



Impediments to Scientific Research at Algerian University

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Abstract

Scientific research is considered one of the most important functions of the university, given its central role in advancing science and in the invention and development of technology. The progress witnessed worldwide in many developed countries has resulted from pioneering research conducted by research centres and universities. Despite the Algerian state's efforts since independence to develop scientific research, its outcomes remain far below expectations. This has prompted us to ask the following questions: What are the most significant impediments hindering the development of university-based scientific research in Algeria?.

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1. Introduction

All evidence and studies indicate the importance of higher education and scientific research in revitalising nations, enabling them to attain leadership and exercise control over the future because this goal requires a set of tools and elements, with scientific research and the effectiveness of higher education at the forefront. Investment in this field is unmatched by any other, for through this refined and civilised intellectual practice, nations can realise their overall ambitions, assume leadership, and affirm their existence.

Scientific research across various fields has become a necessity of contemporary life and a fundamental requirement for the development of societies and the achievement of comprehensive development. In recognition of this importance, Algerian University, as the foremost official institution for conducting scientific research, has sought to provide the necessary capabilities, resources, and an encouraging climate for conducting scientific research. Despite these efforts, scientific research still faces many difficulties and impediments, according to various studies. Most research outcomes do not serve society because they remain confined to library shelves. Through this study, we attempt to shed light on a set of proposed solutions to overcome the principal problems faced by scientific

research in Algerian universities by addressing the following points:

1. Definition of scientific research.
2. The importance of scientific research.
3. Development of scientific research in Algeria.
4. Impediments to scientific research in Algeria.
5. Proposed solutions for developing scientific research at Algerian University.

1- Definition of Scientific Research:

-Webster's Dictionary indicates that scientific research is "a process of investigating or testing facts with precision; it also involves a specific method or approach for examining facts, based on a set of standards and measures that contribute to the growth of knowledge" (Al-Omari Abu al-Naja, 2002, p. 15).

-Khadr defined it as "an organised intellectual process carried out by a person called the researcher in order to investigate facts concerning a specific issue or problem called (the research topic), by following an organised scientific method called (the research methodology), with the aim of reaching appropriate solutions for treatment or results that are valid for generalisation to problems" (Khadr, 1989, p. 16).

-It is also defined as “an organised inquiry aimed at adding knowledge that can be communicated and verified through scientific testing” (Al-Maghribi Kamel Muhammad, nd, p. 19).

-It has likewise been defined as “a directed scientific approach to reviewing specific facts, based on logical assumptions, in order to produce objective treatments for a defined problem with the aim of achieving required scientific purposes” (Suleiman Huda Muhammad, 1989, p. 16).

-Rabah Turki defines it as “the process of reaching a reliable solution to the problems facing the researcher through the organised and coherent collection of information, followed by its analysis and interpretation” (Turki, 1984, p. 15).

-It has also been defined as “the activity carried out in a systematic manner to investigate the facts of phenomena with a view to interpreting them, determining the relationships among them, controlling them, and predicting them, or introducing additions or modifications in various fields of knowledge in a way that contributes to their development and advancement for the benefit of humankind and enables it to build its civilisation” (Abdel-Samee, p. 31).

On the basis of the previous definitions, we conclude that the scientific research is as follows:

✓ A specific, organised, and purposeful scientific activity.

✓ It uses a scientific method or scientific approach.

✓ It aims to seek the truth.

✓ It is oriented towards solving a problem.

2- Importance of Scientific Research:

The importance of scientific research lies in the following:

-Being the only means for the advancement and flourishing of human societies.

-Humans can control nature and the environment and adapt to them by increasing their knowledge and understanding of various life phenomena.

-Providing a clear view of the reasons behind events, thus enabling control over them.

-Interpreting past events, controlling present events, and predicting future events.

-Supplying society with science and knowledge, disseminating it, and benefiting from it and its applied advantages.

-Acquiring knowledge across various sciences fosters their development and progress.

-Planning and formulating strategies in all aspects of life.

-The scientific life of both the student and the professor should be enhanced, as all modern educational policies emphasise this.

3- Development of Scientific Research in Algeria:

Scientific research emerged alongside universities and advanced as universities advanced. There is a near consensus among specialists that the earliest beginnings of scientific research were in German universities, which served as the first model in Europe, followed by other European and American universities. German universities occupy a leading position within various academic and global circles as a result of adopting planning and research policies, realising that the university's function is not confined to transmitting knowledge; instead, it must produce knowledge. University teaching staff were therefore required to undertake this task. Consequently, postgraduate doctoral programmes were established to activate the dynamism of scientific research within their universities.

The birth of the policy of scientific research and technological development in Algeria dates back to the 1990s, when the first Ministry of Higher Education and Scientific Research was established in 1971. In 1973, the Provisional Council for

Scientific Research was created, whose main task was to serve as a body that brought together researchers and academics in all specialities and sectors concerned with scientific research. This body was supported by the National Organisation for Research, which was established in 1974. In 1986, in light of the new social and economic data and the continuous increase in the number of researchers, a body was created under the Presidency of the Republic under the name of the High Commission for Research, which combined the tasks of both the Commission for New Energies and the Commission for Scientific and Technical Research. Despite the recorded shortcomings, this body performs its functions successfully.

In 1990, owing to developments in higher education and the growing role the university had to play, especially under the exceptional circumstances the country experienced at that time, the High Commission for Research was transformed into a delegated ministry for research, technology, and the environment. The tasks of this ministry were assigned to the Ministry of Higher Education through the State Secretariat for Research. A National Council for Scientific and Technical Research and intersectoral committees were also established, whose task was to promote, programme, and evaluate scientific research. In 1998, what is known as the

five-year plan project for 1998–2002 emerged, aiming to improve the situation of the aforementioned sector, as it focused on providing the means and capabilities necessary to develop scientific and technological research and to enhance its results, with the State assuming responsibility for supporting projects related to this aspect.

This period was also characterised by an increase in the budget allocated to scientific research from 0.2% of national income in 1997 to 1% in 2000. The laboratory system was adopted in 1999. To achieve these objectives, a delegated minister charged with scientific research was appointed to the Ministry of Higher Education and Scientific Research in August 2000. His main tasks consisted of the following:

- ✓ Preparing a national policy in the field of scientific research and technological development and working to implement it in coordination with other bodies and sectors.
- ✓ Preparing the financial budget for scientific and technological research and administering funding.
- ✓ Preparing a plan for the optimal use of national research and development resources.
- ✓ Preparing an annual report on the outcomes of scientific research activities

and presenting it to the National Council for Scientific Research (Kouidri, 2004, p17).

Although this programme enabled new dynamism to be imparted to research activities and improved their structure through increased mobilisation of human and financial resources, scientific research in Algeria did not reach the expected level by international standards. To address these shortcomings, amendments were introduced to the first five-year programme, and a second five-year programme for scientific research (2008–2012) was adopted. The most important new measures adopted were as follows:

- By developing and enhancing human resources, improving research conditions, and establishing measures that encourage researchers to valorise the results of their research, the participation of Algerian competencies residing abroad should be strengthened.
- Establishing new scientific research institutions with autonomy that ensures the achievement of their objectives, especially the Directorate-General for Scientific Research and Technological Development, which oversees scientific research activity.
- Strengthening external cooperation ensures the promotion and development of scientific research and the transfer of technology.

- Partnerships and cooperation with private-sector institutions, whether in terms of funding or research, should be achieved, and results should be placed at the service of society.

- A legal system related to exemptions from customs duties and value-added taxes for equipment should be established, and tax reductions for institutions that carry out research and technological development activities should be applied (Official Gazette, 2008, p. 4).

4- Impediments to Scientific Research in Algeria:

Hussein al-Taai believes that scientific research in the Arab world is characterised by a set of features, including the following:

- ✓ The weakness of a sound research environment for the scientific research system and the absence of an institutional framework with the powers and responsibilities of planning, supervision, funding, and coordination across various research centres.

- ✓ The absence of a sound strategy for the scientific research system in the Arab world, one that is based on a correct vision and specific policies that rely on objective, accurate, and rigorous evaluation and on declared goals to ensure research quality.

- ✓ The deterioration of ethical values in the preparation of scientific research,

alongside the absence of conscience and a weak research spirit.

- ✓ Deficiencies in laws and administrative procedures that contribute to providing an attractive environment capable of drawing researchers.

In Algeria, scientific research is characterised by a set of features that may be summarised as follows:

- ✓ Despite the existence of a considerable number of laboratories, research results remain unencouraging and do not find a way to inform others of their findings.

- ✓ Despite the expansion of the network of research centres and the increasing number of researchers, patents remain disappointing in relation to the hoped-for expectations.

- ✓ Additionally, there is no clear national strategy for research and development to achieve industrial and technological renaissance, which is similar to the experience of South Korea.

- ✓ To date, Algeria has not acquired a research and development institute with a global reputation (Kabbar, 2014, p.63).

On the basis of our review of a set of previous studies related to the topic and our modest experience in university teaching and in conducting scientific research, particularly academic research, we can classify the most important

impediments and problems faced by scientific and academic research into two main groups:

A- External impediments: The most important of these are as follows:

Financial and material impediments:

- Weak financial allocations to scientific research are in line with international standards.
- Weak funding management and poor administration of the financial budget allocated to scientific research.
- The absence of financial support from state institutions and the economic sector. The sectors entrusted with funding scientific research include the state, which is considered the principal funder, as well as grants from international organisations and bodies, such as UNESCO, and scientific partnerships between Algerian universities and universities in other countries.
- Specific problems related to weak equipment, such as a shortage of research laboratories and a lack of equipment within them, and weak coordination among these laboratories.

Political impediments:

- The dominance of the political dimension in directing scientific research, on the one hand, and the failure to employ the results of scientific research in preparing the

country's various development projects, on the other hand.

- The politicisation of research centres at all levels has reduced the margin of freedom they can exercise in scientific research (Aichour, 2006, p. 13).

- The prevalence of what are known as pressure groups on the university campus, resulting primarily from the linkage of the university and scientific research to the state, has led to a lack of freedom of expression and research (through the practice of censorship at multiple levels).

Administrative impediments:

- The complexity of Algerian universities' organisational structures and the overlap of roles hinder communication at various levels.
- The lack of a trained administrative apparatus (Mokadem, 1993, p. 99).

Scientific impediments:

- There is a shortage of scientific material in terms of sources, references, and statistics and a failure to keep pace with global developments and innovations.
- The separation of scientific research in Algeria from the applied domain and from society's problems, in some cases. The absence of coordination between the bodies producing scientific research and those consuming it, as evidenced by a review of students' research at Algerian

universities at both the master's and doctoral levels, shows that most studies are fictitious and invented by students and researchers to complete the research template (Al-Badri, 2012, p. 631).

B- Internal impediments: The most important of these are as follows:

- Weak scientific research skills among researchers are related primarily to selecting the research topic and formulating its plan, in addition to the presence of serious research motivation. The majority of completed studies are undertaken to obtain degrees and promotions rather than for scientific application. This may be attributed mainly to the reliance of university training on a stereotypical mode of rote instruction that does not open space for creativity and innovation; if such space exists, it is limited and achieved only through individual attempts rather than as an educational policy.

- The psychological pressures experienced by researchers include a sense of alienation within their society, the multiplicity of their social and economic problems, the burdens of daily life, and a kind of conflict among researchers due to a lack of trust .

- Scientific theft, meaning “the misappropriation of others’ ideas through dishonest نقل, verbatim نقل, or imitation without reference to the original author, following the ideas and research of others,

losing seriousness in research, and lacking the desire to add what is new or to bring about change” (Khadr, 1989, p. 32).

5- Proposals for Developing Scientific Research at Algerian University:

Following the above presentation of the reality of scientific research in Algeria and its most important impediments, we attempt to present a set of principal proposals that, in our view, constitute fundamental pillars for advancing scientific research and achieving the desired results from it:

- First: Preparing the general climate. There is no doubt that prevailing political, social, and cultural conditions profoundly impact development. If we consider this aspect, political activities often have a substantial and fundamental effect on the research process and, consequently, on the course of development. Accordingly, it has been necessary to adopt development strategies and programmes suited to the state's circumstances, on the basis of documented scientific research, to select the best strategies (Batouih, 2002, p. 310).

- Second, private funding for research projects should be encouraged because private capital is the primary driver of scientific research in the West, whereas research in our context still relies primarily on the state. This necessitates the involvement of new sectors in the financing of scientific research, including

the private sector (industrial institutions, local communities, etc.).

- Third, the status of scientists and researchers should be elevated through the efforts of the relevant bodies to provide full support for their scientists and researchers by improving their economic and social conditions so that they may devote themselves to discovery and creativity, trust in their efforts, honour those who excel among them, and consult them in the preparation of development projects, especially at the local level. This is in addition to the necessity of providing complete freedom for those responsible for and engaged in scientific research in our country and removing all obstacles facing researchers, whether material, moral, cognitive, or political (Kabbar, 2014, p. 306).

- Fourth, providing a suitable and encouraging environment for scientific research and innovation by adopting rewarding and motivating financial and moral incentives and bonuses that cover living costs.

- Fifth, establishing specialised bodies for scientific research instead of linking scientific research to universities affiliated with ministries, allocating a large budget to these bodies, and granting them complete independence to increase the level of scientific research and move away from administrative and financial routines

constitute a significant obstacle to the development of scientific research.

- Sixth, developing university administration, which contributes to eliminating the administrative bureaucracy prevalent within universities and thus facilitates the communication process for researchers and those engaged in academic research.

- Seventh: Proper preparation of researchers by instilling creative research qualities, which will be achieved only through developing curricula and course syllabi in a manner consistent with the age of technology and informatics.

- Eighth: Providing the books, scientific journals, and studies necessary to enrich research libraries and researchers' knowledge reserves while building a solid information network that serves as an information bank and a vast database made available to researchers.

- Ninth: Adopting a policy of valorising scientific research according to its originality and novelty, rewarding its authors and linking its results to the requirements of the market and society.

- Tenth, government institutions should formulate policies and develop plans through specialised scientific advisory bodies to help address the problems faced by academic research (Ali Abu Muhammad, 2012, p. 52).

Conclusion:

Finally, despite the state's efforts since independence to advance and develop scientific research, it still suffers from many shortcomings. It remains below global standards because of the challenges and impediments it faces at multiple levels. To change this bitter reality, it has become necessary to establish a strategic vision for developing scientific research in accordance with the requirements of national development by providing a set of conditions, including the following:

- ✓ The quality and number of staff members assigned to scientific research and development.
- ✓ The volume of financial envelopes allocated to university scientific research.
- ✓ The extent to which an appropriate scientific climate for creativity and innovation is available.
- ✓ Intensifying cooperation agreements with various partners to develop university research performance and valorise its results..

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