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Excellence Cluster Model for the Algerian University to Strengthen its Links With the Socio-Economic Environment

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ABSTRACT

The challenge of excellence programs in the world is to improve the interaction of the university with its local and global environment and follow the rapid developments of science and knowledge. This study aims at presenting the participation of excellence clusters in improving the quality of higher education (HE) institutions achievements (the graduate, scientific research and social services) and their consistency with the main requirements of the socio-economic environment. Based on the review of literature on academic excellence and inspired by recent international experiences, we proposed a model for a cluster of excellence, applicable to Algerian universities, aimed at implementing change and innovation on HE achievements (Graduate, Scientific Research and Services), taking into consideration the requirements and needs of the institutions that operate in their territory. Hence, the present article aims at presenting the orientation towards academic excellence clusters. These contribute to the improvement of the quality of graduate by relying on the integral scientific qualifications and the quality of scientific research, based on inquiry, practice, and development. Moreover, they focus on raising the quality of public service by promoting the universities. Finally, the study proposed some suggestions for the successful implementation of this orientation in Algeria.

Keywords: *Cluster of Excellence, Academic Excellence, Higher Education Institutions, Socio-Economic Environment*



Introduction

During the 21st century, all universities throughout the world strive to improve the quality of their educational services, production of scientific researches, and the excellence of all services for the stakeholders. Furthermore, universities keep a commitment to the environment, society, and the world. In the same context, HE institutions are the model of overall quality and excellence. These two concepts are highly intertwined and based on the same principles. However, in order for the university to reach excellence, it must commit to the deliberate developmental strategy that is based on the efforts of the higher administration in collaboration with the teachers and researchers who guide students into achieving better results according to their intellectual and epistemological capacities. This aims at shaping responsible citizens toward their societies in all the services and industrial sectors.

Since the beginning of the first decade of the 21st century, an era that witnessed a scientific and epistemological revolution, many reforms have been made in the HE sector. This has different names in different countries, but the goal of **achieving excellence** is common and possible through structuring the teaching objectives in a way that serves the growth in the socio-economic environment of the university. Furthermore, the states sought to establish excellent territories that have an international reputation concerning scientific achievements and economic growth. These territories are referred to as “**academic excellence clusters**”.

Algeria copes and emulates with the international changes on all sides, especially the HE. The Algerian universities low international rank is, therefore, a major concern for the academic community. In the light of the new role of the university, which is increasing along the current knowledge revolution experienced worldwide and its participation in the development of all areas supporting the growth of countries and societies, it has become necessary to impose itself as an effective member, especially since the country has enormous young human potential that enables her, through a genuine policy and the commitment of all high education sector actors and economic institutions, to change the reality within twenty years.

This change leads to topping the list of knowledge productive countries at the Arab and international levels. However, this ambition will only be attained by the development of a program that aims to achieve excellence based on the support of universities in every academic and scientific activity. Moreover, to make the university a centre for scientific and intellectual production that pumps its achievements into the socio-economic environment, the effort of universities and economic institutions must join forces through intensifying their links of cooperation.

In the light of what has been said, the following problem arises:
Will the implementation of the excellence program strengthen the interconnection between the higher education institutions and the socio-economic environment?

Hence, this study aims at:

- Understanding what academic excellence is and its philosophies,
- Addressing excellence initiatives and programs in the world,
- Clarifying the Algerian efforts in activating the excellence clusters, and

- Projecting the suggested model for an excellence cluster that strengthens the cooperation between the Algerian university and its socio-economic environment.

The Definition of Academic Excellence

The university has a long-standing relationship with academic quality. The HE sector is the model for the rest of the sectors concerning excellence. However, there is no consensus on what is university excellence due to the different competing views. According to Al-Fuquaha (2012), there are at least three trends that are:

- First, the reputation perspective that focuses on the importance of the institution's rank and the academic curriculum, the teachers and researches productions, academic awards, and financial resources.
- Second, a perspective that focuses on the client, educational curriculum, enrollment easiness, information availability, tuition fees, students' satisfaction with educational services, and the satisfaction of employers and economic community about the HE achievements.
- Third, a strategic investment perspective that focuses on the returns of the investment, the budget setting and costs control, operators maintain (students and financiers).

Academics committees prefer the first perspective because of the facility of comparison between the competing universities on the best international ranks and accreditation. While, students, economic institutions, and society, in general, prefer the second perspective because it focuses on the students' achievement of intellectual development and competencies formation. As for the higher administration of the university and the ministry, they prefer the third as it summarises the good administrative performance. Yet, this does not mean that all the perspectives can be complementary in creating a comprehensive excellence model for all the university activities.

Definition of Excellence in Higher Education Institutions

Anninos (2007) defines excellence in HE as a realisation of the university's vision message and programs implementation alongside the overcoming of the internal standards. Not to mention, adoption of the best practices and sharing them with society. Moreover, Anninos (2007) regards excellence as achieving the customers and stakeholders' satisfaction, costs' control, and the optimal use of the financial, material, and human resources. In the same line of thought, excellence is the spread of good practices nationally and internationally. It is intended to generate a positive atmosphere that motivates staff and students to create and innovate, and it focuses on creativity and innovation, integration of the functions of education and scientific research, achievement of quality in education and reaching and exceeding the desired goals. He adds that the excellent university is known through its advanced performance in administration, education, scientific research, and commitment towards the external environment. This is portrayed in every policy, procedure, or operation the university takes.

American Association of Colleges and Universities AAC&U states that university excellence must be flexible and comprehensive for all the sides and functions of the university in the following four dimensions:

- Focus on the intellectual, epistemological, and social development of students, i.e. providing the best academic course.
- Goal-oriented development using the regulatory resources to foster students' learning and provide a regulatory environment that motivates higher-level learning and includes all actors in the university and science development.
- Focus on the intellectual and cultural differences of all the university members to foster the institutions' performance.
- Establishing links among all the members to create a scientific society that is open to differences and that takes advantage of this in serving students and education (Williams et al., 2005).

Academic Excellence Definition Limits

It is common knowledge that many universities aim at giving high-quality training and research. In consonance, international ranking orders universities according to their excellence degree based on scientific research. In the labour market, graduates of universities that are known for their excellence have better chances. Employers take excellence as the criterion for the credibility of the degree. Thus, universities face many challenges in determining the university excellence that they want to achieve. This raises the questions of:

- Do international ranks really reflect the excellence of the ranked universities and the incompetence of the excluded ones?
- Is university excellence an internationally recognised reference for HE?
- Is it a clear and exact objective for the HE actors?

A. Academic Excellence as an Objective

It is clear that the term “academic excellence” generally refers to the high quality of university services. However, it has not been given any agreed upon, a clear and exact international definition that enables universities to identify their international status through a self-evaluation process based on a certain set of criteria (Parmentier et al., 2016).

Furthermore, we notice that despite the ambiguity that surrounds university excellence, some consider the mobilised resources as the best criteria for excellence measurement. This creates confusion between excellence as an objective and the tools that lead to it. The following table presents the varying angles that help the different actors of the HE to recognise university excellence (Students, teachers, and the ministry).

Table 1. The different criteria for recognising excellence in higher education

From the students' perspective	From the teachers' perspective	From the perspective of the HE and Scientific Research Ministry
<ul style="list-style-type: none"> - Difficulty of getting an academic seat. - High admission average. - Difficult, diverse, and many times repeated evaluation. - Final exam is complicated, such as making an excellent memoir. - Employment chances are high for excellent universities graduates. 	<ul style="list-style-type: none"> - Choosing highly qualified with high degrees' researchers. - Teachers must continuously make publications and researches. - Limited contracts employment of teachers with continuous periodic evaluation. - Teachers must keep in touch with international universities and laboratories. 	<ul style="list-style-type: none"> - Mobilisation of the highest number of human, financial, and technical resources by the university. - High quality of universities and laboratories.

Source: Parmentier et al., 2016.

B. Academic Excellence as a Non-Agreed-Upon Criterion

Each annual international ranking of universities is followed by intense and almost sterile debates among researchers and those interested in the HE sector. These debates generally revolve around the credibility of the criteria used in the ranking. Unfortunately, there is no consensus by the scholars so far about these criteria. Top ranking universities are not part of these debates. However, far from the question of the reliability of these criteria, there is no disagreement that Harvard University is an excellent institution, if not excellence per se. In this regard, academic organisations and universities sought to create their own brands and impose them on the rest of the international community through the formation of coalitions that give unavailable grades and awards to a large number of universities. Then, a particular methodology for an international ranking that is criticised by all parties except for its pioneers is produced (Parmentier et al., 2016).

C. Academic Excellence or Elite Excellence?

It is not logical for the academic minority to set up the international ranking criteria that will be imposed on the rest; those who criticise them give up themselves, and those excluded will criticise them.

This image of academic excellence based on international criteria cannot be limited to a few universities that include the elite. Whatever the efficiency that characterises a large number of universities, the stats of excellence is only attributed to a few ones. Thus, this elitist embodiment of excellence is not necessarily important for HE development. However, its aim is to create differences between universities at the international level and between the ranked ones; while maintaining a certain degree of credibility (Parmentier et al., 2016).

The question that arises: is the elite excellence model that imposes the same criteria on all the participants a standard and exclusive excellence at the same time?

In addition, since it is designed to distinguish the elite universities from the rest, does it suit the functions and values of the HE that are education, scientific research, and social service?

Therefore, we shall tackle the academic excellence philosophies that are the conventional philosophy (elite excellence) and the social and societal philosophy of excellence.

Academic Excellence Philosophies

Universities throughout the world are divided into two distinct classes, elite universities that impose strict admission conditions and public universities that are open to all social classes. These two different philosophies can be clarified as such:

A. Excellence Philosophy in Elite Universities

Despite the agreement of the authors interested in HE on this model of academic excellence, it is still strongly criticised due to the following two main reasons: 1- The exclusive higher educational system that results from the elite model and 2- because it affects the main functions of the HE.

These two causes shall be detailed in the following (Parmentier et al., 2016):

- The HE system, in the light of academic excellence, is based on the quality of its contributors such as students, teachers, and the different financial and human resources. This is a key factor for the production quality. Therefore, only institutions that carefully select outstanding students who belong to a social class that is able to finance expensive graduate studies will be excellent when it comes to training offers that are not open to everyone.
- In this model, the university rank is subject to the degree of freedom in admitting students based on scientific and financial criteria.
- This limited to a special social class concept of excellence is contradicted with the principles of education that include all social classes and aim at social harmony that creates cultural and economic equilibrium.

As far as the main objective of HE is concerned, it is agreed upon that it works to provide excellent students with good employment opportunities or high society positions where they add value economically and socially. Nevertheless, according to the elite model, excellent universities aim at serving their suppliers that are economic institutions or private research laboratories and others. Thus, they provide services for the minority of students and society members concerning benefiting from the intellectual and epistemological production of the university. In return, graduate students must give their best to the institutions that employ them immediately after graduation.

At the end of this point, we conclude that the exclusive and selective excellence model is the result of the ambiguity that surrounds excellence where it left the opportunity for a small group of universities and institutions specialised in academic quality to design the elite model that serves a minority of the society without cooperation with the majority through leaving them the opportunity to design a model that serves all the society and realises the aims and objectives of HE such as equal opportunities in getting high-quality training.

B. Social and Societal Academic Excellence Philosophy

First, we must point that social and societal excellence is complementary to the elite and does not contradict it. It is an excellence that aims to offer equal opportunities for students who have the capacities and motives to be admitted into the university without any pre-exclusion through providing the necessary tools for the training, scientific research, and professional experience to realise a level of excellence that serves the public interest.

ENQA summarised the academic excellence concept in five points that are in accordance with the social and societal dimensions of HE (Parmentier et al., 2016):

- The importance of competence criterion that measures the added value at each phase of training or research on the students’ personal development.
- Valuing the role, tasks, and principles of HE in promoting the society, establishing social justice, and spreading this trend in the minds of the different actors of the sector to raise their awareness about their role in making the difference in the economic, political, and social domains.
- Working on establishing a comprehensive definition for the evaluation and ranking of academic excellence at universities and refusing all the approaches that are tied with limited sides of excellence, such as the number of awards and researches regardless of the quality or influence.
- Considering HE as a basis for social wealth for anyone who wants to take advantage, not an assessment tool for the benefit of society.
- Setting up high criteria for education and scientific research and encouraging all the participants to reach them.

To implement this philosophy of excellence in universities, we have, first, to adopt a multidimensional approach since excellence is not limited to educational and scientific research; rather, it also covers the third function of the HE that is social service through the university’s openness on its environment and introducing it to the faced issues and modern scientific concerns. Finally, it is necessary to attempt at setting criteria to track the advancement of the target objectives and to encourage stakeholders by discussing the results with them.

Excellence Initiatives and Programs all Around the World

Excellence initiatives and programs are funding programs aiming at enhancing the HE institutions’ performance and making them “excellent”. Basic financial allocations may aim at creating excellence; excellence policies are different in the sense that they do not cover all HE institutions, and they are highly selective because it is impossible to finance excellence for the country’s universities. Furthermore, funding sums are high compared to basic funding (Biscaia, 2017). Excellence initiatives emerged first in Asia in the 90s, and then European countries joined the train in the first decade of the third millennium.

Excellence Programs Status-Quo throughout the World

In the following table, the programs in some Asian and European countries are presented in chronological order:

Table 2. Historical development of excellence cluster policies in Asia and Europe

Period	Country	Excellence program (s)
1998	China	- Project 985: It aimed at making 10 Chinese universities among the top internationally. It started with a merge of the Chinese universities, then targeted international ranking.
1999	South Korea	- Brain Korea 21st Century (BK21): A project of establishing the 21 st -century universities in 69 Korean universities. It aimed at fostering the research universities to reach an international level and at positive exploitation of the competitiveness of the university in order to improve the outcomes; students and scientific researches (OECD)
2002-2007	Japan	-Centers of Excellence (CoE): Aimed at promoting the Japanese universities through a focus on the improvement of scientific research competitiveness in the world (Japan society for the promotion of science [JSPS], n.d.)
2006-2015	Taiwan	-50 Billion Program: Aimed at ranking 1 out of 12 universities that have been funded, among the top 100 universities in the world.
2006-2011 2012-2017	Germany	- Excellenzinitiative: Aimed at promoting scientific research, fostering the correlation between the various scientific fields and the institutions through creating clusters of excellence and strengthening the international relationships in the scientific research, in addition to increasing the attractiveness of the excellent German universities.
2010	France	- L’Initiative d’Excellence IDEX: Eight university coalitions have been chosen in order to establish excellence clusters that can compete with the biggest universities in the world.
2013	Russia	- (5- 100) Russian Academic Excellence Project Aimed at getting 5 Russian universities into the top 100 universities in the world.

Source: Authentic based on (Biscaia, 2017, p.2)

The following two tables show a number of excellence initiatives throughout the world in the two periods 1989-2004 and 2005-2015 which totally are 13 and 37 respectively:

Table 3. The number of excellence initiatives in different regions of the world

Region	1989-2004	2005-15	Region	1989-2004	2005-15
Africa	0	1	Middle-East	0	1
Asia	8	14	North America	1	1
Europe	4	19			

Source: (Salmi, 2016, p.16)

Table 4. Excellence programs according to countries

Region	1989-2004	2005-15
Africa	-	Nigeria
Asia	Australia- China- Hong Kong- Japan- New Zealand- South Korea	China- India- Japan- Malaysia- Singapore- South Korea- Taiwan- Thailand
Europe	Denmark- Finland- Ireland- Norway	Denmark- Germany- France- Luxemburg- Norway- Poland- Russia- Slovenia- Spain- Sweden
Middle East	-	Saudi Arabia
North America	Canada	Canada

Source: (Salmi, 2016, p. 17)

P.s: Many countries took more than one initiative or many phases for each initiative; this explains the non-correspondence of the two tables.

We notice from the two previous tables the absence of Britain and the USA. This is because their universities are among the top according to the international ranking of HE institutions. Furthermore, their basic funding is very high compared to other countries. The same applies to Switzerland, where governmental funding is generous in that it allows developing local universities without resorting to selective policies. In all the above cases, the governmental finding is the main funding source (Salmi, 2016). On the other hand, the French funding is different in the sense that it is completely sustainable funding through the allocation of 9.5 Billion Dollars in the form of a deposit, and its annual income is distributed to the universities benefitting from the program.

Table 5. Excellence programs funding size in some of the world countries

Year	Country	Funding
2002	Japan	484 Million Dollar
	China	3 Million Dollar
2003	Australia	225 Million Dollar annually
2004	China	6.6 Billion Dollar for the second period
	South Korea	1 Billion Dollar
2006	Germany	2.35 Billion Dollars for the two periods of the initiative.
	South Korea	2.1 Billion Dollars for the second period
2007	Japan	From 640,000 Dollars to 6.4 Million Dollars annually for each excellence cluster.
2008	France	6.2 Billion Dollar
2011	France (laboratories of excellence LABEX)	1.24 Billion Dollar
2012	Germany	2.97 Billion Dollars for the second period
2014	Africa (excellence clusters in Africa)	290.8 Million Dollar funding from the World Bank

Source: (Froumin & Lisyutkin, 2015, pp. 252-253)

Excellence Cluster Programs Design

Academic excellence programs design includes various factors that revolve around the following questions:

- Does the initiative support the universities as a whole or just some functions and departments?
- Do excellence initiatives encourage integration and complementarity between universities?
- How long is it required to realise academic excellence programs?

All these inquiries shall be answered in the upcoming lines (Froumin & Lisyutkin, 2015):

a. A noticeable aspect of the excellence initiatives is the focus on the universities as a whole according to the international ranking that assesses each university as a single entity. Thus, the university takes advantage of all the resources to contribute to the improvement of its quality and create excellence in education and scientific research.

b. Integration and complementarity policies were not the most important processes in academic excellence cluster programs throughout the world, except France, Denmark, and China, which are

countries where integration and excellence policies had been simultaneous. In addition, the Russian program “Federal Universities Project” aimed at establishing regional universities through integrating the existing universities; integration policy was not adopted since it requires a long time and involves high risks such as disorganisation and priorities disequilibrium.

c. The execution duration of academic excellence programs differs from one country to the other and from a university to another. Generally, the duration of each program or phase takes from 3 to 7 years.

d. Most programs relied on open competition to choose the most competent universities that are able to compete internationally. This is through studying the applicant universities files and plans to create an academic excellence cluster. In Germany, for instance, the government studied 137 universities’ files and excellence programs in the light of the excellence initiative. On the other hand, in China, universities were chosen by the government, and in Taiwan, universities were chosen based on their openness to industrial and economic organisations. Nevertheless, we have to point out that in most cases resorting to an international selection committee was the most crucial step towards the internationality of the HE system. In this regard, Russia has enlisted the help of some stakeholders from the top 100 universities in Shanghai.

Algerian Efforts in Activating Excellence Clusters

“Le Schéma National d’Aménagement du Territoire” SNAT was the first step towards the activation of excellence clusters. The Scheme represents the efforts towards environmental, political, and economic sustainable cooperation. Furthermore, the Scheme highlights the way followed by the countries to ensure equity, equilibrium, and attractiveness that formulate the following trends (Bechainia, 2018):

- SNAT shows the targeted future image of Algeria through the focus on three axes: economic, social, and environmentally sustainable developments.
- It conveys answers and alternatives to the big challenges of the national territory in an international context.
- It constitutes a great opportunity for participation, consultation, partnership and agreement between the various academic, economic, civil and political parties in future Algeria.
- Emergence of the cooperative approach in the phase of preparation, application, monitoring and evaluation of SNAT As a prerequisite for its success, achieving integration between the private and public sector and mobilising all the region’s resources.
- It was based on the vision that anticipates future events based on a set of proposed hypotheses in the form of scenarios.

The following figure demonstrates the broad lines of the Scheme:

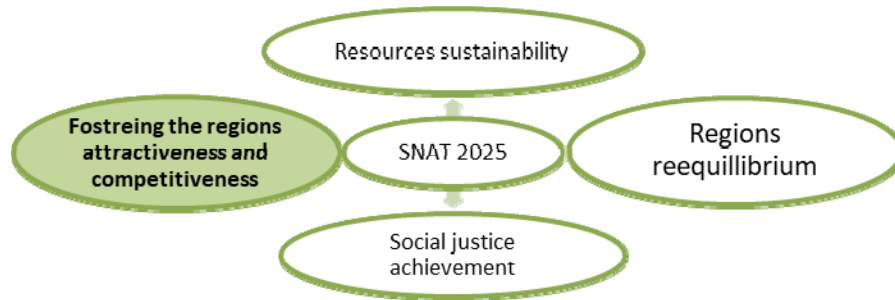


Figure 1. The Broad guidelines for SNAT 2025
 Source: (Lakhdar Hamina & Abbas, 2015)

SNAT tackles excellence clusters and competitiveness among the regional work program, which belongs to the third guideline that ensures the attractiveness and regions competitiveness conditions.

The regional work program of the excellence clusters determines six competitive clusters in Algeria whose development must be a priority for SNAT so that they can excel nationally and internationally. The 6 clusters are (Ministry of Land Use Planning):

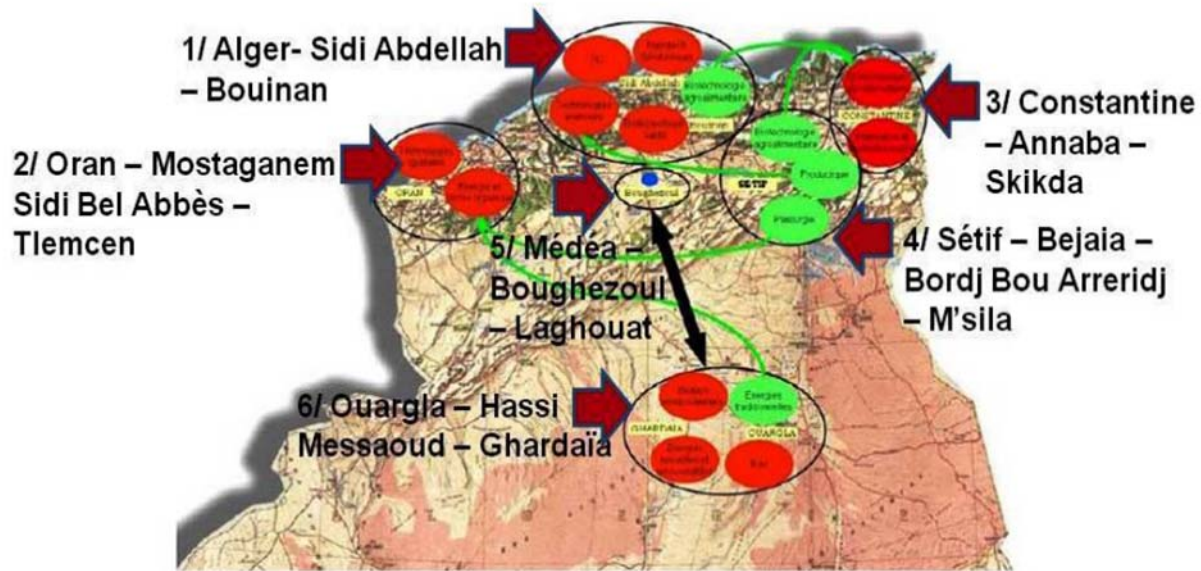


Figure 2. Excellence clusters and competitiveness in SNAT
 Source: (Ministry of Land Use Planning)

1. Sidi Abdellah- Bouinan Cluster: This dual cluster includes the two new cities, “Sidi Abdellah and Bouinan”, located in the areas surrounding Algiers. The activity of the Sidi Abdellah cluster revolves around advanced ICTs, while the Bouinan cluster is focused on nutritional biotechnologies and health, sports, medicine and nutrition.
2. Oran- Mostghanem- Sidi Bel Abbas- Tlemcen Cluster: Located in the West and includes four cities. Its activity is about organic chemistry and energy, space techniques, and communication.

3. Constantine- Annaba- Skikda Cluster: Located in the East. Its activity is based on biotechnologies, metal mechanics, and petrochemicals.
4. Setif- Bejaia- Bordj Bou Arriridj- Msila Cluster: Its activity revolves around plastic industry, nutritional biotechnologies, mechanics and production technologies, in addition to the attractiveness of this region to boost small and medium-sized enterprises through the establishment of the National Center for Technology Transfer
5. Medea- Boughezoul- Laghouat Cluster: It is a specialist in renewable energies, regional development, and new methods of education and training.
6. Ouerghla- Hassi Messoud- Ghardaia Cluster: The potential activities in this cluster are petrochemicals, conventional energies, renewable energies, desert agricultural engineering, and waters.

Higher colleges, universities and research centres must belong to the excellence clusters in the aforementioned domains. We shall show some research institutions and universities which belong to the previous excellence clusters in the following table:

Table 6. Some higher education and research institutions active in the excellence and competitiveness clusters:

Cluster	Higher education and research institution
Sidi Abdellah Cluster	<ul style="list-style-type: none"> - National Information Institute - Poly-techniques National School - Advanced Technology Development Centre - Techniques and Information Research Study Centers. - Blida University
Bouinan Cluster	<ul style="list-style-type: none"> - National Institute for Agricultural Engineering - National Institute for Agricultural Researches - Technologies and Sciences University Houari Boumedién - Pasteur Institute - Pierre and Marry Curie Center - Medical Sciences Faculty of Algiers and Blida Universities - Saida for Medicines Research Unit - Higher Institute for Sport Techniques
Oran- Mostghanem- Sidi Bel Abbas- Tlemcen Cluster	<ul style="list-style-type: none"> - Oran University - Oran National Center for Space Techniques - Sidi Bel Abbas University (computer sciences- intelligent systems) - Tlemcen University - Communication and Information Institute in Oran
Constantine- Annaba- Skikda Cluster	<ul style="list-style-type: none"> - Biotechnology Researches National Center in Constantine - Constantine Research Laboratories - Annaba Research Laboratories - Industrial Technologies National Center

Source: (Ministry of Land Use Planning)

The previous excellence and competitiveness clusters and their domains of activity are the solid ground for the development of academic excellence clusters since they give the opportunity for research and development in predetermined domains that have practical importance and enable cooperative work between university research laboratories and economic institutions development

and research cell. They also enable universities to develop fields that serve local industries and, thus, providing qualified labour is directly pumped into the labour market.

Unfortunately, the comprehensive national scheme that aims at developing many sectors is just a spot of ink on paper. It is not applied in reality when it comes to excellence and competitiveness clusters; this is our focal point. Accordingly, the following points are the obstacles in front of the application of the scheme:

- SNAT includes planning continuity in order to activate regional and local excellence and competitiveness clusters. This requires the HE and scientific research institutions the decentralisation and independence. However, in Algeria, universities are dependent on the Ministry.
- International openness is a challenge that requires restructuring the production system and strengthening the research and development in the producing institutions as well as supporting its partnership with universities and research institutions of the higher education sector with the aim of developing the quality of our exports and supporting knowledge growth and innovation in Algeria, in a relationship that brings together the academic and industrial community based on the Win-Win principle.
- The political movements circulating in Algeria and those responsible for it must be committed to serving the scheme, and achieving its goals without any bias to any existing policy must not affect the implementation of the plan. Existing policies change, but the goal of activating clusters of excellence based on knowledge and innovation for the benefit of the individual, institutions, society, and the state as a whole does not change.
- Universities need a revolution. The higher administration must know that establishing partnerships with institutions within the framework of the clusters of excellence and competitiveness is not restricted to exchanging visits and providing some training for students. Rather, students must be pushed towards scientific research, innovation, and cooperation in the enhancement of production and scientific research quality.

Excellence Cluster Model for an Algerian University

Upon studying modern international expertise of academic excellence, and discussing the background of excellence clusters in the Algerian universities, we tried to propose an academic excellence cluster in Algeria, and we proposed the designation “**Excellence Cluster for University & Economy Development**” in order to achieve accordance between HE outputs, the labour market demands, the social services and economy to achieve national development objectives by activating competitive clusters based on the interaction between the university, research, and industry.

The university realises its responsibility towards society and the necessity of its contribution to the economy and development of the country. The three axes of the proposed excellence model for an Algerian university are represented in the main outputs of higher education institutions: training, i.e., the quality of the graduate, scientific research and university services to the community. For this, the model is divided into three sections, represented in a:

- Complementary intellectual qualification.

- Search, apply, and develop.
- The university is the heart of society.

Through the previous axes, we can see the following strategy of the excellence cluster project as follows:

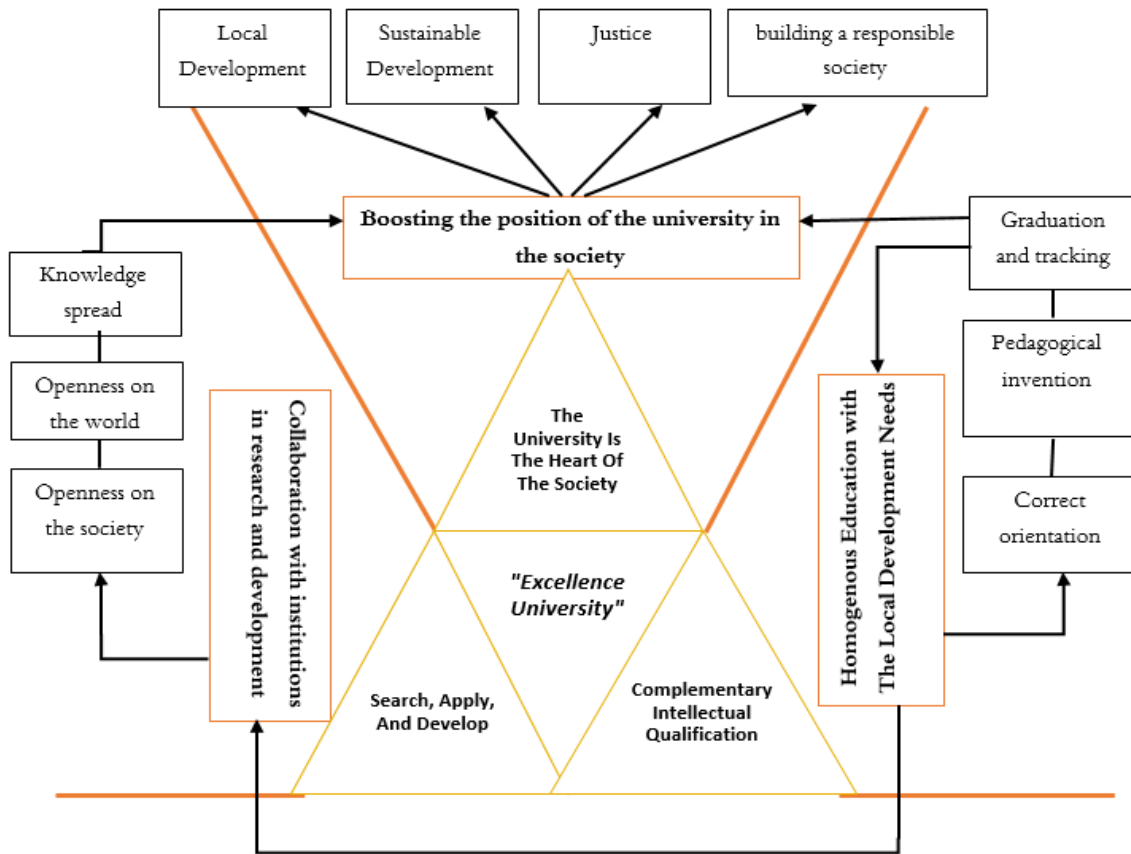


Figure 3: The excellence cluster model strategy (Cluster for University & Economy Development)
Source: authentic

Complementary Intellectual Qualification

Change in the HE starts from training responsible individuals capable of changing their society and reality. The university’s mission is to be an incubator of talents and that the student does not graduate as they first entered it. A tool allows students to discover their scientific and entrepreneurial capabilities and pushes towards growth and self-development during the study period. Furthermore, it helps acquire the self-confidence to become better.

We propose several sections, which we mention as follows:

a. Correct Orientation:

The correct orientation in the suggested excellence university is divided into pre-class (pre-enrollment at university) and post-enrollment:

- Pre-enrollment: Through cooperation agreements between high schools and universities, aimed at introducing students to the fields of study at their university and its needs of each field. These agreements set a track plan -3+3 by following students from their first year of high school, i.e., three years before passing to university, and following their higher education at least three years to prevent dropouts before obtaining the bachelor (license) degree. This is through a correct orientation of students that matches their choices and ambition. This begins by organising open days for BAC students and appointing a university student for each high school students group. Furthermore, a typical day in the university desired can be simulated for high school students.
- Post-enrollment: The university suggests conferences during the year aimed at informing students who are about to choose sub-specialities. This clarifies the future for the students and puts them in the suitable professional framework by setting their plan through the individual track since the beginning of the university journey and trying to orient students towards the socio-economic needs of the region and institutions. It also works to monitor the students who want to pursue a research career by directing them towards the disciplines that lack teachers, as well as focusing on their research skills by providing them with modules that support their academic careers, such as language, research methodology, and statistic, and others. Current and future students can have a look at the specialities map on the university websites and social media to know the professional objectives of each speciality and the employment potentials in the first year after graduation if possible.

b. Pedagogical Invention:

It is represented in providing invented content and teaching styles in the training offers. The course content contributes to saving time and avoiding errors. Therefore, the university places great importance on the stage of designing study programs and specialisations by focusing on the following points:

- Studying the socio-economic environment in collaboration with the economic and social experts to determine the current and future labour market needs
- Developing disciplines that contribute to the regional development and support the competitiveness and, hence, the university participates effectively in the local and national developments.
- Offering short-term professional training that enables the graduates to start a professional life. Furthermore, the excellence university supports the hybrid specialities in collaboration with the economic institutions where the student spends half of his week to develop his practical skills and interaction in the workplace since his first year.
- Clearly determining the scientific disciplines from the beginning of the training, which generally does not stop at graduation; rather, the student completes until the advanced stages of scientific research.
- Providing offers of training with hybrid degrees between the faculties, universities and institutions in the same region as the main step for multidisciplinary. At the end of the academic phase, the student obtains a double or triple certificate.

- Providing training offers or modules that are multidisciplinary aimed at the openness on all the academic fields, developing the sense of research and curiosity and preparing students for researches that move towards interdisciplinary and problem-solving.
- The excellence university works to integrate students in syllabus design, which may take years through giving modules the student can choose based on their desires, qualifications, and professional orientation.
- Providing online or hybrid training courses to reach all categories of all courses seekers such as employees or bosses.
- Providing training in psychology and pedagogy to motivate teachers to excel in their performance and adopt communication in their classes.
- Updating the educational curriculum to adapt with the scientific and epistemological recent developments.
- Following the Goal-Based-Approach and the student needs to achieve the targeted goals at the end of the course. This should be the basis for evaluation.
- Organising entrepreneurial competitions that gather students from different faculties of the university excellence clusters in collaboration with experts from scientific domains. Each team works on a project and studies it from the regulatory, financial, human, and economic dimensions.

The projects are evaluated by a jury to choose the best in order to fund and apply them, in addition to guiding them on the field during the early years. This initiative aims to encourage students to indulge in entrepreneurship and introduce them to professional life, and link it directly with what has been studied. Moreover, it encourages students to start their businesses and create future jobs.

c. Graduation and Tracking:

It represents the feedback that allows the curriculum designers to adapt to what the students face in their professional life after graduation. The university follows the students after graduation for two reasons that are:

- To collect data about the employment speed and the job domain in which the graduated students work. These data provide feedback for the university about the compatibility between the field of study and the labour market to allow program designers to adapt and update the training offers in line with the requirements of the university's environment. The data shall be a motif for students to know what to choose.
- To know the extent to which the students acquired beneficial skills for the jobs they occupy. If the student does not acquire all the necessary skills, the university provides additional courses based on the students' needs in order to gain student and society confidence.

Search, Apply, and Develop

Scientific research is the university's wealth and the economy engine. However, this can be achieved only through scientific researches directed towards economic and regional developments. Research gain their power from the challenges and problems the world faces and

are published so that people take advantage of them. Thus, the university must publish widely in English to increase its fame internationally and provide scientific journals for the public to be updated with the research news in their environment.

The role of the excellence university is producing excellent scientific research, generating and spreading scientific knowledge, and sponsor and protecting the inventions through registering and applying them. The objective of the scientific research is serving man and society in the first place through determining the challenges of priority and providing solutions alongside the suitable scientific alternatives for the society and economic institutions. The importance of the scientific research lies within its added value to the local and national developments. To achieve this relatedness, the university must not work in isolation from its surroundings through:

a. Openness to the Environment:

The objectives of the excellence university meet the development lines, country's philosophy and strategic plans. Researches aim at solving problems and facing challenges to develop the industrial, commercial, and agricultural domains according to the strengths of the region of activity. Therefore, the excellence plan is meant to serve the competitive clusters and spatial planning as a complementary plan that increases the region's attractiveness and brings investments.

b. Openness to the World:

The excellence university aims at international fame and recognition through openness in the scientific research through collaboration, teachers and students exchange, expertise and experiences transfer, and collaborative researches to provide solutions for contemporary issues. Furthermore, the research language facilitates integration in the international rankings of the universities, which consider English the number one language for science and knowledge.

c. Knowledge Spread:

The academic excellence cluster aims to spread knowledge among all the society layers through a magazine that publishes the latest achievements in a simple language that reaches all individuals.

The University is the Heart of the Society

The university is the heart of society. It is responsible for its different outcomes. Hence, it must be committed towards its socio-economic environment through the sustainable improvement of its produced intellectual, epistemological, and human capital. Moreover, it embraces all the social classes. Therefore, it must change and refine its values and principles towards what serves them and its society and environment.

a. Building a Responsible Society:

The suggested excellence university works to put the student inside its interests and to build the society through shaping responsible and active individuals. As such, it is necessary to adopt the change from the bottom in order to reach development for society as a whole. ³ In this context,

the excellence model invests (**Excellence Cluster for University & Economy Development**) in its students. The university works to transfer the values and principles that result, especially in sustainable development, through student improvement.

Furthermore, the excellence university aspires to become international through the commitment of its students to project and collaboration in addition to transferring its principles after graduation: thus, influencing the others positively. The university also regards the students' experience as precious and deserve to be thoroughly exploited. To this end, the university provides excellent services for students academically and leisurely.

b. Reaching Justice:

The university takes into consideration students with specific needs. It works to provide a suitable environment for students with autism due to their nature that depends on isolation. The university sets them a special syllabus to invest in their extraordinary capacities in several areas. It also ensures their employment by providing isolated bureaus.

c. Local Development:

By offering training opportunities that suit the local development requirements, The University strengthens the ties with the high and middle schools to ensure an early orientation for students towards training fields that serve the local development. In this context, the university deals with small and medium enterprises in purchasing equipment and providing services to encourage and assist their development. Furthermore, the university provides the opportunity to anyone who wants training, regardless the age, to train employees and those who want to change their domains. The university encourages life-long learning and provides diversity in training forms such as remote, attendance, or hybrid training. It also suggests narrow fields that serve specific purposes in short periods ranging from three months to a year.

d. Sustainable Development:

It is represented in adopting sustainable development in all the university's functions through:

- Including the environmental dimension in all the specialities to spread the environmental thought in all the life domains like transportation, construction, production, agriculture, and others.
- Encouraging students to solve environmental issues that serve clean energies.
- Suggesting online courses available for students who want to learn about sustainable development and its applications on the level of the individual, organisation, and society.
- Producing organic fertilisers through environment-friendly activities such as the establishment of a fertiliser production plant, as 50% of the waste is convertible, such as vegetable and fruit residues.
- Shifting from polluting energies and building ecological buildings that rely on isolation and natural light.
- Opting for environmentally friendly products and rational expenditures

- Including the students and staff in decision making to improve the university performance concerning sustainable development and its openness to their suggestions.

Conclusion

Upon what has been said, we proposed a model for academic excellence clusters in an Algerian university that revolves around three main axes to improve the outcomes of the university: the graduate, scientific research, and social service. It has three strategic lines matching the training with the socio-economic needs, strengthening collaboration between the university and the economy, and boosting the university status.

Through this study, we conclude that:

- HE in Algeria is influenced by the different social and economic circumstances because it is linked to the individual and the socio-economic environment.
- The Algerian universities' courses started late. Therefore, there is a need to evaluate the current system since two main variables occurred, namely, the increasing demand for HE and the shift towards LMD since 2004
- The HE indexes increased considerably. Yet, this must enhance the outcomes quality; otherwise, the increase will reflect mediocrity.
- The heterogeneity spread of universities, as if the population is the cause of SNAT, aims at promoting remote places and increasing their attractiveness based on their activities. Thus, the universities need to be matched with the activities to meet the economic needs.
- Lack of interaction between universities and economic institutions in scientific research.
- The level of local and international cooperation of Algerian universities is very low;
- Algerian universities acceptance of foreign students is so low for a Mediterranean country that links Europe with Africa. This is due to the unattractiveness of the universities and the quality of education.
- Language barriers affect the scientific exchanges, not to mention the quasi-dependence on French HE due to the usage of French in many fields despite the necessity to move towards English.

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