

A Conceptual Plan for Developing Innovation Skills in Educational Research at King Abdulaziz University, in view of Global Competitiveness Standards

Dr. Aziza Abdullah Tayeb

Department of Educational Administration–Institute of Educational Graduate Studies-King Abdulaziz University-Jeddah-Saudi Arabia

Abstract

Investment in University education is an important trend to achieve excellence in education and research outcomes according to global competitiveness standards. In this context, a particular emphasis is given to educational research due to its importance in developing educational practices that ensure proper knowledge acquisition, production and employment. This trend was reflected in Saudi Arabia through its 2030 vision, which stressed on transformation and change to a knowledge-based society, and worked on it through its Universities, among which King Abdulaziz University is of prime importance. Therefore, the goal of this study was to review the status of educational research in King Abdulaziz University, and propose a conceptual plan to develop innovation skills in it. A descriptive analytical method was applied, using a questionnaire prepared based on the literature on global competitiveness standards. The results showed a weakness in innovation skills in educational research of University educationists, and the presence of many constraints and challenges facing it. It was recommended that the University should increase its attention to innovation in educational research in light of global competitiveness standards, and proposed a conceptual plan to achieve this.

Keywords: Global competitiveness, Educational research, Innovation, King Abdulaziz University.

تصور لخطة لتطوير مهارات الابتكار في البحث التربوي بجامعة

الملك عبد العزيز في ضوء معايير التنافسية العالمية

د. عزيزة عبدالله طيب

أ. مشارك الإدارة والتخطيط التربوي-معهد الدراسات العليا

التربوية-جامعة الملك عبدالعزيز-جدة-المملكة العربية السعودية

المستخلص

الاستثمار في التعليم الجامعي هو اتجاه هام لتحقيق التميز في نتائج التعليم والبحث وفقا للمعايير التنافسية العالمية. في هذا السياق، يتم التركيز بشكل خاص على الأبحاث التربوية لأهميتها في تطوير الممارسات التعليمية التي تضمن اكتساب المعرفة المناسبة والإنتاج والتوظيف. وقد انعكس هذا الاتجاه في المملكة العربية السعودية من خلال رؤيتها لعام ٢٠٣٠، والتي شددت على التحول إلى مجتمع قائم على المعرفة، وعملت على ذلك من خلال جامعاتها، والتي تعتبر جامعة الملك عبد العزيز ذات أهمية قصوى فيها. لذلك كان الهدف من هذه الدراسة هو استعراض حالة البحوث التربوية في جامعة الملك عبد العزيز، واقتراح تصور لخطة لتطوير مهارات الابتكار فيها. تم استخدام المنهج الوصفي التحليلي من خلال استبيان تم استنباطه من استقراء أدبيات معايير التنافسية العالمية. أظهرت النتائج ضعف في مهارات الابتكار في البحوث التربوية لدى التربويين في الجامعة، ووجود العديد من اوجه القصور والتحديات التي تواجهه. وقد أوصت الدراسة بأن على الجامعة أن تزيد من اهتمامها بالابتكار في البحوث التربوية في ضوء معايير التنافسية العالمية، واقتُرحت تصورا لخطة لتحقيق ذلك.

الكلمات المفتاحية: التنافسية العالمية، البحوث التربوية، الابتكار، جامعة الملك عبد العزيز.

Introduction

In view of contemporary global economic transformations, the ability of communities to compete depends on its treasure of knowledge and innovations, where Universities and research centers are the main hub towards building a knowledge society, as there where, knowledge is produced and disseminated. Hence, the investment in supporting these institutions to improve its educational system toward achieving quality and excellence in innovation, research and knowledge production is becoming an important and modern trend in achieving excellence in accordance with global competitiveness standards and requirements. (Alrababah 2006).

Scope of research in Universities covers all scientific disciplines including education, which is of a particular importance as it is concerned with preparing individuals who are the intellectual capital in the knowledge society, through the development of proper educational practices that ensure knowledge acquisition, production and employment (Nassar 2015, 94). Also, Kearns (2004, 8) noted that "there is an increasingly urgent need to have an active role for educational research in supporting education reform to adapt to the changing environment, and meet the increasing impact of information and technology". No doubt, that for the educational research to fulfill its duty in providing the requirements of the knowledge society, it requires a clear vision and an appropriate infrastructure. This is in conformity to the UNESCO World Report that noted "societies that seek knowledge must have a clear future vision for development" (United Nations Educational, Scientific and Cultural Organization 2005, 132).

Literature Review

This section will review the literature of both global competitiveness, and innovation in educational research. In addition, as this study concentrates on King Abdulaziz University, this section will include a review of the status of research in Saudi Arabia.

1- Global competitiveness:

A- Concept:

Global competitiveness concept have emerged after the globalization phenomenon, global economic evolution, free world trading, and the technological advancements. It became of a major global concern, particularly after the beginning of publishing global competitiveness reports, which compares and rank the countries' competitiveness capabilities. These capabilities depend mainly on the countries' efforts and achievements in research and production activities, especially in higher education and innovation (Keser 2015, 59-60). This has prompted Universities to respond, as they have a major role in disseminating and applying research and knowledge in solving community problems. As a result, Universities worked hard to

adopt development plans and policies to restructure its administrative, academic, research, and community engagement programs to achieve the best possible quality standards (AlNajdi and AlAwadhi 2013, 15). Consequently, innovation and development became the focus of competition between higher education institutions in the current era, necessitating Universities to achieve the necessary standards, satisfy beneficiaries, improve innovative and creative capacity, and increase scientific production (AlNajar 2002). They also needed to reconsider their philosophy and policies in light of the surrounding variables (AlHalabi 2005).

Global competitiveness was defined as the ability to produce goods and services with good quality and right price at the right time (Organization for Economic Co-operation and Development OECD 2014). It was also defined as "the groups of factors, policies and institutions that define the country's productivity and determine its level of prosperity" (World Economic Forum WEF 2017). In University education, it was defined as the University's ability to provide high quality education and research that reflect positively on the level of its graduates and faculty, and give them the capabilities and competitive advantages in the labor market, and gaining the community's confidence and cooperation (Mustafa 2003, 11-15) (Ibraheem 2009). Also, it was defined by Diab (2010), as the ability of Universities to achieve and maintain a good quality of education, increased internal efficiency, and superb performance and outputs. In addition, it was defined by AlNajdi and AlAwadhi (2013, 8) as the graduate programs that achieve progress, superiority and preamble its graduates at competitive level in discovering, dealing and communicating innovations. Furthermore, it was defined as the abilities of Universities to competitively excelle in quality, administration, curriculum, faculty members, libraries, classrooms, equipments, training and research facilities, and in devising new training systems and programs, to cope with environmental developments (AlHoot and abdulmutalleg 2015, 135).

In light of the foregoing, global competitiveness is defined in this study as "improving graduate programs, faculty members and quality of educational studies and research programs, in order to positively affect the abilities to discover, deal with new innovations, boost the confidence of the community, and helps the University to obtain advanced positions in world rankings".

B- Global competitiveness criteria:

University ranking criteria include research indicators such as the number of publications in international journals appear in the citation index, English publications in peer reviewed journals, ratio of publications to faculty, publications in Nature and Science journals, number and level of postgraduate theses, number of internationally reviewed theses, number of international

prizes such as Nobel, and number of research citations. Criteria also include a set of indicators to measure academic standards such as quality of education, quality of teaching, research production, and the size of the institution (Hazelkorn 2009, 1) (AlKhalifa 2014, 23). Other competitiveness criteria are the source and level of faculty qualification and research, number of publications in prestigious journals, amount of scholarship grants, and the inclusion of new ways of thinking and innovation in curricula (Rust & Kim 2012, 16-17). In this context, AlSaleh (2012, 309) noted that the indicators measuring competitiveness in higher education institutions include global leadership, position in international rankings, number and type of scientific awards, academic reputation, number of patents, prizes, publications, number of international students, and demand for its graduates. Furthermore, the quality assurance and academic accreditation manual in Saudi Arabia have indicated the following standards for scientific research institutions and programs: institutional research policies, extent of faculty and students' participation in research, research marketing, and research facilities and equipment (National center for academic accreditation and assessment 2008, 27).

C- Requirements of achieving global competitiveness criteria:

AlRababah (2006) noted that well qualified human resources are an important requirement in achieving global competitiveness criteria, as they are responsible of planning, decision making, proper quality, excellent work at low cost, and production of innovative research and knowledge that benefit the society and improve Its competitiveness. In another study, AlSaleh (2012, 300-302) categorized the requirements to achieve a good performance in local and international competitions to the following:

- a) Interior requirements: A culture based on values of excellence, innovation, initiative, and empowerment, a leadership capable of attracting and motivating qualified staff to achieve innovation and creativity, and a distinct Infrastructure of laboratories, information resources and facilities.
- b) Research and knowledge production requirements: Linking research fields and resources to the community and its various production institutions through strategic partnerships, attracting endowments and scientific chairs funding, concentrating on international publishing in reputable journals, strategic alliances with governmental and private institutions, establishing business incubators, entrepreneurship, science parks, and applying knowledge administration parameters.

c) Human resources requirements: to provide human resources with skills of problem solving, cooperation, critical thinking, communication, work ethics, professional performance, and community responsibility. In the same context, AlKhalifa (2014) specified the requirements to improve and develop research in view of global competitiveness standards as the following:

- a) Effective management of University scientific research system to raise its competitiveness.
- b) Develop human resources to cope with the requirements of global competitiveness.
- c) Provide appropriate infrastructure of research databases, funding, environment, libraries, laboratories, and scientific journals.
- d) Provide a legislative framework to save rights, gives freedom, and facilitate researchers' work.
- e) Link scientific research system in Universities in proportion to the country's development plan.
- f) Support effective partnership with institutions national and international research centers in investing, marketing and application of scientific research.
- g) Build mutual trust between the research centers in Universities and institutions of the society.
- h) Organize conferences and regular meetings with community institutions to market research.
- i) Allow sufficient research time for faculty, and assess their research based on usefulness and applications.
- j) Produce joint interdisciplinary research in a teamwork style.
- k) Encourage publication in prestigious journals, and participation in international conferences.

2- **Innovation and educational research:**

A- **Educational research:**

Educational research is an important area of research in all Universities, as it deals with various disciplines related to human development to achieve sustainable development of the community. Despite this, studies showed that research productivity in natural science such as medicine, engineering and chemistry is massively more than the productivity of research in humanities and social sciences (AlKhalili 2010). In Saudi Arabia, for example, the proportion of educational research is low as compared to other area of research (Imam Mohamed Bin Saud Islamic University 2011). Further, the results of educational research are not properly applied in development of educational processes due to weak local educational periodicals, and the presence of a gap between educational process

executives and researchers (AlSulaymani and AlGefry 2000). On the other hand, some educational researches suffer many deficiencies in patterns and effectiveness (Baghagho 2004). In this context, Nashwan and AlKhazendar (2005) reported that educational researchers in Al Aqsa University in Ghaza do not follow modern trends in educational research, and the University will not be able to cope with globalization in all aspects of the educational process. And, AlKhalili (2010) identified several challenges confronting educational research in the Arab world causing its weakness. Likewise, Moawad (2010) identified some drawbacks in educational research especially in the master's and doctoral theses, in not providing practical or educational values, and making judgments without enough documentation.

B-Innovation in research:

Innovations are the fuel of economic growth in this era of knowledge-based economy. Thus, investing in innovations increase the capacity of institutions, and boost its prosperity and development (Correa 2012). Therefore, countries are putting innovation at the forefront of its development plans, and issuing policies to enhance the capacity of its institutions in this aspect (Aktas 2017). Innovation capacities are measured by the Global innovation index published annually since 2007. It is a key measurement tool for entrepreneurs, policy makers and others who want to follow innovation capacity of countries around the world, and monitor its economic growth, productivity and employment. Thus, it acknowledges the role of innovations as the engine of growth and prosperity, and highlight the need of developed and emerging economies to apply a broad perspective on innovation.

The global innovation index is calculated as the average of two indices: the sub index of innovation output that measures innovative outcomes in knowledge and technology, and the sub index of innovation input that measures the innovative activities in institutions, its human capital, infrastructure, market development, and business development (Obaid 2017). It also monitors policies of innovation, innovation teams' formation, active participation of youth in research and innovation, number of published research, number of patents registered, development and innovation activities, quality of innovations, ingenuity in presenting patents knowledge, and the spread of knowledge (Mohamed Bin Rashid Al Maktoum Foundation and the United Nations Development Program UNDP - Arab knowledge report 2014, 12-72).

In this context, an Arabic index for research development and innovation was established based on the economic and social characteristics in the Arab world. This indicator includes an assessment of the inputs of the political and legal environment, societal and economic research, infrastructure, spending on

research and development, human resources, sources of funding and development, it also includes an assessment of the outputs of scientific publications, patents, and innovation statistics (Research, development and innovation index 2015).

From the above, innovation is defined in this study as "the active participation of faculty in scientific research through participation in international research publications, development activities, obtaining patents, and participation in solving community problems".

C- Requirements for innovation in research:

Achieving excellence in research and innovation depend on resolve and determination in gaining experience, following new developments in knowledge, and linking these with continuous training. This will reflect in achieving excellence in teaching, supervision of postgraduate students' research, publications, active participation in conferences and community serving (AlBar and AlAttas 2006). Further, the following requirements for achieving research excellence in Universities were reported: (Fakhro (2009 ,123)

- a) Developing policies and strategies to activate institutional research on societal domain.
- b) Using advanced methodologies and techniques in implementing research projects.
- c) Attaining professional development programs of research personnel.
- d) Providing proper infrastructure for research such as financing, equipments and libraries.
- e) Boosting research opportunities in areas related to economic and social development, and linking it to productive and service sectors.
- f) Adopting a splendid reward system to excelle in research.
- g) Encouraging private and production funding of research and development activities.
- h) Establishing centers for the production of excellent research beneficial to the community, and production and services sectors.

D- Problems and challenges facing innovation and research in the Arabic countries:

Many Arabic countries face a number of problems and challenges in providing the appropriate environment for research and innovation (Mohamed Bin Rashid Al Maktoum Foundation and the United Nations Development Program UNDP - Arab knowledge report 2014, 12). Moreover, there is a limited publishing in international journals, low number of Arabic periodicals, and many of the research production in the Arab world did not address real development problems, as it was mostly theoretical and meant for promotion

purposes (Ali 2008). Universities also face challenges linked to the inability to invest its research findings, nor in reaching solutions of the local community problems (AlGasabi 2008, 8). Other obstacles are the absence of a supportive culture for scientific research and innovation, weak governance of scientific research institutions, absence of comprehensive policy to build integrated systems for research and development, and a weak funding and human resources (Mohamed Bin Rashid Al Maktoum Foundation and the United Nations Development Program UNDP - Arab knowledge report 2014, 107).

3- Status of research in Saudi Arabia:

Research is one of the priorities in Saudi Arabia vision 2030, aimed at shifting the national economy from dependence on oil to a knowledge dependent economy. Further, the government developed strategic plans to have a knowledge-based society took into consideration the development of the research systems in Saudi Universities in light of global competitiveness (AlKhalifa 2014, 13-14). Consequently, there has been a growing interest in research in Saudi Universities resulting in increasing the number of published research from about 1400 only in 2006 to around 9000 in 2013. Also, the ratio of high quality research papers grew by 85%. This was recognized in the Thomson Reuters report of the G20 countries in research and innovation, which showed that the Kingdom rate of research and innovation grows exponentially. Likewise, the Nature index 2016 for research reveals that Saudi Arabia showed the highest growth rate in high quality scientific research in West Asia, coinciding with the presiding of Saudi Universities' ranking in the Arab Universities rankings (Aramco 2016). This confirms previous studies which reported the presence of the following positive indications in terms of the future of scientific and technical research in Saudi Arabia (AlJalal, 2011):

- a) Investment and cultural support for the development of creative scientific environment.
- b) Proper overall planning includes a vision, a mission, methodologies, objectives, specific programs, initiatives, mechanisms, timetables, and performance indicators.
- c) Care to set up mechanisms to continuously follow and review execution of plans.
- d) Best use of the resources allocated to research, with quality standards and transparency.
- e) An effective and stimulating management able to formulate skilled teams in areas of strategic thinking, planning, research, and professionalism.
- f) Preparing research students capable of problems solving and analysis.

However, in spite of these positive signs, there are the following obstacles and weaknesses that face Saudi Universities in this aspect (AlSultan 2005), (AlThunyan 2008), (AlRrewily 2010) (AlSaleh 2014, 305-309), (AlKhalifa 2014, 24)

- a) Absence of clear strategies to direct, market and link research to national development plans.
- b) Low research budgets as compared to advanced countries.
- c) Lack of social awareness of the importance of research and its role in improving the development process of communities.
- d) Weak partnership with various community organizations to support research and establishment of joint research.
- e) Weak human resources working in Universities' research sectors.
- f) Lack of confidence in employing various research results in the community.
- g) Weak level of publishing in international journals.
- h) Weak achievements in international awards, innovations, patents, and prizes.
- i) Absence of any competitive strategy between Universities.
- j) Weak international ranks of most Universities.
- k) Limited time allotted for faculty to perform research.

Previous studies

AlBana study (2008): The purpose of this study was to detect impediments to creativity and innovation in University research and presenting proposals to address these constraints. A social survey method was used through a questionnaire distributed to 75 faculty staffs, and conducting interviews with seven of them. The study recommended the coordination between similar departments to develop serious common research plans, and to encourage teamwork in research to study community problems and devise solutions for them.

AlRrewily study (2007): The purpose of this study was to propose ways to develop research through studying the status and challenges of research. The study used a descriptive analytical methodology, and reached to the following results: keenness of Saudi Universities to develop research, limited partnership between the various Community institutions and Universities, high teaching load of faculty that limits their research time, and a complete dependence on the government in research funding.

AlSaleh study (2012): The purpose of this study was to examine the Competitiveness of higher educational institutions, and to propose a work plan to develop these institutions to meet the new requirements. The study also examined the status of governmental Universities in view of the proposed plan,

and showed that they face great philosophical and administrative challenges. The best way to meet these challenges is to raise the competitive capacity of these institutions locally and internationally. The study confirmed the need to have more awareness of the external and internal environmental variables and their effects, a strategic plan for partnership with production sectors, transformation towards building a knowledge based community, and concentration on developing competitive features and outputs capable of international competition.

AlNajdi and AlAwadhi Study (2013): The purpose of this study was to study the status of global competitiveness standards in the graduate programs in Gaza Universities from the viewpoint of its alumni. The study concentrated on the Islamic University and AlAzhar University as the venue for its field study, the sample consisted of 145 graduates of postgraduate education programs. It followed the descriptive analytical survey method using a questionnaire for data collection. The study recommended the need to deepen the research work of graduate students to achieve the excellence criteria, provide a supportive environment for diversity and innovation, and promote creativity and critical thinking for all sides of the educational process, and making graduate programs to play a central role in community development.

AlKhalifa Study (2014): The purpose of this study was to identify the vision and status of research system in Saudi Universities in light of global competitiveness, identify the most important requirements needed to develop the system, and propose mechanisms to achieve this in light of global competitiveness. A descriptive survey methodology were followed using a questionnaire applied to a sample of the faculty in five Saudi Universities. The study recommended the formation of an advisory board in each University from its faculty, senior staff and specialists from various community institutions. It also recommended the establishment of a national information observatory for research to provide data and information to researchers, advocating research chairs and centers of excellence for businessmen and community institutions, and the creation of a special fund to finance scientific research in Universities provided by the government and community institutions.

Abu Sa'da, Allam and Radwan Study (2014): The purpose of this study was to identify the most important requirements of competitiveness capacity in Egyptian Universities, and provide practical measures to attain it. The study used the case study methodology, applied to Mansoura University as a study model, through open interviews with University leaderships, and analysis of the available information on the University's website. The study recommended the need to increase spending on research, encourage and motivate faculty members for publishing and participation in national and international conferences,

provide research maps in each specialty, encourage interdepartmental research, and encourage foreign research translation as part of the scientific production of the faculty.

Research problem and questions

Various studies showed the presence of several weaknesses in educational research in Arabic countries, its insufficiency to meet the challenges, and lack of follow up with the rapid developments in the field. Further, Mattar and Faraj (2009) noted the presence of a deep gap between educational policy making process and the results of educational research, and the tyranny of politics in building educational policy and decisions regardless of whether educational research results support it or not. In addition, AlSakran (2010) noted that educational research in Arabic countries suffer a real crisis due to several challenges. Also, AlRaegi (2012) noted that many researches are not given the needed attention.

On the other hand, AlKafafy (2009) reported some draw backs in research planning skills in the masters students at King Abdulaziz University, and showed in another study some problems with statistical analysis in many master's research (AlKafafy 2010). Likewise, AlMughidi (2010) reported the following impediments to educational research in King Khalid University: poor planning, bureaucracy in governing the interaction between the University and the educational institutions, and the massive workload of the faculty.

The foregoing deficiencies in innovative educational research indicate the need to study these shortcomings and develop a strategy to develop it in accordance with the standards of global competitiveness. This is of importance especially in Universities like King Abdulaziz University that seeks academic accreditations and high international rankings (Tayeb and Zahid 2016, 178). Therefore, this study aimed at answering the following key question: what is the proposed scenario for the development of Innovation in educational research in light of global competitive standards in King Abdulaziz University? This was answered through answering the following sub questions:

1. What is the status of innovation skills in educational research among the study sample in light of global competitiveness standards?
2. What are the requirements and challenges of developing innovation skills in educational research at King Abdulaziz University In light of global competitive standards from the point of view of the study sample?
- 3- What is the proposed scenario for the development of innovation in educational research at King Abdulaziz University in light of the global competitiveness standards?

Study objectives

The study aimed to raise the institutional efficiency of educational research, develop faculty skills at King Abdulaziz University, and improve research services provided to the faculty. This was to attain the following objectives:

- 1- Determine the status of innovation skills in educational research at King Abdulaziz University in view of global competitiveness standards.
- 2- Determine the availability of innovation requirements in educational research at King Abdulaziz University in light of global competitive standards from the point of view of study sample.
- 3- Suggest a proposal for developing innovation skills required in educational research in the faculty at King Abdulaziz University.

Study Significance

- 1- Keep up with international developments and actual requirements for innovation in research.
- 2- Satisfy community need for distinguished researchers in education with the abilities to solve problems creatively.
- 3- Draw the attention of decision makers in Universities to the importance of innovation skills development in educational research, and the need to restructuring and design of educational research courses in view of global competitiveness.

Study limits

- 1- **Subject limits:** the status, the requirements and challenges of the innovation skills in educational research, and academic excellence awards.
- 2- **Spatial limits:** educational departments at King Abdulaziz University.
- 3- **Temporal limits:** the first semester of the academic year 2017-2018.

Study methodologies

- 1- **Study methodology:** Descriptive survey method.
- 2- **Study tool:** A questionnaire was extrapolated from the related literature on educational research. It consisted of four parts. The first part surveys the basic information of study sample, the second part surveys information on research and publication activity of the study sample, the third part was devoted to survey the opinion of the study sample on requirements challenges and constraints of innovation in educational research, while the fourth part was devoted to suggestions of the study Sample.
- 3- **Validity and Reliability of the study tool:** The validity of the questionnaire were assured by having it evaluated by seven panels. The reliability were checked using Alpha Cronbach coefficient, which showed a high reliability at (0.943).
- 4- **Study population:** faculty having educational degrees at the level of Assistant Professor and above in the education sectors at King Abdulaziz

University. Namely, Institute of educational post graduate studies (36 faculty), and the educationists of College of home economics (16 faculty).

5- **Study sample:** A random sample was selected from the study population after excluding the newly appointed faculty (6 faculty) as they are new in the University and may not have complete knowledge about the field of the study. The size of the sample was 18 faculty from the Institute of educational postgraduate studies and 14 faculty from the College of home economics. The sample distribution of the sample according to place of work was close, as it was 52.9% from the Institute of educational postgraduate studies, and 47.1% from the College of home economics. Also, the sample distribution according to academic rank of staff was equal to the expected distribution of scientific ranks in the University. As for the scientific specialties of the sample, it was comprehensive in including all educational specialties.

Results and discussion

- 1- **Answer to the first sub question:** The first sub question reads as: What is the status of innovation skills in educational research among the study sample in light of global competitiveness standards? The answer to this was deduced from the statistical analyses of the study sample answers to the second part of the questionnaire; the following are the resulted findings:
- a) **Number of publications:** Table (1) illustrates that the distribution of the sample in percentages according to their publications ranges from 8.8% to 38.2%. The highest percentage was 38.2% for the group published 11 researches and more, while the lowest percentage was 8.8% for the group published between 8 - 10 researches. This indicates that there is an interest in publishing, but it was also noted that 11.8 % of the sample do not have any publications, which is an alarming percentage especially that newly appointed faculty was excluded from the sample. Further, 26.5% of the sample published between 1-3 researches only, which is alarming as well, because it indicates low number of publications.

Table (1) Frequencies and percentages of the sample according to number of publications

Number of publications	Frequencies	Percentage
1-3	9.	26.5
4-7	5.	14.7
8-10	3.	8.8
11 And more	13.	38.2
No publications	4.	11.8
Total	34	100.0

- b) **Number of publications in international journals:** Table (2) illustrates that the distribution of the sample in percentages according to their publications in international journals ranges from 41.2% to 5.9%. The highest percentage was 41.2% for the group published 1-3 researches, while the lowest percentage was 5.9% for the group published 11 researches or more, it was also noted that 23.5% of the sample did not publish in international journals. These results indicate an alarming weakness in international publishing which is an important indicator in global competitiveness.

Table (2) Frequencies and percentages of sample according to number of publications in international journals

Number of publications	Frequencies	Percentage
1-3	14.	41.2
4-7	7.	20.6
8-10	3.	8.8
11 And more	2.	5.9
No publications	8.	23.5
Total	34	100.0

- c) **Number of publications in high impact international journals:** table (3) illustrates that the distribution of the sample in percentages according to number of publications in high impact international journals ranges from 52.9 to 0 %. The highest percentage was 52.9% for the group that does not have any such publications, while the lowest percentage was 0% for the group published 8-10 researches. These results indicate an alarming weakness in international high impact publishing which is an important indicator in global competitiveness.

Table (3) Frequencies and percentages of sample according to the number of publications in high impact international journals

Number of publications	Frequencies	Percentage
1-3	14.	41.2
4-7	1.	2.9
8-10	0	0
11 And more	1.	2.9
No There are	18.	52.9
Total	34	100.0

- d) **Number of publications in journals with English language:** Table (4) illustrates that the distribution of the sample in percentages according to number of publications in journals with English language ranged from 41.2% to 5.1%. The highest percentage was 41.2% for the group that does not have any publications in English language, and the lowest percentage was 5.9% for the group published more than 11 researches. These results indicate an alarming weakness in publishing in English language, which is an important indicator in global competitiveness.

Table (4) Frequencies and percentages of sample according to the number of publications in journals with English language

Number of publications	Frequencies	Percentage
1-3	9.	26.5
4-7	5.	14.7
8-10	4.	11.8
11 And more	2.	5.9
No publication	14.	41.2
Total	34	100.0

- e) **Number of theses supervised:** Table (5) illustrates that the distribution of the sample in percentages according to number of theses supervised ranges from 32.4 to 8.8%. The highest percentage was 32.4% for the group supervised 11 theses or more, while the lowest percentage was 8.8% for the group supervised between 8 – 10 theses. This indicate a good interest in supervising theses, but it is also noted that 20.6 % of the sample did not have any supervision, which is an alarming percentage especially that newly appointed faculty was excluded from the sample.

Table (5) Frequencies and percentages of sample according to the number of theses supervised

Number of theses supervised	Frequencies	Percentage
1-3	7.	20.6
4-7	6.	17.6
8-10	3.	8.8
11 And more	11.	32.4
No theses	7.	20.6
Total	34	100.0

- f) **Number of theses supervised that have been evaluated by international committees:** Table (6) illustrates that the distribution of the sample in percentages according to number of theses supervised that have been evaluated by international committees ranges from 64.7 to 0%. The highest percentage was 64.7% for the group that did not supervise any theses, while the lowest percentage was 0% for the group supervised 11 theses or more. These results indicate an alarming weakness in this regard, which is an important indicator in global competitiveness.

Table (6) Frequencies and percentages of sample according to number of these supervised that have been evaluated by international committees

The number of theses	Frequencies	Percentage
1-3	5.	14.7
4-7	3.	8.8
8-10	2.	5.9
11 And more	0	0
No Theses	22	64.7
Total	34	100.0

- g) **Number of theses supervised that been evaluated by committees outside the University:** Table (7) illustrates that the distribution of the sample in percentages according to number of theses supervised that have been evaluated by committees outside the University ranges from 44.1% to 2.9%. The highest percentage was 44.1% for the group that did not supervise any theses in this regard, while the lowest percentage was 2.9% for the group that supervised between 4-10 theses in this regard. These results indicate the weak participation or cooperation outside the University in this regard, which is an important indicator for competitiveness standards.

Table (7) Frequencies and percentages of sample according to the number of theses supervised that have been evaluated by committees outside the University

Number of theses	Frequencies	Percentage
1-3	10	29.4
4-7	1.	2.9
8-10	1.	2.9
11 And more	7.	20.6
No There are	15.	44.1
Total	34	100.0

- h) **Number of these or students' research published:** Table (8) illustrates that the distribution of the sample in percentages according to number of theses or students' research published ranges between from 47.1% to 2.9%. The highest percentage was 47.1% for the group that did not have any publications in this category, while the lowest was 2.9% published 8-10 researches in this category. These results indicate a weakness of publishing and student preparation, which are important parameters to achieve global competitiveness standards.

Table (8) Frequencies and percentages of sample according to the number of publication from theses or student research

Number of publications	Frequencies	Percentage
1-3	9.	26.5
4-7	5.	14.7
8-10	1.	2.9
11 And more	3.	8.8
No publications	16.	47.1
Total	34	100.0

- i) **Number of research and community participations:** Table (9) illustrates that the distribution of the sample in percentages according to number of community and research participations ranges between 55.9% and 0%. The highest percentage was 55.9% for the group had 1-3 participations, while the lowest percentage was 0% for the groups that did not have any participation and the group of 11 or more participations. These results indicate a weakness research and community participation, which is an important parameter to achieve global competitiveness standards.

Table (9) Frequencies and percentages of sample according to the number of research and community participations

Number of participations	Frequencies	Percentage
1-3	19	55.9
4-7	14.	41.2
8-10	1.	2.9
11 And more	0	0
No participations	0	0
Total	34	100.0

- j) **Number of University-funded research grants:** Table (10) illustrates that the distribution of the sample in percentages according to number of University funded research grants ranges between 50% and 5.9%. The highest percentage was 50% for the group that did not have any grants, while the lowest percentage was 5.9% for the group that had between 8-10 grants. These results indicate a weakness in research funding by the University, which is an important parameters to achieve global competitiveness standards.

Table (10) Frequencies and percentages according to the number of researches funded by the University.

Number of researches	Frequencies	Percentage
1-3	8.	23.5
4-7	4.	11.8
8-10	2.	5.9
11 And more	3.	8.8
No researches	17.	50
Total	34	100.0

- k) **Number of patents and awards of excellence:** Table (11) illustrates that the distribution of the sample in percentages according to number of patents and awards of excellence ranges from 67.6% to 0%. The highest percentage was 67.6% for the group that did not have any awards or patents, while the lowest percentage was 0% for the group that had 11 or more. These results indicate a weakness in distinguish research production, and perhaps a weak research skills. Both of which are very important parameters to achieve global competitiveness standards.

Table (11) Frequencies and percentages of sample according to number of patents and awards for excellence

Number of patents and awards	Frequencies	Percentage
1-3	7.	20.8
4-7	2.	5.9
8-10	2.	5.9
11 And more	0	0
No patents and awards	23	67.6
Total	34	100.0

- l) **Number of published books:** Table (12) illustrates that the distribution of the sample in percentages according to number of books published ranges from 47.1% to 2.9%. The highest percentage was 47.1% for the group that did not

published any books, while the lowest percentage was 2.9% for the group that published 11 book or more. These results indicate a weakness in scientific production, and weak research skills. Both of which are important parameters to achieve global competitiveness standards.

Table (12) Frequencies and percentages of sample according to the number Books published

Number of books	Frequencies	Percentage
1-3	12.	35.3
4-7	2.	5.9
8-10	3.	8.8
11 And more	1.	2.9
No books	16.	47.1
Total	34	100.0

From the above results, it can be concluded that in view of global competitiveness standards, there are several weaknesses in skills, research and innovation in educational research at King Abdulaziz University. There is a significant impairment in excellent research production, participation outside the University, in particular at international level. This affect negatively its international presence and competitiveness capacity in this field. These results are consistent with the studies of Alrewily (2007), AlSaleh (2012), AlNajdi and AlAwadhi (2013), and AlKhalifa (2014).

- 2- **Answer to the second sub question:** The second sub question reads as: What are the requirements and challenges of developing innovation skills in educational research at King Abdulaziz University In light of global competitive standards from the point of view of the study sample? The answer was deduced from the statistical analyses of the sample answers to section 3 of the questionnaire. The following are the resulted findings:
- a) Research and innovations requirement: Table 13 illustrates that the responses to the requirements parameters ranges from 1.63 to 2.26, with an average of 2.02 indicating, "Partially agree". The highest response was 2.26 for the parameter "Research and theses evaluation according to international standards", while the lowest response was 1.63 for the parameter "presence of a clear strategy for marketing research in Universities/colleges". It is also noted that none of the parameters' responses was "Agree", as the highest response among all parameters was "partially agree".
- Although these results indicate the good interest of the University Administration to promote research. Nevertheless, more attention is needed on

the following parameters to be able to achieve global competitiveness standards: participation outside the University both locally and internationally, investing and marketing of research results, having departmental research development maps in the view of the needs of the community, and providing access to skills and research requirements in education.

Table 13 Averages of sample opinions about the availability of requirements

Parameter	Average opinion (out of 3)	Opinion Interpretation
Appropriate research environment, libraries, laboratories, scientific journals, and equipment.	2.15	Partially agree
Budget allocated for research funding	2.0	Partially agree
Encouragement of interdisciplinary research	2.18	Partially agree
Encouragement of teams work in research	2.0	Partially agree
Research and theses evaluation according to international standards.	2.26	Partially agree
Presence of a clear strategy for marketing research	1.63	Disagree
Presence of a clear plan to encourage active participation in international conferences.	2.0	Partially agree
Presence of mechanisms to encourage publishing in high impact international journals	2.15	Partially agree
Organization of Conferences, seminars and meetings for marketing research in cooperation with the community	1.81	Partially agree
Development departmental research Map in light of community needs	1.73	Partially agree
Presence of a legislative framework to protect faculty rights against plagiarism	1.97	Partially agree
Presence of A Covenant of ethics of research.	2.19	Partially agree
Faculty training on research methods and mechanisms.	2.03	Partially agree
Establishing mechanisms for monitoring and evaluation of research and theses supervisors.	2.09	Partially agree
Provide sufficient research time for faculty members	1.88	Partially agree
Intensify research awareness sessions for the University and the community	2.07	Partially agree
Provide training workshops on international publishing of education research	2.15	Partially agree
Overall average of responses to "requirements" parameters was 2.02 (Partially agree)		

- b) **Research and innovations' constraints and challenges:** Table (14) illustrates that the responses of the sample to constraints and challenges parameters ranges from 2.0 to 2.67 with an overall average of 2.38 indicating "agree". The highest average was 2.67 for the parameter "absence of partnership with other

educational institutions”, while the lowest average was 2.0 for parameter “Negative view of the community towards education and teaching”.

These results indicate that there is a consent of having several challenges and constraints facing educational research and innovations in the University. This affirms the need of an increased attention from the University to solve the constraints and challenges that facing educational research to achieve global competitive standards.

Table (14): Sample opinions about research and innovations’ constraints and challenges

Parameter	Average opinion (out of 3)	Opinion interpretation
No enough time for research.	2.44	Agree
No linking of research with community developmental plans	2.35	Agree
No commitment to departmental research strategies	2.48	Agree
Weak researchers’ monitoring and evaluation mechanisms	2.24	Partially Agree
Poor faculty research skills necessary for innovation	2.17	Partially Agree
Limited budgets for research funding in the University.	2.54	Agree
Absence of research supportive culture.	2.30	Partially Agree
Absence of partnership with other educational institutions.	2.67	Agree
Research is subject to faculty personal judgment and views	2.41	Agree
Absence of futuristic vision and outlook.	2.42	Agree
Poor research and intellectual partnerships with educational community.	2.50	Agree
Negative view of the community towards education and teaching	2.0	Partially Agree
Overall average of the sample opinion on "obstacles and challenges" parameters 2.38 (Agree)		

- c) **Sample suggestions:** There were no suggestions from the sample on developing innovation in educational research in view of global competitiveness requirements. This may indicate a lack of interest and/or despair of the study sample of the possibility of any change in the status of research and innovation environment.

From the above results, it can be concluded that there is a significant lack of in the requirements of excellence in research and innovation in the educational field. In addition, there are many challenges and constraints, which the University should try to find solutions to it in order to reach to global

competitiveness standards. These results are consistent with the studies Alrewaily (2007), AlSukran (2010), AlNajdi and AlAwadhi (2013), AlKhalifa (2014), and Abosada Radwan and Allam (2014).

- 3- **Answer to the Third sub question:** The third sub question reads as: What is the proposed scenario for the development of innovation in educational research at King Abdulaziz University in light of the global competitiveness standards? The answer to that was inferred by extrapolation of the results of this study, the published literature, and the personal experience of the author as being among the education faculty in King Abdulaziz University. Accordingly, the following is the proposed scenario:

1- **Premises:**

- a) Achieving Vision 2030 of the Kingdom in higher education.
- b) Achieving the University vision to pursue global competitiveness, and complementing its achievements in the non-educational disciplines.
- c) Achieving global competitiveness standards of innovation, especially where deficiencies were found.

2- **Vision:** Creativity and innovation in educational research at King Abdulaziz University in accordance with global competitiveness standards.

3- **General objective:** To develop the skills and capabilities for innovation in educational research in light of global competitiveness

4- **Implementation elements and requirements:**

- a) A detailed study of the status of innovative achievement indicators in educational research at king Abdulaziz University according to global competitiveness criteria (Results of this study and similar surveys).
- b) Compare the present status with the global competitiveness standards to define requirements, challenges and difficulties. (Accomplished in this study).
- c) Putting procedural plans to develop comprehensively the educational disciplines at the University to provide requirements and overcome difficulties and challenges, such as:
 - Development of admission criteria in graduate education programs.
 - Develop and update education curricula.
 - Faculty Development and training.
 - Attract outstanding staff to work in educational programs.

- Approving attractive incentives for outstanding achievement and creativity.
- Increase international interactions in conferences, visits, theses supervision, and committees.
- Develop requirements for the use of English language in the work and study environment.
- Establish a specialized educational research center and provide its requirements.
- Link between educational research and community educational problems.
- Priorities educational research activities in a detailed road map that targets to achieve global competitiveness.

Study Recommendations

The University should increase its attention to educational research and innovation at the University to promote and achieve global competitiveness standards. In this context, the following is recommended:

- 1- The need to develop an integrated strategic plan including a futuristic vision to advance innovation in educational research to achieve global competitiveness standards.
- 2- Take actions to enable the provisions of requirements and overcome the challenges and obstacles facing the educational researchers.
- 3- Increase financial allocations for educational research and publishing
- 4- Approve strategic research plans in each department and faculty
- 5- Stimulate corporation between the University and other institutions in the community.
- 6- Stimulate research and intellectual associations between educationists in the community.
- 7- Associate educational research plans to the community development plans.
- 8- Motivate the educational publishing by approving incentives and prizes for excellent achievements.
- 9- Approve mechanisms for monitoring and evaluation of students ' research supervisors to reward distinguished international publishing.

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