

Criteria for evaluating the quality of scientific research in Algeria -case study-

BEDOUI Samiya¹

Institut national de recherche en éducation, Maitre de recherche B

Etd_bedoui@esc-alger.dz

Received date : 29.09.2022 , Accepted date : 26.10.2022, Publication date: 15.12.2022

Abstract

The objective of setting up the quality assurance system in Algerian higher education institutions is to modernize the higher education system, including educational programs and scientific research. To support this system, a continuous evaluation system must be developed; this evaluation can be internal or external. Internal evaluation is called self-evaluation; it aims to follow the development dynamics of the different activities about the national reference.

This study aims to highlight the importance and effectiveness of the self-evaluation process in improving the quality of scientific research while presenting the EHEC School's experience in evaluating scientific research.

Keywords: Quality Assurance System, Higher Education, Scientific Research. Self- Evaluation, Quality.

Jel Classification Codes: I31,I23.

Introduction:

The university today is under pressure for change. It is called upon to redeploy because its contribution to the country's economic prosperity is essential. The role of universities in modern societies is widely recognized. They are supposed to create knowledge, improve equity, meet the needs of the community, and be more efficient in accomplishing these tasks. They are called upon to make a particular contribution to achieving the State's objectives in terms of growth, prosperity, and social cohesion.

In Algeria, the need of the economy for higher-level graduates is only growing and, consequently, the major concern of the higher education and scientific research sector is the establishment of a training system and efficient research. Awareness and reflection on this issue have spread in Algeria through international conferences and reference texts advocating the inevitable introduction of the quality assurance system in all Algerian universities, and this since the application of the LMD system in 2004/2005 promoting a philosophy of continuous assessment, quality, and mobility.

¹ Corresponding Author.

The research policy was timidly established within the business school after the establishment of research laboratories. Before, research was limited to the preparation of doctoral and master's theses for a purpose of more personal than general interest. In 2012, a quality assurance unit was structured, but the actions for evaluating or monitoring the functions of the school were not put into practice.

The quality of research requires the establishment of a culture of collective intelligence to ensure the sustainability of the system of continuous improvement of training and scientific production.

Indeed, the organization, the structuring, and the valorization of the knowledge constitute the strategic levers of development of the scientific research while maintaining solid relations with all the partners of the economic environment which for all that will contribute more to the insertion of our students in the socio-professional world.

In light of the new policy on quality assurance mechanisms, HEC piloted the self-assessment of the quality of scientific research for the first time. This operation requires responding to a set of well-defined quality measures in a flexible reference system that can be appropriated to the context being assessed.

This study aims to highlight the role of self-evaluation processes in improving the quality of scientific research. It is based on the following problem:

What is the role of the self-assessment process in improving the quality of scientific research according to the national quality standard?

To answer our problem, we divided this work into three parts:

1. The quality assurance system
2. The self-assessment process: what, how, why?
3. Assessing the quality of scientific research at the Ecole des Hautes Etudes Commerciales

II.1.The quality assurance system:

II.1.1.Definition of quality assurance:

Quality assurance is the set of planned and systematic activities, implemented within the framework of a quality system, and demonstrated as necessary to provide appropriate confidence that an entity will satisfy requirements through quality. (ISO8402, 1994)

A quality assurance system is a means put in place by an institution in the purpose of enabling it to conform to itself and others concerned that the conditions

have been put in place so that students can reach the standards that the institution had set (Lazar VLASCEANU and all, 2007).

II.1.1.Definition of quality assurance:

Quality assurance is the set of planned and systematic activities, implemented within the framework of a quality system, and demonstrated as necessary to provide appropriate confidence that an entity will satisfy requirements through quality¹.

A quality assurance system is a means put in place by an institution in the purpose of enabling it to conform to itself and others concerned that the conditions

¹ ISO8402, 1994, définition de la qualité , www.iso.org ,(consulted on 3/9/2022)

have been put in place so that students can reach the standards that the institution had set¹

II.1.2. Implementation of a quality assurance system in higher education:

Is an approach aimed at upgrading higher education institutions, by bringing them into line with standard standards in terms of teaching, research, organization, management, and evaluation² (Bakouche Sadek, 2015).

Defining QA objectives and means within the framework of a QA policy is the first step in implementing a QA system. These objectives must be in harmony with the objectives of the national HE policy. These can be cataloged in three main categories of objectives³ (MHESR, 2008).

- Quality control;
- Accountability/transparency;
- Improving practices

II.1.3. The Quality Assurance system in Algeria:

The implementation of the QA system in Algeria was done in several stages⁴ :

In 2008: A dense roadmap

The Ministry of Higher Education organized an international symposium on "QA in HE" with the aim of designing a roadmap for the implementation of a quality assurance model. Among the recommendations of this colloquium is the need to set up a national structure that will be responsible for implementing quality assurance in the sector (future CIQAHE) National Commission for the Implementation of Quality Assurance in Higher Education.

In 2010: The birth of two key bodies

- **CNE (National Evaluation Committee):** Its creation was provided for in law 08-06 of 23-02-2008, and the setting of its mission was well explained in executive decree n° 10-36 of 21- 01-2010. It is responsible for evaluating all the activities and actions of institutions in terms of governance, training, and research in relation to the objectives assigned to the institution within the framework of public higher education policy.

In 2010: The birth of two key bodies

- **CNE (National Evaluation Committee):** Its creation was provided for in law 08-06 of 23-02-2008, and the setting of its mission was well explained in executive decree n° 10-36 of 21- 01-2010. It is responsible for evaluating all the activities and actions of institutions in terms of governance, training, and research in relation

¹ VLASCEANU, L.,GRÜNBERG,L., and PÂRLEA,D.(2007).« Quality Assurance and Accreditation: A Glossary of Basic Terms and Definition», UNESCO-CEPES, Buchares.

² BAKOUCHE S.(2015),«l'implémentation de l'assurance qualité dans l'enseignement supérieur : Contexte et enjeux, »CIAQES.

³ Ministry of Higher Education and Scientific Research, (2008),« Quality Assurance in Higher Education between Requirements and Reality »,Minutes of the 03 workshops that followed the International Symposium.

⁴ LERARI,M.(2016),« l'assurance qualité dans l'E.S. Algérien», 2ème rencontre annuelle de l'initiative Academia le réseau des académiciens algériens sur l'assurance qualité à l'université concept et expérience internationales.

to the objectives assigned to the institution within the framework of public higher education policy.

- **CIQAHE (Commission for the implementation of a QA system in HE):** The creation and appointment of its members were by the decree of 31-05-2010. Its main missions (CIQAHE, 2016): Establish a national repository taking into account international standards, define a program for implementing the QA process in the establishments, and monitor the implementation of the QA process, etc.

In 2011: Designation of RQAs and creation of CQAs

At the request of the supervisory authority: Higher education establishments are called upon to:

- Appoint a Quality Assurance Manager;
- Create a Quality Assurance Unit;
- Put Quality Assurance on the agenda of their meetings by involving CIAQES;
- Support the action of the CIQAHE by taking charge of the groups and logistical support.

In 2012-2013: QAR training

In the two years, the ministry has devoted its efforts to training and animating the quality assurance managers and the members of the CIQAHE.

In 2014: The development of a National Quality Assurance Reference NQAR

The first reference was developed by the RQA under the supervision of the CIQAHE in January 2014, it includes all the norms and standards contained in references in the fundamental fields of training, scientific research, governance, and life. at the university, while emphasizing three other areas in particular, given their importance in the national context: "university infrastructure", "university-socio-economic environment relations" and "inter-university cooperation and mobility".

Table 01: components of the national reference of quality

Domains	Fields	References	Criteria	Proof
Formation (F)	7	23	49	108
Research (R)	3	17	32	55
Governance (G)	5	27	53	181
University life (V)	4	14	25	71
Infrastructure (I)	5	17	19	38
Relationship with ESE	3	11	19	40
Cooperation (C)	4	14	22	70
Total	31	123	219	563

Source: www.ciaques-MHESR.dz

In 2015: Dissemination, appropriation, and implementation of the NRQAHE

This year saw regional meetings for the presentation of the roadmap and the revitalization of the CAQs, the upgrading of the newly designated RQA, and the presentation of an approach for the implementation of the NRQAHE.

IN 2016: Novelties-advanced recorded

Among the novelties of this year:

- Appointment of a deputy director of evaluation and quality assurance;
- In September 2016: the first summer school dedicated to QA;
- The model of the establishment project in preparation for the MHESR takes into account the NRQAHE. This project will be implemented in 2019.

In 2017: Launch of the self-assessment process

Following the request of the supervisory authority in January 2017, higher education institutions are called upon to launch the self-assessment process according to the new national quality assurance benchmark.

III. The self-assessment process: what, how, why?

There can be no quality without an evaluation process. The evaluation itself improves quality. This is the basic principle of feedback. The establishment of a quality assurance system presupposes the establishment of an evaluation system. This evaluation can be internal or external. Internal evaluation is called: Self-evaluation.

III.1. What is self-assessment? :

Self-assessment is an “internal process at the institution implemented to analyze at regular intervals the level of quality of the institution. This process can in particular allow the verification of the positioning of the institution in relation to the reference system it has adopted. Self-assessment is also used to assess the dynamic progress of an institution's activities, taking into account its specificities and its environment¹.

The self-evaluation leads to the production of the self-evaluation report which is intended for internal use by the institution and which also serves as a reference document for the external evaluation process (CIEP, 2012)².

III.2. Conduct of the self-assessment process:

Whatever the method and organization chose, the self-assessment process must be formalized upstream and the methods of implementation must be known³.

To prepare :

- Information /formation of committee members (RAQ/CAQ);
- Establishment of a self-assessment committee ;

¹ BOUBAKOUR, F.(2016),« assurance qualité interne et Autoévaluation : des principes à la mise en œuvre», 4 ème session de formation des responsables d'assurance qualité des établissements d'enseignement supérieur, MESRS,p.7.

² CIEP,(2012),«Pistes méthodologiques pour la mise en œuvre de l'autoévaluation : Projet Aqi-Umed». <http://www.aqiumed.org>.

³ BOUBAKOUR, F.(2016),« assurance qualité interne et Autoévaluation : des principes à la mise en œuvre», 4 ème session de formation des responsables d'assurance qualité des établissements d'enseignement supérieur, MESRS,p.9.

- Delimitation of the scope of the self-assessment (areas to be considered and structures to be integrated);

Implement :Make an action plan and follow it, identify the actions to be taken, preparation of the questionnaires and the modalities of their administration, set deadlines (Gantt chart); preparatory visit, Carry out the planned action + Collect information, Analyze information, and write the report.

diffusion: Define the methods of dissemination (internally or externally), and carry out a review of the self-assessment operation.

III.3. Why self-assessment? :

Self-assessment is considered the pillar of the quality assurance procedure¹ :

- The purpose of self-assessment is above all to help the institution identify ways to improve its performance in its various activities;

- It constitutes a means on which one can rely to develop a quality culture within the institution;

- It makes it possible to take stock of the information available (evidence or indicators);

- It makes it possible to measure the gap between the actual situation and the ideal targeted by the reference (the objective to be achieved), the interpretation of this gap constitutes the heart of the act of evaluation.

IV-Methodology of the study:

We appropriate in our evaluation work the SWOT analysis grid in order to examine the internal and external factors related to the field of research within the school.

Indeed, in their research orientation, the actors will be equipped with a clear vision of the situation, which will offer them the possibility of maximizing the potential of the strengths and opportunities and of minimizing the negative impact of the threats and the weaknesses which weigh on the quality of training, research, and other services offered (consulting expertise, etc.). To do this we must carry out two types of diagnosis :

1-An internal diagnosis: which aims to identify the strengths and shortcomings of scientific research within the school, making it possible to detect contributing and disabling factors.

2-An external diagnosis: which aims to identify the opportunities and threats of the environment hindering the ability to meet socio-economic needs.

In order to measure the strengths, weaknesses, opportunities, and threats, we followed the following protocol: Data collection, Structuring of the information collected, Notation of the different fields, references, criteria, and evidence, and Evaluation and Analysis of the results. A graphic representation clearly visualizes

¹ LERARI M.(2016),« Guide de l'Auto-évaluation selon le référentiel national», CIAQES.

the situation of each field of the research area is developed by respecting the following notation method:

The applicability of the NRQAHE references or not applicability to the school of the dimension concerned (reference, criterion, and proof): the school is concerned by the reference or not.

V- Evaluation of the quality of scientific research at EHEC

V.1-Field 1: Organization, structuring, and development of scientific research

Scientific research is a crucial part of the teacher-researchers mission alongside their compulsory teaching and training duties (regulatory text). Indeed, the institution has made available to its research capital two scientific research laboratories, namely: the laboratory of management, innovation, and performance of organizations "PERMANAN" and the laboratory of marketing and information and communication technology "Marketic".

V.1.1-Reference R11: research priorities and the implementation of appropriate means

The school has not developed a mechanism for ranking research areas in order of priority for its development despite the fact that it has a large number of research supervision structures registered at the national level.

The school's research areas which are developed by the team leaders at the laboratory level and even those which are piloted by the heads of the CNEPRU projects are for the most part automatically related to their doctoral research theme.

V.1.2-Reference R12: steering and monitoring of research

As we have already clearly explained previously, the steering structures exist; but unfortunately, they have taken on a phantom character in their operation since the school was moved to Koléa. The regulatory mechanisms are in place, but the steering bodies do not properly ensure that the missions assigned to the development of research are properly carried out because all the members are disinterested not only by the distance from the institution but also by the poor conditions related to the management and immobilization of the financial means of the laboratories.

V.1.3-Reference R1 3: evaluation and internal strategic orientation of research

Research projects that are supervised and managed under difficult and even complicated working conditions and methods are only subject to an evaluation by the "MHESR" supervisory authority at the end of each period of their existence, which is 3 years for laboratories, and the old Cneprus and two years for the Cneprus created in 2015. The positive results of the school's laboratories.

V.1.3-Reference R1 3: evaluation and internal strategic orientation of research

Research projects that are supervised and managed under difficult and even complicated working conditions and methods are only subject to an evaluation by

the “MHESR” supervisory authority at the end of each period of their existence, which is 3 years for laboratories, and the old Cneprus and two years for the Cneprus created in 2015.

V.1.4-Reference 1.4. Dynamism and motivation of researchers :

The school does not have resources dedicated to improving the research environment (socio-economic living and working conditions). By staff accommodation. Unfortunately, until now the accommodations have not yet been allocated.

V.1.5- Reference 1.5. Establishment of a documentary base that meets the needs of researchers :

The school library has 8,004 book titles, 5,591 master's and magister dissertations, 12 doctoral theses, and 34 subscriptions to periodical titles.

The documentary base of the school library is regularly enriched according to the need that the teachers express through a proposal sheet. In addition, the library has a computer system allowing access to online documentary resources via "Scholar-vox" and also to the NODS (national Online Documentation System) and even A database accessible through the PDCO.(Public development and construction office)

But despite the efforts made, the library does not yet cover the needs of researchers in terms of their different lines of research. The library shows a strong lack of doctoral research work, and the dissemination of research work on the school's website has not yet been implemented. Nevertheless, the institution has adequate computer equipment for consulting the available documents.

V.1.6-Assessment of the coverage intensity of field R1 by these references

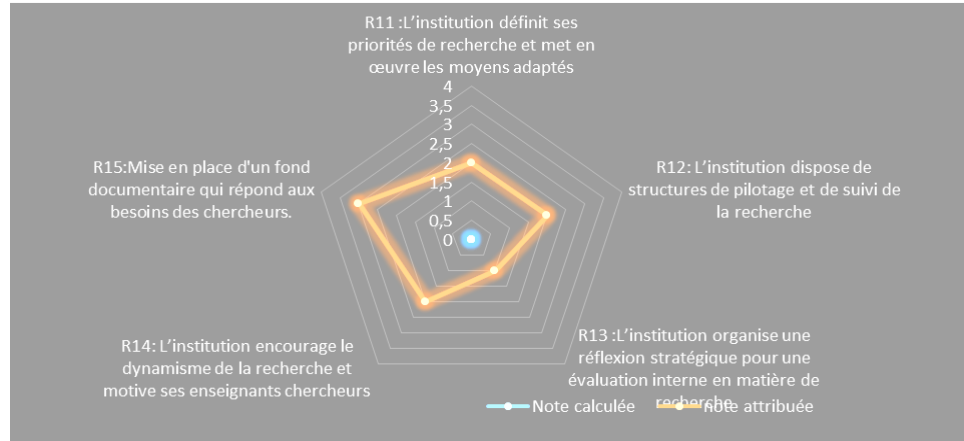
After having examined and analyzed the levers of development of the field of scientific research, and in particular, those which are related to the organization, the structuring, the priorities, the motivations, and the means allocated to research at the level of the HEC school, we have represented them using a hexagon to better illustrate the coverage intensity of the R1 field

Using the measurement scale explained previously (field 1). The rating assigned (Na) to R11, R12 and R14 is 2/4, the rating of R13 is 1/4 and the rating of R15 is 3/4 (see the hexagon figure n°01).

The full (Na) is $4 \times 5 = 20$ and (Na) attributed to field coverage levers is $2+2+1+2+3=10$, so the average is $10/5 = 2$ or $2/4$.

So the coverage rate of the field is $\frac{1}{2} \times 100 = 50\%$. Which measures the intensity of coverage of the field R1 by the references. Then the school satisfies or covers 50% of the research need in terms of organization, structuring and development of research.

Figure N°01: the coverage intensity of the field R1 by these references



Source: prepared by us, using the scores assigned following the analysis of the data collected on the situation of scientific research within HEC May 2021.

Indeed, this evaluation allowed us to further identify the factors of strengths and weaknesses as well as the threats and opportunities concerning the organization, the structuring and the means of development of scientific research. We will summarize and present the main findings in the following SWOT analysis grid:

STRENGTHS	WEAKNESSES
- the creation of new research structures (3 new cnepru in the process of validation); - the renewal of the two laboratories Permanan and Marketic; - the perseverance of some researchers; - the diversity and richness of the lines of research, strong adaptation to the needs of the economic environment; - the size of the school space and the area conducive to expanding the premises dedicated to research; - New HDR researchers constitute a potential for supervising research	- insufficient physical means; materials and equipment, computer machines and software; - poor management and allocation of existing resources; - Internet - lack of online documentation - financial means do not encourage researchers; - blocked laboratory funds; - website - the documentary base dedicated to research (unsuitable); - the laboratory room is small and not well equipped with a machine station; - the absence of a research results orientation policy.
OPPORTUNITIES	THREATS

- the creation of new Masters and CFDs; (direction of research results towards training; - partnership with economic actors (orientation of research towards the needs of the environment); - international openness (participation in conferences, collaboration, etc.) - FIE for the creation of incubators requesting research results;	- distance from the school -the invisibility of the work of researchers - transfer of researchers due to the location of the school - demotivation of researchers; minimizes their scientific productivity - poor school ranking; - low involvement of researchers in laboratory activities; - the professor title is the only motivation for scientific production!
---	--

Table N°01: Presentation of the state of development levers in the field of scientific research

Source: produced by us, inspired by our analysis of data from HEC school services reports May 2021.

V .2- Field 02: Scientific relations and partnerships

The culture of scientific partnership within the HEC school has been established for a long time (since November 1999), but these partnerships have not necessarily been oriented towards the development of research.

V .2.1-Reference 2.1. : Rational management of research activities

The HEC School has 20 research teams bringing together 34 HDRs, including 13 professors and 215 researchers who are multidisciplinary doctoral students and belong to different specialties.

However, these teams are not motivated to carry out a well-known strategy of opening to the outside. As a result, this interprets the lack of regular planning of events and activities for the dissemination and dissemination of research work.

V .2.2-Reference 2.2. : The partnership of the HEC school in terms of research at the regional and national levels.

The HEC school has forged scientific relations with several national institutions, namely: the Ministry of Commerce, the Algerian Olympic and Sports Committee, the CEVITAL group, NUMIDIS, RENAULT-ALGERIE, , OREDOO, MOBILE, DJEZY, ROUIBA, ENSEJ, ANGEM, CACI, Banks and other public and private economic enterprises;

We note that the partnership culture of the HEC school has neglected collaborations between national schools and/or national laboratories and research centers. And all the more, this has slowed down (limited) the mobility of researchers at the local level, for reason of the absence of a financial support policy.

V .2.3-Reference 2.3 : The development of international research partnerships

The school pursues an international convention policy, but it lags behind in the development of research projects in cooperation with international institutions.

Nevertheless, from 2011 and within the framework of the "MHESR" supervisory policy on encouraging the mobility of researchers, short-term training grants were granted to teachers of different grades within the school. HEC.

V .2.4- Standard 2.4: The communication and dissemination policy for scientific production

It is for the institution to put in place all the means necessary for the visibility of research activities. However, the HEC school has a major gap in terms of the visibility of the scientific research results of its researchers. The only means planned for the dissemination of research work is limited to the school's journal of business sciences. The conferences are not organized in a rational way, that is to say, there is no internal logic that follows the evolution of the research themes inscribed in the axes of the two laboratories and even those developed by the doctoral students. In this sense, the school's website is mainly the strategic showcase for enhancing the school's image and the fastest source for better disseminating information.

- the terms of partnership between the HEC school and its various partners, and the rational management of research activities;
- the establishment of a strategy of privileged partnerships in terms of research at the regional and national levels ;
- The development of international partnerships in research and the encouragement of international cooperation. ;
- The policy of communication and dissemination of its scientific production and the implementation of all the means necessary for the visibility of research activities;

We are going to represent these factors using a hexagon to better illustrate their intensity of coverage of the partnership field and the school's relations with the outside world (R2).

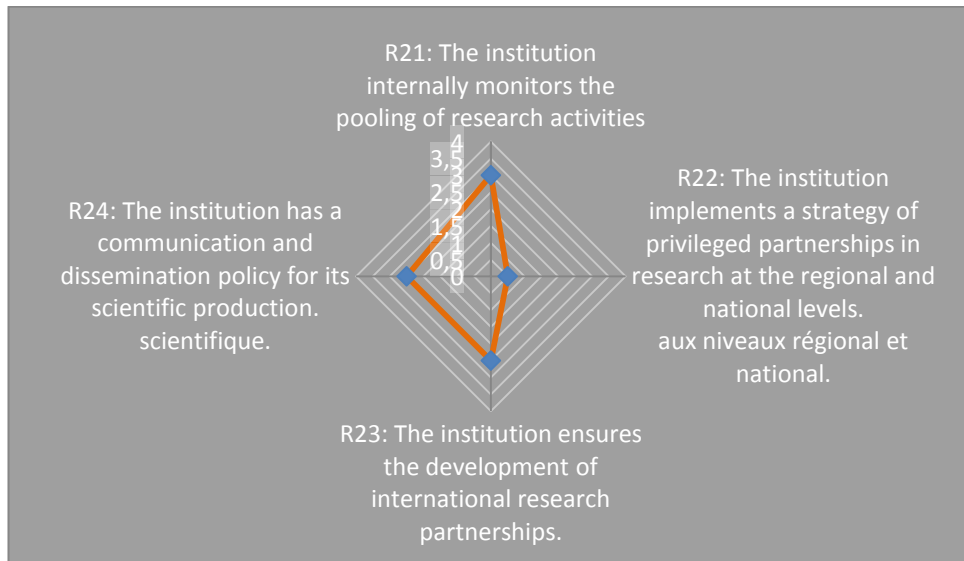
-The rating assigned (Na) to R21 is 3/4, R22 is 0.5/4, and R23 and R24 is 2.5/4 (see hexagon figure n° 02).

The full (Na) is $4 \times 4 = 16$ and the (Na) allocated to field coverage levers is:

$$3 + 0.5 + 2.5 + 2.5 = 8.5/16, \text{ so the average is } 8.5 / 4 = 2.125 \text{ or } 2.125/4.$$

So the coverage rate of the field is $2.125 / 4 \times 100 = 53\%$. Which measures the coverage intensity of the field R2 by the references. So the efficiency of the management of the partnership and the relations with the socio-economic environment by the EHEC is at a rate of 53%.

Figure N°02: the coverage intensity of the R2 field by these references



Source: compiled by us, using the scores given following the analysis of data collected on external relations and HEC's partnership policy in terms of scientific research.

Indeed, this evaluation allowed us to further identify the factors of strengths and weaknesses as well as the threats and opportunities concerning the partnership policy.

We will summarize and present the main findings in the following SWOT analysis grid:

STRENGTHS	WEAKNESSES
- Potential of HDR researchers and research teams; - Wealth in multidisciplinary research themes; - The desire of the school's research structures to improve the research policy; - Reorganization of the "laboratory and DPGRS" research structures.	- The low motivation of researchers to conduct research relations with the outside world; - Ineffective management of relationships with partners; - Absence of a policy for monitoring scientific conventions; - Low visibility of research work; - The strong lack of research projects in collaboration with foreign and even national partners; - Insufficient means of communication and dissemination of scientific production;
OPPORTUNITIES	THREATS

- Potential national and international partners; - The policy of encouraging scientific partnerships through supervision; - Willingness to involve external institutions - A favorable socio-economic environment for the research partnership considering the problems of economic crisis;	- The invisibility of research work and results to the outside world “socio-economic environment”; - The bad classification of the school; devaluing!
--	---

Table N02: presentation of the state of the partnership and the external relations

Source: produced by us, inspired by our analysis of data from HEC school services reports May 2021.

VI-Field 3: the promotion of research

VI.1- Reference 3.1. : The policy of valorization and transfer of research results

For the school, it is a question of capitalizing on the results of research and ensuring their transfer to the socio-economic sector. The school as it was well advanced in the previous chapters does not have a policy of orientation of the results of research towards initial training, but more or less since the year 2013-2014, the new structures in charge of doctoral training (the CFDs) relating to the Marketing, Finance and Accounting, Management and Entrepreneurship and Corporate Governance specialties, thus newly structured the CFD of the International Affairs specialty have developed a reflection on the orientation of research results towards the formation of the doctoral cycle . In addition, the evaluation of doctoral thesis projects is based on the compatibility of the themes with the axes of the research teams affiliated with the two laboratories of the school (Marketic and Permanan), and also with the themes of the CNEPRU projects. In addition, the engineering of the programs dedicated to doctoral training is based on the subjects developed in research and their degree of response to the demand of the socio-economic environment.

VI.3- Reference 3.3. : The institution promotes the creation and incubation of companies linked to research

The institution has set up a training mechanism allowing students to create micro-enterprises, which is why the school has signed agreements with ENSEJ and ANGEM and even with some banks.

VI.4 - Reference 3.4. : The dissemination of scientific culture.

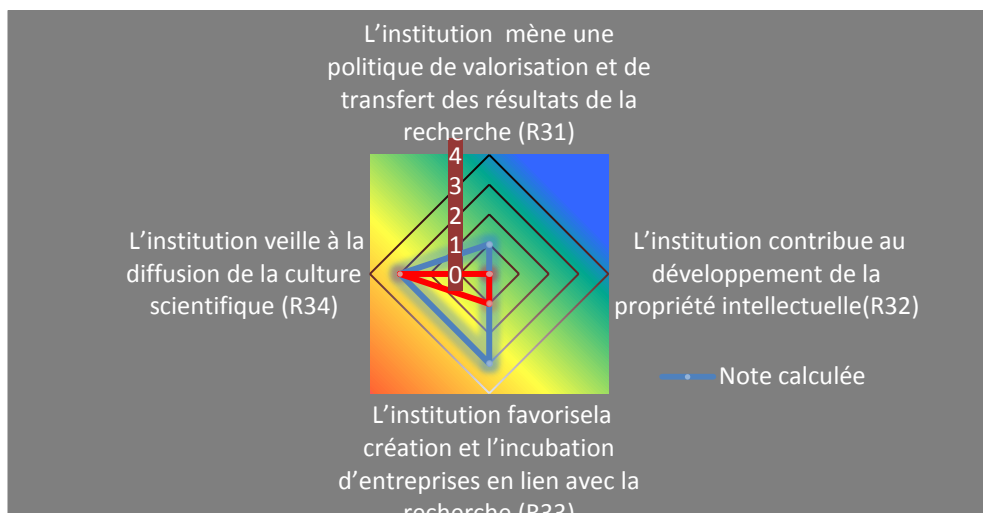
For the institution, it is a question of opening up scientific culture to the general public. The school organizes scientific events and participates in others to better disseminate and promote the scientific production of its researchers and allow them to exchange knowledge and create networks to promote future scientific meetings.

VI.5- Standard 3.5: Evaluation of the intensity of coverage of the research development field (R3) by its references

The evaluation of scientific research within HEC depends firstly on the degree of dynamism carried out internally in terms of promoting and transferring the results of research either to initial training or at the request of training expressed by the socio-economic sector institutions. Following the policy of securing and intellectual protection of the scientific production of researchers and also the establishment of mechanisms to create micro-enterprises by researchers and finally the culture of scientific openness to the public.

Indeed, a scoring grid allows us to represent in the hexagon below, the degree of coverage of the field of research valuation (R3) by the evaluation factors indicated (references).

Figure N°03: The coverage intensity of the R3 field by these references



Source: compiled by us, using the scores given following the analysis of the data collected on the policy for promoting scientific research within HEC.

From the results obtained from our analysis, we will illustrate some strengths and weaknesses as well as the opportunities and threats using the following SWOT grid

Table N°03: Presentation of the status of research promotion within EHEC.

STRENGTHS	WEAKNESSES
- New approach to directing research results towards doctoral training (initial), and more or less continuing training according to the needs of socio-economic institutions (initiative on the part of researchers) - Journal of commercial sciences recently integrated into the CERIST site - Means of disseminating research: a review of commercial sciences; the new site recently installed	- Absence of orientation policy and transfer of research results to initial training; - The school has not developed a training program in publication techniques for researchers; - Integration of the results of the research in specialized training for the benefit of user sectors. - Insufficient means of communication and dissemination of scientific production; (no program of scientific events for research) - Lack of internal policy for the intellectual protection of researchers;
OPPORTUNITIES	THREATS

-The CERIST way of more effective visibility; -Google scholar means of valuation of publications; - participation in scientific events; - response to the demand for training expressed by the actors of the socio-economic environment	- The school's partners in the context of incubation and business creation do not encourage our students to develop their innovative projects; -Plagiarism ; - The support systems for business creation do not favor student projects in terms of financial support!
--	---

Source: produced by us, inspired by our analysis of data from HEC school services reports May 2021.

Conclusion :

Self-assessment should not be reduced to a simple mechanical verification of criteria, in particular through indicators and surveys. The self-assessment report must provide analyzes allowing the assessment of all aspects of the state of progress of the various achievements of the institution.

In what follows, we will give the main actions to be implemented for the significant improvement of scientific research activities. According to the inventory carried out:

- Encourage the opening of doctoral formation ;
- Inform and educate researchers about the strategic vision of the institution (research component);
- Promote multidisciplinary research activities (teamwork);
- Put the research activities of the laboratories in line with the socio-economic environment;
- Seek other sources of funding (services, expertise, studies;
- Better plan research activities (research entities);
- Make the scientific production of the laboratories visible;
- Present an annual report (according to a framework) of research activities by the researcher, by the team, and by the lab.

References :

BAKOUCHE S.(2015),«l'implémentation de l'assurance qualité dans l'enseignement supérieur : Contexte et enjeux, »CIAQES.

BOUBAKOUR, F.(2016),« assurance qualité interne et Autoévaluation : des principes à la mise en œuvre», 4 ème session de formation des responsables d'assurance qualité des établissements d'enseignement supérieur, MESRS,p.7.

CIEP,(2012),«Pistes méthodologiques pour la mise en œuvre de l'autoévaluation : Projet Aqi-Umed». <http://www.aqiumed.org>.

ISO8402, 1994, définition de la qualité , www.iso.org ,(consulted on 3/9/2022)

VLASCEANU, L.,GRÜNBERG,L., and PÂRLEA,D.(2007).« Quality Assurance and Accreditation: A Glossary of Basic Terms and Definition», UNESCO-CEPES, Buchares.

LERARI,M.(2016),« l'assurance qualité dans l'E.S. Algérie», 2ème rencontre annuelle de l'initiative Academia le réseau des académiciens algériens sur l'assurance qualité à l'université concept et expérience internationales.

LERARI M.(2016),« Guide de l'Auto-évaluation selon le référentiel national», CIAQES.

Ministry of Higher Education and Scientific Research, (2008),« Quality Assurance in Higher Education between Requirements and Reality »,Minutes of the 03 workshops that followed the International Symposium.