Quality of Scientific Researches in Iraqi Universities and the great Challenges

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Abstract:

Scientific Research is a cornerstone for development of any nation around the World. QA and continuous improvement of the scientific research in Universities is fundamental to the mission of the universities and research institutes in the world. Computing and communications are becoming essential tools of science. Together, they make possible new kinds and degrees of collaboration among different disciplines. The fusion of computers and electronic communications has the potential to dramatically enhance the output and productivity of scientific researchers. A major step toward realizing that potential can come from combining the interests of the scientific community at large with those of the computer science and engineering community to create integrated, tool-oriented computing and communications systems to support scientific collaboration

The scientific research in Iraqi Universities faces many challenges that affect badly (in many important aspects) its progress and establishments. It is well known that Iraq is one country of the third World. Most of countries of this world have great shortage in the effectiveness of the Scientific Research in comparison with the status of Scientific Research of the developing countries. The failure of such effectiveness has many reasons. Most of them belong to the academicals higher education status in the third world countries. In Iraq the status has another different side effect that initiated since April 2003.

   This paper introduces the challenges affect the scientific research in Iraqi universities, and how it will be possible to redirect (orient) the scientific research to be with Quality Assurance (QA) and can be tested under the umbrella of ISO. Also the main effects of the Information Technology are discussed and their affect on the Scientific Research Quality Assurance.

جودة البحث العلمي في الجامعات العراقية والتحديات الكبيرة

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الخلاصة:

يعد البحث العلمي حجر الأساس لتطور أي أمة من أمم العالم. كما إن الجودة والتطور المستمر للبحث العلمي في الجامعات يعد الأساس لتطور ورقي الجامعات والأمم. ومن المعلوم إن تطور علم الحاسبات والاتصالات في العقود الثلاثة الأخيرة يعتبر من التقنيات العلمية المهمة جدا في تأريخ التطور العلمي. ولذلك فأن من المسلم به إن تداخل علمي الاتصالات والحاسبات قد أصبح وسيلة أساسية لإسناد عمليات الإنتاج البحثي في المؤسسات البحثية المختلفة في أنحاء العالم. ولذلك يمكن أن يكون الاهتمام بهذا الاندماج من المسائل الساندة جدا لتطور عطاء البحث العلمي في مجالات وتخصصات مختلفة.

يواجه البحث العلمي في الجامعات العراقية تحديات كثيرة، وهي تؤثر سلبا على تطور وتقدم هذا الجانب العلمي. وكون العراق من دول العالم الثالث والتي تعاني من نقص كبير في فاعلية البحث العلمي مقارنة مع الدول المتقدمة. ولذلك فأنه معروف جدا أن فشل فاعلية البحث العلمي في دول العالم الثالث يعود إلى أسباب كثيرة، ومعظمها يعزى إلى المؤسسات البحثية الأكاديمية. إضافة إلى ذلك فان العراق يملك سببا آخرا مضافا هو ما حدث بعد نيسان ٢٠٠٣ من أحداث أدت إلى تهديم البنى التحتية الساندة لمرافق البحث العلمي في الجامعات والمؤسسات الحكومية الأخرى.

توضح هذه الورقة التحديات التي تؤثر سلبا على البحث العلمي في الجامعات العراقية، وكيف تسبب هذه التحديات بالتأثير السلبي على جودة المنتج البحثي. وكذلك تتوقف الورقة على الإشارة إلى أهمية تكنولوجيا المعلومات وتأثيرها الايجابي على تطور نواحي عديدة في مسيرة البحث العلمي.

1. Introduction to Quality Assurance in Higher Education

   QA and continuous improvement of the scientific research in Universities is fundamental to the mission of the universities and research institutes in the world. Scientific Research is a cornerstone for development of any nation around the World. Quality Assurance (QA) means two things: 1) a system for evaluating performance as in the delivery of services or the quality of products provided to consumers, customers, or patients; and 2) a planned and systematic pattern of all actions necessary to provide adequate confidence that the product or system optimally fulfils customers or clients expectations, i.e. that it is problem free and well able to perform the task for which it was designed. The mechanism for the evaluation of the quality of scientific research, including the establishment of a continuous improvement process, is linked to the University's annual strategic planning process [5].

   QA system, as applied to scientific research, will be designed to ensure that the standards of performance match those generally accepted in higher education. This includes performance of the research institutions as well as students and graduates. Currently a little has been done in terms of establishing performance indicators or assessing the quality of universities (from this point of view) inside many countries of the third world, even some of these countries have good starting approaches for ensuring the QA of Scientific Researches or Higher Education .

Universities and Research Scientific Institutes are responsible for the quality of their research programs, and hence, they will desire to enhance the level of quality in their research programs. Students, generally, want Quality of learning programs that will enhance them to obtain useful degrees and good research results.

   There are two important types of dangers involved and facing the universities and institutions wish to improve the quality in the scientific research programs:

a) Dangers arise when senior staff members behave as if Quality doesn't matter.

b) Dangers arise if QA specialists behave as if Quality is the only important thing.

   Building a culture of Quality can help to resolve both of these dangers. To build such culture, every one must take ownership of enhancing Quality mechanisms and procedures in their own domains specialization field [2].

   Self Assessment is a key driver in the QA program to be implemented in Scientific Research Institutes of universities. It is central to the process of seeking Quality and improving Quality. This Fact leads universities to develop mechanisms to self-asses their programs that have been developed to correspond to the university's strategic scientific research plans. Scientific Researchers must assess their performance against the key performance indicators on an annual basis. The respective goals and key performance indicators will correspond to the level of research, learning, teaching and administrative levels of the person, group, office, or program being assessed

   The main aim of this paper is to introduce the current status, challenges faced the Scientific researches inside Iraqi Universities. And also it provides the possibility of orientation the scientific research to be of good Quality and tested under the umbrella of ISO.

The paper contains in addition to the section 1, other 6 sections. Section 2, summarizes the QA improvement programs for scientific researches, while section 3 provides the role of information technology in development of Scientific Researches. Section 4 introduces the scientific researches in Iraqi universities, and section 5 introduces the challenges affecting the scientific researches inside Iraqi universities. Section 6 provides the main propositions given by the author. Section 7 provides the conclusion.

2. QA Improvement Programs for Scientific Researches

QA of scientific research activities inside universities and scientific institutes may be improved via the following directions:

a) Systematic consideration of stakeholder views and benchmarking activities about the Quality of higher degrees by research and the research education support activities for candidates and supervisors.

b) Aggregation, analysis and interpretation of candidates' feedback about their perceptions of the quality of their research degree experience.

c) Examiners' ratings and comments on these submitted at the culmination of research degree candidacy.

The universities and their Scientific Research Institutes will take care about the following policies and procedures [3]:

a) The Quality evaluation of their higher degrees by research using candidate and stakeholder feedback, with benchmarking against best practice.

b) Quality performance monitoring of each program annually. This will include benchmarking against the Postgraduate Research Experience Questionnaire (PREQ) and other agreed research education.

c) Developing a schedule for comprehensive review and evaluation of research degree programs.

d) Performance monitoring of each research candidate annually.

e) Monitoring and Evaluation the resources and support activities for research degree candidates.

f) Evaluation the university provided professional development activities for supervisors.

g) Monitoring the timelines of completions and evaluate the outcomes of thesis examinations performance.

h) Monitoring the participation rates of candidates in targeted equity groups.

i) Monitoring the membership of the Register postgraduate Research Degree supervisors.

j) Scheduling of reviews and reporting of outcomes will form part of the university's annual planning and review process.

While the procedures can be summarized:

a)   Under delegated authority from Academic Board, Research Degree Committee (RDC) is responsible for establishing the Research Education QA Framework and for specifying Quality indicators, in coincidence with the university's strategic direction.

b)   RDC is responsible for advising the Corporate Planning Group (CPG) on the strategic priorities in research education.

c)   The evaluation of the Divisions/Institutes and Research Education Planning, reviewing, and providing feedback on required performance improvements.

d)   Divisions/Institutes will implements strategies to improve research education performance in subsequent corporate plans.

e)   RDC will asses on a regular basis the appropriateness and effectiveness of the Quality indicators in the Research Education QA framework.

3.   Information Technology and Scientific Research

The fusion of computers and electronic communications has the potential to enhance the output and productivity of scientific researchers. A major step toward realizing that potential can come from combining the interests of the scientific community at large with those of the Information Technology and engineering community to create integrated, tool-oriented computing and communications systems to support scientific collaboration. Currently, Scientific Researchers have sought computer-based tools and techniques for data gathering, storage, analysis, modeling, and communication, making use of both generic technology and the tools they have developed to meet their own, specific needs. These bottom-up efforts have been productive, but their implementation has been difficult: funding for tool development has been inadequate, tools have been deemed awkward to use, and the building of tools is regarded by most scientists as less prestigious than the direct conduct of research.

Although technology will never cause the unwilling to collaborate, it can facilitate collaboration among those who are motivated and can also make it more attractive to others. There is evidence that this is happening. One example is the phenomenal growth in the provision and use of services offered through the Internet, the global network spawned by federally funded research into computer-based communications and now used by millions of scientists, engineers, and educators. Through the Internet, researcher's access databases, share software and documents, and communicate with colleagues. The Internet has made collaboration among dispersed scientists practical, and it has been used for that purpose. Nevertheless, despite technological improvements, new tools, and guides, the Internet remains a somewhat primitive tool for collaboration, especially for those scientists who cannot enjoy or do not have the time for learning how to use it

4.   Scientific Research in Iraqi Universities

Scientific Research is a cornerstone for development of any nation around the World. However, economic difficulties will continue to inhibit the development of Scientific Research in the Iraqi Universities for indefinite future. At the same time, the Iraqi Universities should attempt to link research more closely with each other,

higher educational activities and industries, and develop competitive research funding programs that stimulates creativity among young researchers, and establish new bridges from various research laboratories in the Middle East to production activities [4]. The Iraqi Universities would focus in new, relatively inexpensive efforts on strengthen a few applied research institutions and centers of excellences that are financially integrated into the industrial sector and would raise the technological competitiveness of the region.

It is well known that the status of scientific Research activities inside Iraqi universities before March 2003 was more related to the needs of the community in it's different faces, either civil or military. This aspect was fully organized through good cooperation among all Iraqi Universities Scientific Research Institutes and the Different Iraqi Ministries, and Different other governmental Institutes. There was continues managed, monitored and fully funded research programs that help and support the finalizing of good results from the established research programs.

After April 2003, great damages were in the infrastructures of the most Scientific Researches Centers of the Iraqi Universities, and the Scientific Research Centers in the Research Institutes of other governmental Ministries. These facts effected seriously in the progress of the Scientific research Activities inside Iraqi universities. Also , the cooperation among all Iraqi Research Institutes were very rarely!. All these facts resulted in weak Quality Research activities.

5.   Challenges affecting the Scientific Research in Iraqi Universities

There are many challenges facing the scientific researches activities inside Iraqi Universities, especially after the April 2003. Since most of research infrastructures were destroyed or missed through the period of Iraq occupation since March-April 2003. These facts effects in very pad manner on the continuity or developments of the research activities. Such Obstacles or challenges can be summaries as fellows:

a- Funding Problems: It is fact that the scientific researches inside Iraqi Universities didn't supported in a well manner from the government. It is clear facts for all universities, that most of the research programs will not be financially supported by any governmental or private sector companies.

b- Strategies Challenges : It is known that the inexistence of clear strategies for scientific researches inside the universities in different researches fields, and the disconnection of the researches activities with the economical and security aspects of the country in addition to weak confidence in the capabilities of the national researching power cause great deviation in the main strategy needed to support and assist the national scientific researches.

c- Organizational and Management Challenges: The inexistence of Central Research Institutes that take care and distribute the management of scientific researches. And the ineffectiveness of the existing research organizations, and the deficiencies of the valid laws. And the incapability of making use of the other scientific researches activities in the well advanced countries , especially in planning and management and application of the research activities.

d- Information Technology Challenges: Such challenges can be summarized in the following different aspects, such as, The insufficient statistics , available data,

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effective uses of Internet access, Cultural Knowledge about what the Internet Access and opportunities can support the Research interests of the Research Staff. the national and international well prepared studies for all scientific researches activities, delay in publishing the good researches papers, and the insufficient make use of the results of scientific researches in application.

e- The independence of scientific researches activities in any level of organization in many scientific fields.

f- Un existence of the wish to applying the universities scientific researches in the practical fields in different production aspects.

g- Great Gap between the private sectors and the scientific researches centers and places inside universities.

h- Increase the number of weakly teaching hours relative to research hours for the academicals staff .

i- Unavailability of well organized research infrastructures inside universities.

j- No effective scientific relations with the International Scientific Research Groups.

k- There are no metric measures to evaluate the Research activities.

l- The Equality between the researcher ad not researchers inside universities considered as a dangerous challenge for the scientific Researches.

6. Propositions to Enhance the Research Activities inside Universities.

   This section will summarize some proposals that can be enhanced the capabilities of scientific research activities, such that:

a- Encourage the creation of research groups inside and outside the universities. This matter will encourage the researches from different disciplines and from different departments inside one university or outside the university to collaborate together for implementing good researches [1].

b- Establishing Scientific Researches Departments (colleges) inside Universities, and well organized Scientific Research Institutes Inside The Ministry.

c- Planning to put well known strategy for scientific researches activities for different levels and different purposes.

d-   Increasing the funding capabilities on the scientific researches, and take care of the moral financial requirements of the researchers, to assist them in implementing good researches.

e- Ensuring all the requirements and the equipments, and laboratories required to assist the research implementation in different applied fields.

f- Assisting the offering the required publications, and the suitable access to the International research institutes.

g- Facilitate the organizational and managements requirement related to scientific researches.

h- Enhancing the local governments to financially support the scientific research activities of the university belong to the city of this government.

i- Encourage and completely support the participation of the researchers in the famous international scientific conferences (related to his specialization).

j- Encourage and completely support the publication of the researches results in well organized and known international Scientific journals.

k- Proposing a suitable agreements among universities and governmental institutes for collaboration to solve the existing problems by the academicals researchers of the university. And also to encourage the university staffs to prepared a studies for helping to solve these problems.

l- Acquiring the young researchers to the scientific researches

7. Conclusion

Without adequate higher education and research institutions providing a critical skilled and educated people, no country can ensure endogenous and sustainable development. The Scientific Researches considered as a main tool to enhance the 3rd world to overcome their continues problems in many fields, like economy, health, agriculture, industry, environments, education, and etc. Hence well organized and fully supported and good quality scientific researches are considered as the heart of the developed countries to get an access to the progress in the daily live. For Iraqi Universities the considering the Realization of Some of Proposition will enhance the level of Scientific research and gives good Quality for such Activities

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