

A Revision Of Scientific Research In Jordanian Higher Education Institutions: A Follow-Up Assessment

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Abstract

This study aimed at identifying the status and obstacles of scientific research in Jordanian higher education institutions as perceived by vice presidents, deans and vice deans of the scientific research departments. In addition to differences in status and obstacles, pursuant to the study variable, this is the institution type. The sample composed of (139) faculty members and all 27 vice presidents, deans and vice deans of the scientific research departments at all 27 Jordanian universities. Having reviewed all interviews and some literature, the researcher prepared a questionnaire, which was tested for validity and reliability of the questionnaire, and used five-likert scale to measure the status and the obstacles of the scientific research in higher education in Jordan.

The study showed the following findings; The scientific research status mean was 2.19 and that was low result, also the themes have almost the same results where the research planning got the highest among the themes and the research support the lowest. The scientific research obstacles mean was 2.87 and that was low result, also the themes have almost the same results while doing research for academic promotion got the highest among the themes and doing research for developing human knowledge and enjoyment the lowest. In the light of these results, the study provides a number of recommendations that could reduce the obstacles for funding of scientific research in higher education.

Keywords: Research, higher education, Jordan

Introduction

Education, in general, and higher education, in particular, contribute to the ability of citizens to participate effectively in public life. It also helps them to obtain social and professional mobility and achieve personal and

national goals in an international context. The dream of most educators is to produce citizens capable of lifelong learning, who will be part of a world of harmony, justice, and comprehensive peace based on mutual respect of people for one another.

This therefore suggests that educational research began as a branch of psychology at a time when psychology was still a part of philosophy. Thus, many of the social and behavioural sciences that form the disciplinary core of educational research themselves have struggled to attain a sense of unity as a community of investigators (Wilson, 1998).

One of the important components that ensures the development and progress of a country is the higher education system. Education, in general, and higher education, in particular, contribute to the ability of citizens to participate effectively in public life. It also helps them to obtain social and professional mobility and achieve personal and national goals in an international context. Research in higher education represents most of a country's aspiration for progress and in building a better future (Bin Tareef, 2008).

Higher education institutions must define their missions in concert with the overall aims and principles for development in their country. These missions should be translated into well-defined objectives, with allocation of the required resources and the establishment of concrete mechanisms to ensure adequate monitoring and evaluation of progress and achievements. Educational research provides a framework for developing goals, clarifying objectives, and evaluating and monitoring outcomes.

In many countries, concerns have been expressed about the merits of educational research. The findings of some studies that were conducted in UK point to low research capacity, tension between academics and practitioners, discontinuity, and lack of impact.

According to the scientific citation index, Arab States expenditure on research is among the lowest in the world. UNESCO figures indicate that Arab countries in general spend about 0.2% of GDP on research in any field. Arab countries spend approximately 0.07 of a dollar for each person, while Israel spends 385 dollars per person and Japan spends 601 dollars per person. Moreover, the results indicate that expenditure on Arab scientific research is lower than what is recommended by UNESCO or the World Bank (1% of GDP), and lower than what the Organization of the Islamic Conference has recommended for member states (Ghahaimah, 2001).

According to Atwi (2007), most of the obstacles and difficulties faced by scientific research in Arab universities are caused by the lack of political will to support scientific research. Also, this is because of the inability to move to the stage of international competition. Although, it of great

importance to scientific research, it is hindered by the conviction that there are many obstacles facing scientific research.

A study conducted by Zubova, Andreeva, and Antropova (2009) was aimed at identifying the trends of graduate students in Russian scientific research, and their desire to perform and practice scientific research activities after the completion of their studies. It was discovered that more than half of the sample that was surveyed either wished to continue their studies, or planned to combine the continuation of their study and work. They said they wanted to work in scientific research activities rather than other work activities.

Jordan Overview

Higher education was initiated in Jordan in 1962 with the establishment of the University of Jordan. Since then, the numbers of universities and students attending has steadily increased. There are now 11 public universities and approximately 80% of high school graduates enter some form of higher education institution. Within the universities, in addition to academic faculties and departments, there are numerous specialized institutions, centers, and units which carry out and support research and training. In 1990, a new law on higher education was promulgated which opened the door to new private universities. At present, there are 16 private universities and another three which is still under construction. Research combined with postgraduate studies is conducted at universities while topically focused research generally without a training element is conducted by Ministerial and Governmental research centers. However, there are very few private research centers in Jordan.

Structure and Goals of Educational Research

The Arab States should act responsibly towards the whole educational system. Furthermore, they should actively participate in the improvement of education based on sound research, regarding the improvement of teacher skills as well as the curricula to foster greater professionalism. Research will be especially valuable by helping to improve low-performing schools and reduce dropouts. Research can also recommend appropriate educational approaches and policy alternatives. To be effective, close, continuous, and interactive partnership will be needed between education authorities and institutions.

Problem Statement

This study is a follow up on my previous research “Scientific Research in Jordanian Higher Education Institution: An evaluation of the Status and Obstacles.” It was conducted in order to assess the changes. It

was also done to evaluate the status quo and obstacles facing educational research in Jordanian higher education institutions in comparison to the scientific research results that we have obtained in 2008.

This study is aimed at identifying the status and obstacles facing education research in Jordanian higher education institutions. The long term goal of this project is to increase awareness among faculty members, researchers, and educational leaders regarding the necessity of improving research planning and strategies, professional development opportunities, working conditions, research financing, private sector support, research ethics and effectiveness, and to increase the number of qualified researchers.

The main questions of the study are:

1. What is the status of educational research in higher education institutions in Jordan as perceived by the deans and vice deans of the research-oriented departments?
2. What are the obstacles facing educational research in higher education institutions in Jordan as perceived by the deans and vice deans of the research-oriented departments?

Significance of the Study

- This study will provide important information to university administrators and faculty members as well as government policy-makers regarding the current status and some obstacles facing educational research. Since educational research is important to improving higher education, this study has broad relevance to improving education in Jordan and may be applicable to other developing countries. Specifically, this study may:
 - a. Provide the Jordanian higher education institutions with information on the status and the obstacles facing educational research.
 - b. Serve as an essential guide to help develop new policies and strategies for educational research in Jordan.
 - c. Lead to new research in different types of institutions in Jordan.
 - d. Serve as a reference for other developing countries that have a situation similar to Jordan.

Limitations of the Study

This study has the following limitations:

For the Interviews

It was limited to the deans and vice deans of the scientific research departments. All public and private universities were interviewed.

For the Survey

It was limited to the faculty members of the University of Jordan.

Time

It was done for the academic session of 2015-2016.

Place

Jordanian higher educational institutions

Literature Review

The following literature review is intended to provide additional insight into the status as well as obstacles of scientific research in institutions of higher education.

Al-Furaih, and Al-Shayji (2005) Conducted a study on “Obstacles Encountered by Faculty Members at Non-Science Colleges at Kuwait University in Sponsored Projects of Scientific Research”. The study aimed at identifying the most important obstacles facing sponsored research at Kuwait University. A questionnaire consisting of 29 items was designed to solicit the opinions of members of staff at the non-science colleges with regard to three types of problems, namely administrative, technical and personal. These colleges included Education, Social Sciences, Administrative Sciences, Law, Sharia and Islamic Studies, and Arts. Results of the study indicated that the major obstacles were inherent in the excessive number of procedures that reduce incentives to apply for funding. The second type of obstacles were technical, namely the inadequacy of qualified research assistants. The final type of obstacles dealt with inadequate time for research because of faculty members’ administrative duties and teaching assignments. In the light of these results, the study provides a number of recommendations that could reduce the obstacles for funding of research in higher education.

Griffith (1997) quotes the Dean of the College of Arts who describes academic research in organizations as oftentimes being “crap.” Griffith considers the comment as summing up the needs of administrators and says that most research is based on simple-minded theories, and research findings are not user friendly.

The South African Academy of Science (2006) reported on research publishing in South Africa and suggested that increase in publishing may be an example of a country “pulling itself up by its bootstraps” and contributing significantly to global issues underlying science in the modern era. This work is particularly interested in the crucial issue of whether developing countries “can be more than passengers on the 21st Century train.”

Stydom and Fourie (1999) conducted a study titled “Higher Education Research in South Africa: Accomplishment, Circumstances, and New Challenges,” which was aimed at presenting a historical point of view

regarding the evolution of studies of higher education in South Africa. The study results indicated that the political agendas limit the content and methods of scientific research in South Africa. It also showed that there are current and future topics that need to be specified as part of the transformation process, not only for the purposes of higher education research in South Africa, but also for the good of the society.

Jaradat (2002) Conducted study to recognize the reality of scientific research in the outlook for official Jordanian University in Jordan, the study population consisted of all faculty members of assistance professor and professor of the University of Jordan and Yarmouk University, the study was applied to a random sample of (438) by 50% the result showed that universities function of scientific research relatively acceptable degree lead despite the shift quality experienced system of education but it did not reach the desired level, which is associated with much importance to the role of research in development and to update various aspects of community activities, and did not rise to the level of community service. In addition to building objectives policies and programs for the development of scientific research in the universities the needs of the community and economic development plans.

Kanan (2001) Conducted a study to find the obstacles facing scientific educational in Arab World institutions The sample studied consisted of all the faculty members of the educational college at Damascus university also to find if the scientific educational obstacles attributed to gender or experience. The results showed there were statistically significant variables in the scientific educational obstacles that can be attributed to gender and experience in favour of female.

Lang, Michael (2003) conducted a study on “Communicating Academic Research Findings to Informing Science (IS) Professionals: An Analysis of Problems”. Since research findings often do not have direct or immediate relevance to IS professionals in industry, the question arises as to how these findings should be disseminated to them. Lang essentially argues that the traditional mechanisms through which academic researchers disseminate their work are prone to numerous communication breakdowns, and that much work which could potentially make valuable contributions to practice is haplessly lost within the vaults of academia. Using the well-known Shannon and Weaver communication model, he analyzes three major problems: the choice of dissemination channels, language barriers, and the alienation of academia from industry.

Pan Maoyuan (2007) in his study pointed that we must improve research in higher education. He summarized the needed activities for teaching and research centers. This included the leadership of faculties, the tasks and activity contents of teaching and research sections, and the

relationships between schools and society and between schools and production departments.

Delaney (1997) investigated the role of educational research institutions in facing the future challenges of the twenty first century and indicated that researchers and institutions need to be better prepared to meet the future challenges in higher education.

Merrisey and Susan (2008), in a survey conducted by the United States Department of Health and Human Services Office of Research Integrity, revealed that a significant number of cases of research misconduct in academic laboratories go unreported each year. According to the survey, 60 percent of the cases cited involved fabrication and falsification and 36 percent involved plagiarism.

Methodology and Procedures

The study includes two types of research. The first used qualitative research with interviews.

Interviews

Population: Vice presidents for academic were 27, deans of scientific research departments were 27, and vice deans were 27.

Sample: The study used all population which equaled 81.

The second used quantitative research with survey.

Survey

Population: This includes all the faculty members at the University of Jordan which equaled 1390.

Sample: This includes a percentage 10 percent of the population which is equaled to 139.

Instrumentations

Two instrument approaches were used in this study:

Qualitative Interview Design 1-

2- Quantitative Survey Design

Interview

The interview was based on qualitative interview design.

The researchers conducted the following steps for the interview:

Preparation for the Interview: This stage is important in order to maintain an unambiguous focus as to how the interview will be conducted in order to provide maximum benefit to the proposed research study.

The researchers applied McNamara (2009) eight principles to the preparation stage of interviewing which are: (1) choose a setting with little

distraction; (2) explain the purpose of the interview; (3) address terms of confidentiality; (4) explain the format of the interview; (5) indicate how long the interview usually takes; (6) tell them how to get in touch with you later if they want to; (7) ask them if they have any questions before you both get started with the interview; and (8) don't count on your memory to recall their answers.

Standardized Open-Ended Interview was used in the study.

Pilot Testing: This was conducted with participants that have similar experiences and interests with those that will participate in the study. It assisted the researcher in determining the flaws, limitations, and other weaknesses within the interview design. After, the researchers made necessary revisions for implementation in the study.

Implementation of Interviews

The researchers implemented the following steps in the interview:

Ask one question at a time.

- 1- Attempt to remain as neutral as possible.
- 2- Encourage responses with occasional nods of the head.
- 3- Be careful about the appearance when note taking.
- 4- Provide transition between major topics.
- 5- Don't lose control of the interview.

Survey

The survey was based on quantitative survey design.

Having reviewed all interview results and some literature, the investigators prepared an initial questionnaire containing 64 items. This questionnaire was referred to an 18-member committee of referees who were asked if the items of the questionnaire would effectively assess faculty members' attitudes and if the phrasing was appropriate. After receiving the committee's suggestions, the questionnaire was amended and finalized. Fifty items were retained. This fifty items (five likert scale type) questionnaire has been used to measure faculty attitudes towards the status and the obstacles of scientific research in higher education in Jordan.

Validity

The procedure undergone in developing the questionnaire is considered as an evidence of content validity. The aim of the interview was to gather information on the variety of themes that occur in the academic scientific research:

- a. What is the status of scientific research in Jordanian higher educational institutions?

- b. What are the obstacles of scientific research in Jordanian higher educational institutions?

Reliability

To ensure consistency in responses to the questionnaire, it was applied to 22 former deans. Three weeks later, it was applied again to the same group. The test – retest reliability coefficient was calculated to be 0.84 and the alpha internal consistency coefficient was found to be 0.87.

Findings

Interviews were conducted with vice presidents for academic, numbering 27, the deans of scientific research departments, numbering 27, and the vice deans, numbering 27.

The interviewees were asked two main questions.

- A- What is the status of research in Jordanian higher educational institutions?
- B-
- C- Table1
- D- The means and standard deviations for the scientific research status as
- E- The responses of the interviewees
- F-

The themes of scientific research status	Mean	Standard deviation
Research objectives	2.88	0.79
Research planning	2.96	0.82
Research incentives	2.80	0.68
Research support	2.76	0.99
Research content	2.85	0.30
scientific research status	2.19	0.79

As showed in table 1 the scientific research status mean was 2.19 and that was low result, also the themes have almost the same results where the research planning got the highest among the themes and the research support the lowest.

- B- What are the obstacles of scientific research in Jordanian higher educational institutions?

The interviewees indicated the following issues:

- The decline in Jordanian higher educational scientific research is as a result of the lack of resources along with the abuse of those available.
- The lack of a motivation for research.
- The lack of a strategic plan for research.
- The poor economic condition of university staff.

- Jordanian higher educational scientific research is characterized by a decrease in funding.
- A very sensitive issue, which affects the productivity of research, is the ethics of research. The lack of procedures for monitoring research leads to plagiarism.

Consequently, we can summarize interviewees' responses as follows:

A- The responses of the interviewees were structured and agreed around five themes in Jordanian higher educational scientific research status: 1-research objectives, 2- research planning, 3- research incentives, 4- research support, and 5- research content.

Table1 The means and standard deviations for the scientific research status as
The responses of the interviewees

The themes of scientific research status	Mean	Standard deviation
Research objectives	2.88	0.79
Research planning	2.96	0.82
Research incentives	2.80	0.68
Research support	2.76	0.99
Research content	2.85	0.30
scientific research status	2.19	0.79

As showed in table 1 the scientific research status mean was 2.19 and that was low result, also the themes have almost the same results where the research planning got the highest among the themes and the research support the lowest.

B- The responses of the interviewees were structured and agreed around eleven themes in scientific research obstacles: 1- research policy, 2- research management, 3- working conditions, 4- financing, 5- ethics of research, 6- doing research for academic promotion, 7- doing research for developing human knowledge and enjoyment, 8- services and facilities needed for research, 9- private sector support, 10- professional development associated with research, and 11- effectiveness of research findings in practice.

Table2 The means and standard deviations for the scientific research obstacles as
The responses of the interviewees

The themes of scientific research obstacles	mean	Standard deviation
Research policy	3.19	0.78
Research management	3.12	0.65
Research financing	2.35	0.80
working condition	3.10	0.83
Effectiveness of research findings in practice	3.00	0.87
Professional development associated with research	2.89	0.76
Services and facilities needed for research	2.60	0.81

The ethics of research	2.20	0.79
Private sector support	2.20	0.66
Doing research for developing human knowledge and enjoyment	2.00	0.62
Doing research for academic promotion	3.70	0.81
Scientific research obstacles	2.87	0.69

As showed in table2 the scientific research obstacles mean was 2. 87 and that was low result, also the themes have almost the same results while doing research for academic promotion got the highest among the themes and doing research for developing human knowledge and enjoyment the lowest.

The Survey

Analysis of the data collected from the faculty members at the University of Jordan yielded the following:

Table 1. The means and standard deviations of the scientific research status as perceived by faculty members.

The themes of scientific research status	Mean	Standard deviation
Research objectives	2.89	0.79
Research planning	2.96	0.82
Research incentives	2.70	0.78
Research support	2.30	0.99
Research content	2.85	0.30
Scientific research status	2.16	0.69

As shown in table 1, the scientific research status mean was 2.16 which was low. Also, the themes have almost the same results, where the research planning got the highest among the themes and the research support the lowest.

Discussion, Conclusion, and Recommendation

This study findings are similar to the findings of other studies [Kanan (2001), Al-Furaih and Al-Shayji (2005), and Academy of Science of South Africa (2006)].

We can conclude from the results of the interviews and the surveys that the status of scientific research is very low, even though the management and policy were average. Nevertheless, it would not be enough when research financing and working conditions are low.

One of the most pressing higher educational scientific research problems is the system of promotion, which is essentially based on research and the publication of results in journals. Promotion at all levels is almost automatic. The progression moves from lecturer to assistant once the PhD program is completed. Promotion depends on tailoring research to state-imposed standards rather than increasing knowledge in the field. Once a

scientist has become a professor, no other academic promotion opportunities exist and there are no mechanisms for monitoring both research and teaching. Therefore, most professors stop doing research once they get the promotion. In fact, they usually speak about their intent to stop research after getting the promotion.

The poor training of the research personnel is one of the key factors – if not the most important one – responsible for deteriorating research quality in Jordan. This is attributed to Jordan's educational system, which is far from satisfactory. Within this system, research methodology and statistical analysis courses are barely given at the bachelor level and only one or two courses at the graduate level. In short, there are very few opportunities for research training experiences.

The factors resulting from this study has led society to this current scientific level, which hinders the researcher and limits his or her scientific productivity. The following are some of these difficulties:

- Shortage in financing and funding.
- No attention is given to the Arabic researcher.
- The political system and atmosphere.
- Absence of clear scientific policies and strategies.
- The system of promotion and the lack of procedures for monitoring research lead to plagiarism

Furthermore, we can add more reasons for the decline in scientific research in Jordanian higher education. The lack of a clear government policy and a deficiency in highly qualified academic staff are among the main reasons for the qualitative decline in scientific research. In addition, the limited research environment (funding and facilities) and the lack of a strategic plan for research within the university have also caused deterioration in research. The intimidation of university professors, who were prevented from pursuing practices to ensure academic freedom have led to a decline in the quality of teaching staff and immigration of qualified researchers. All this calls for urgent actions to improve the quality of Higher Education (HE) and scientific research in Jordanian universities. Thus, it is not a novel proposition that improving quality will require financial expenditures.

Required investments include increasing salaries, improving research facilities, improving research freedom, and enhancing teaching and research capacities.

This reduces immigration and work seriously to retain them and create a quality and appropriate life for them.

It is difficult to be innovative in recommendations for improving Higher Education (HE) and research in Jordan. This issue has been frequently discussed in numerous local and international reports.

The two main suggestions are increasing the budget for Higher Education (HE) and support for other Science and Technology Development Indicators in the Arab Region, as well as improving the professional quality of both the teaching and research staff in the university.

Universities can attain a high level only with highly qualified academic staff, which should be addressed by a reform in the educational system. One of the surest ways to improve universities and their teaching of science is through a system of accreditation that monitors and ensures quality. Jordan is adopting a privatization program for the higher education sector and an increase in the private sector's demand for research and development is expected. Research in universities should be directed toward the country's needs for growth and development and to involve the private sector in financing the research.

The standards and mechanisms for monitoring the ethics of research should be established, particularly plagiarism, which already crosses country borders and has become not a local but a worldwide problem. Therefore, it should be dealt with according to international rules and regulations.

In disseminating scientific research, participating institutions must ensure high quality dissemination to relevant universities.

The academic staff is the backbone of the university. If this staff is not weeded out, the university will decline. However, the university system allows anyone, once appointed as demonstrator, to continue until he/she becomes a professor without any additional selection criteria. This contributes to a decline in the quality of university staff. Universities should only employ highly qualified academic staff and any reform should address the issue of how to improve the level of the academic staff in a university.

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