key axial of the advancement and sustainable development of education. If no research is carried out, human knowledge will not increase and it will encounter stagnation. Also, without research conducting, education will not have necessary dynamism and pleasure. Hence, one of the main factors of progress in developed countries is the particular attention to research.

suggestions

1. Contextualizing and establishing a proper structure for the development of research through the formation of specialized committees.
2. The structural reform of today's educational centers and a specific strategy formulation for the promotion of Islamic education, training and research instead of the new and old sciences, in other words, providing a specific definition of the Islamic education structure.
3. Culture creation and provision of conditions for expanding areas of using and applying research.

4. Drafting an adequate budget allocation plan for the development of research in education.
5. Financial support and guidance of liable and expert teachers and organizations to conduct scientific research activities in education.
6. Designing, organizing, culture expanding and financial resources allocating to expand the research in the country in order to develop applicable plans of industry and policymaking centers.
7. Developing an Educational-Research Integrated System by using the viewpoints of the professors and researcher instructors on the educational structure of the country in order to prevent ineffective and repetitive activities.

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