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UNIVERSITY AND ENTREPRENEURSHIP: THE EDUCATIONAL AND STRUCTURAL APPROACHES ADOPTED IN ALGERIA, THE CASE OF SETIF 1 UNIVERSITY

Research article

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Abstract

In recent years, the Algerian university has encouraged students at the end of their cycle to create their micro- enterprise and startup to practice outside the university. They are called upon to face environmental challenges, job creation and innovation. This top-down desire enshrined in the MESRS directive, falls to the university toact as a catalyst for efforts towards the socio-economic reality of its immediate and distant surroundings.This article questions the educational and structural approaches implemented to achieve these objectives. Our method is based on the collection and analysis of information collected through the structures installed and qualitative interviews with the managers of these structures and teachers from three faculties: Architecture, Economics and Science.The results showed that the university has equipped itself with support structures which work dynamically, including: an incubator, a CATI, a CDE and the BLEU. The educational aspect showed that the faculties combine between classic and semi-active method showing an insufficiency, induced by an ambivalent adaptation of the LMD system, the foundations of which are enrolled in learning the spirit of the entrepreneurship. We propose adopting active methods with an immersion project and a bottom-up organization to achieve the targeted objectives.

Keywords: Uuniversity, entrepreneurship, active, method

1. Introduction

We live in a world in perpetual evolution on a social, cultural, economic, political, technological and climatic level: a globalization which gives rise to new horizons and new needs, a technological evolution which is becoming omnipresent in lifestyles, climate change which increases concerns and the need to adopt new models of existence and consumption, etc. Faced with these changes and this increasingly growing demand, education and the university considered as an engine of intellectual development and the place of skills development, are called upon to review their models and to create new teaching methods and training, as well as new synergies based on the spirit of the company, the dynamics of project creation and learning by action, etc. "*Aloulou & Fayolle (2007) affirm that it is now a given that education systems must make room for entrepreneurship and business creation to promote business culture*" (Aatif & Malainine, 2022. p.183). The teaching of entrepreneurship at university isn't new, it began in the United States at Harvard University since 1947 (Carrier, 2009; Moumni et al.,2021).

Studies on entrepreneurship education focus on training future entrepreneurs and there are multiple methods. However, as Chambard (2013; 2010) notes there is a significant semantic shift in the definition of entrepreneurship ranging from entrepreneurship in the economic sense to that of taking self-destiny, generating repercussions on the education sciences and higher education as well as on the very notion of training entrepreneurs; moving from training business leaders to training the spirit of business or *entrepreneurship*. If the first relates to specialized branches in business, notably Management Sciences, the second should be the prerogative of all teaching. Many countries around the world have started this questioning, establishing a new relationship with education. Teaching has moved from the so-called **'classical'** method of vertical transmission logic to the so-called **'active'** method where the learner constructs his own knowledge.

In Algeria, aware of the problem of employment and unemployment and environmental and socio- economic changes, the Ministry of Higher Education and Scientific Research (MESRS) focuses on encouraging students to ultimately create this startup cycle to prepare them to free themselves in the socio-economic world. This top-down decision resulted in the creation of 152 startup projects in Setif in the year 2022-2023, which represents 5.06% of students leaving M2. Support structures were put in place to support students in this mission. However, if we return to the meaning of entrepreneurship which has moved from business to that of entrepreneurship spirit, this can only be achieved through training from a young age and teaching through active methods with immersion.

In this paper, through the case of Setif University 1, we question the modalities from the structural point of view and those from the point of view of the teaching methods implemented for the success of these decisions and their situation within the framework so-called active teaching methods. We present a literature review concerning teaching and entrepreneurship in the world and the recommended methods; We then present at the local level through Setif University 1 the support modalities from a structural and methodological point of view, their situation in so- called active methods with immersion projects and some bottom-up recommendations. This article calls for an expansion of samples to several universities in future work.

2. Literary Review

According to the Larousse online dictionary, entrepreneurship means: Activity, function of entrepreneur. https://www.larousse.fr/dictionnaires/francais/entreprises/30068. According to the OED Oxford English Dictionary: Entrepreneurial, adj. “Of, relating to, or characteristic of an entrepreneur or entrepreneurs; enterprise. See entrepreneur ». https://www.oed.com/search/dictionary/?scope=Entries&q=entrepreneurial. This dictionary definition of entrepreneurship is inscribed in an economic sense of business creation, it comes from the American tradition. However, with the prerogatives of educational sciences conferred on them by public authorities to train individuals with an entrepreneurial spirit, adopted by European and non-European countries with the support of UNESCO, the sense of Entrepreneurship takes on a new meaning.

Olivia Chambard notes that this term "entrepreneurship" has undergone a semantic shift going from the meaning of entrepreneurship linked to economics and the creation of the company to the more dynamic one reflecting "the entrepreneurship spirit " (Aatif &Malainine, 2022; Chambard, 2013; Mégret, 2022; Pavia, 2021). These two definitions far from being similar, lead to two different teaching postures and attitudes. The first aims at teaching which focuses to train future entrepreneurs and business managers; these are the profiles taught most in the Management, Economy and Engineering sectors. The second vision aims to train students by developing an entrepreneurial spirit in them and who will not necessarily have an entrepreneurial profile. It is a teaching adopted by all sectors of higher

education and also adopted from a young age in the primary and pre-university cycle (Mégret, 2022).

The programs and methods to support these teaching roles vary from the most passive or what is called **'classic method'** to the most **'active'.** Although it was observed that the classic method presented in the form of courses or conferences, accompanied by Directed Work (TD) or Practical Work (TP) exercises guaranteeing an acceptable level of learning and training, which is the most widely accepted, so- called active methods are emerging and also tending to take their place on the benches of universities. As its name indicates, the active method is dynamic; its role is to stimulate the student and encourage them to become an active acquirer of knowledge (Fayolle & Verzat, 2009; Mégret, 2022; Moumni et al., 2021). These methods fall into three categories: "the case method, problem-based learning and project-based teaching" (Bachy et al., 2010; Carrier, 2009; Fayolle & Verzat, 2009; Lebrun, 2007; Moumni et al., 2021).

- The Case-based learning method: students are required to position themselves in similar case situations, to understand the advantages and disadvantages.
- The 'APP' problem-based learning method: the student is presented with situations of problems and is led to understand all the components and to build his knowledge from his quest for understanding and its solutions.
- The method of learning by project resolution (ARP): the student is led to conceptualize a project, to develop the idea, the constraints, the process, the solutions and the feasibility.
- Five interacting factors are identified by Le Brun (2007) which favor a situation learning through active pedagogy:
- Information: the teacher no longer provides information alone; he guides the student towards resources from which it draws and completes the information.
- Motivation: this is what induces will. The perception and awareness of the usefulness of learning in the context are the sources of motivation
- Activities: using APP, case study or ARP type methods, the student becomes more involved in his learning through the strategies he puts in place and which involve organizational, project management skills and ‘’critical mind’’.
- Interactions: students work on certain themes in groups, which promotes interaction and the development of socio-cognitive skills.
- Productions: through personal production (report, presentation, grid, model, etc.), the student builds his knowledge with the guidance of the teacher and in coordination with his group. (Bachy et al., 2010; Bakouche, 2022; Lebrun, 2007). The notion of competence: know-how (activities) relates to internal and external resources to resolve contextualized problem situations (productions), is represented in Figure 1.

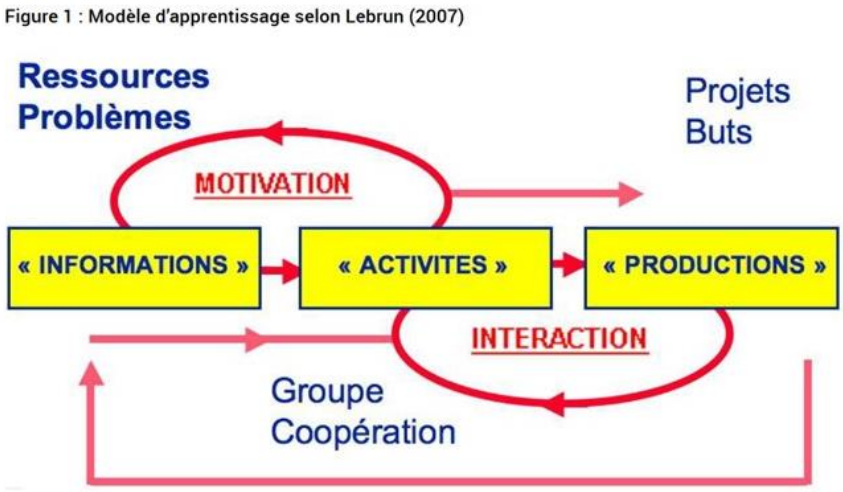

Figure 1. Active method learning model according to Lebrun. Source: (Bachy et al., 2010)

In teaching entrepreneurship, active methods are the most used; we can also find the combination, depending on the subjects taught, of a set of classic and active methods; other so-called "alternative", "dynamic" or even "fun" educational practices using games and videos…. space is forged in andragogy (Pavie, 2021), we now speak of an enactive method which supposes immersion or learning in a situation; the student and put in real situations to build their knowledge (Masciotra, 2022).

This posture of "enterprise spirit" or "taking self-destiny'' is access to the training of a responsible individual, capable of positioning himself in terms of knowledge and professional self-esteem develops on an identity formation level the situation of the individual in society, although it has noble aims, it risks encouraging individualism and dispersion. The prerogatives are expected to evolve in a context of formation of transdisciplinary and multidisciplinary groups (Mégret, 2022).

The question that arises at this stage is: what about the case of education in Algeria, what method and approach does it adopt to respond to the top down incentive for business creation emanating from of public authorities and what is the structural system put in place to support this decision.

3. Methodology

Firstly, are presented the methodological approaches used to teach in Algeria, will then be addressed through the case of Sétif in two parts:

-The first part concerns the recognition of structures created to support and supervise students in their journey of creating a startup or microenterprise, through documents collected and qualitative interviews, carried out during the month of October 2023 with the heads of these structures: Benali Farouk Director of the incubator, Messalta responsible for the CDE and Rouabhi Tarek responsible for the CATI.

-The second part concerns knowledge of the application of programs and methods teaching at the local level and the strategies put in place to contribute to training students so that they can create their startup. The data was collected from faculties and from qualitative interviews during the month of October 2023 with teachers from three faculties: Architecture, Economics and Management, Science-Computer Science. The choice of these faculties was

driven by the fact that we are teachers in these faculties whose functioning we know and where the collection of data was accessible.

4. Results

4.1. Algeria: Situation And a Brief History of Educational Reforms

Algeria is a country located in the north of Africa on the southern shore of the Mediterranean, it has "for the year 2021 a total resident population estimated at 44.6 million inhabitants *(*Algerian Demography 2020, nd).

At independence, Algeria opted for the socialist regime and decreed education, health and housing for all and all sectors were nationalized. Once the education has been made public, all students of school age have returned to school.

Education was organized on three levels: primary, middle and secondary corresponding to the structures: school, middle school and high school. The education followed was so-called **classical** education, also adopted by many countries; knowledge was transmitted from the teacher to the student and assessments were made on the knowledge acquired, in the form of homework and multiple exams, ensuring passage from one year to another. Moving from one level to another was done through an end-of-cycle exam. As for higher education, it was provided at the university to which the student became a student by obtaining the baccalaureate, which is still the case. Since then, adjustments in teaching have taken place on both a structural and pedagogical level. The most important was the one adopted during the 2000s.

As part of the modernization of education and supported by UNESCO, Algeria, governed since the 90s by a pseudo-liberal regime, has revised both the content and the teaching methods of the three levels. From 2003, the discourse and orientations were focused on learning by competence **(APC)** considered as an active method, compared to the classic method considered as a passive method (Ammouden, 2018; Hassani, 2013).

"The skills-based approach reflects the concern to favor a learning logic centered on the student, on his actions and reactions to problem situations, compared to a teaching logic based on knowledge. to be acquired. In this approach the student is trained to act (search for information, organize, analyze situations, develop hypotheses, evaluate solutions, etc.) based on problem situations chosen as life situations likely to present themselves to them with a certain frequency" (Hassani, 2013. P.9)

This summary presented by Hassani succinctly illustrates the content of the competency-based approach, and its inclusion in the so-called active methods adopted by the Algerian State for pre- university education. The question that arises is: what about teaching at university?

The university did not remain on the sidelines of this reform; it also initially followed the classic method in the form of courses or conferences given by the teacher, followed by work practical (TP) or tutorials (TD), the evaluation was done by control and continuous work. Depending on the sector, engineering training or the equivalent lasted five years. The diploma holder was recruited by the administration of welfare state institutions; during the period of the socialist regime, adopted since independence in 1962 and which lasted until the 1990s, which saw a turnaround towards a pseudo-liberal regime, induced by a difficult economic-political context (Ghouati, 2022). Education reforms are part of a context of political and socio-economic change "The *reform introduced at the higher cycle or at the university aims to compensate for the shortcomings of previous systems and to promote higher education on a national and international scale. One of the aims is above all to facilitate the socio-professional integration of students leaving university."* (Bakouche, 2022).

With the change from the socialist regime to liberalism, the State has disengaged from the job offer and young people are encouraged to find their own path, either with companies or by creating their own business.

The new craze of the MESRS to encourage students to develop startups, although it seems recent, it refers to the paradigm shift in teaching and education initiated by politics since the 2000s. It is in continuity the policy of professionalization of training that Algeria has always adopted (Ghouati, 2022), in the same way as many European countries (Wittorski, 2008) (Mégret, 2022).

The LMD system seems to respond best to this situation by providing training designed to prepare students to take charge of themselves by seeking employment opportunities on their own.

The LMD (License-Master-Doctorate) is an education system organized into three levels: The License, the Master, the Doctorate in the third cycle. The student obtains the "license" after training for three consecutive years. On a practical level, the changes created are:

- A license in six semesters after 180 credits at a rate of 30 credits per semester.
- A master's degree in two years after 120 credits at a rate of 30 credits per semester.

A doctorate in at least six semesters of research following a Master's degree.

The LMD system is an educational reform adopted internationally to "respond to the challenges of globalization" (Bakouche, 2022). In Algeria, the system was adopted in 2004-2005 and was officially established by Order of January 23, 2005 establishing the organization of teaching, the methods of checking knowledge and skills and progression in the studies of the License (Miliani, 2017). Universities gradually adopted it by presenting training offers approved by regional and national commissions.

The reform is based on an active pedagogy known as APC (Competency-Based Learning) as for pre-university education. Major objectives are targeted in this reform:

- Developing skills, which as its name suggests, is the very center of principles of the skills-based approach, which aims to place the learner at the center of learning.
- Rigorous monitoring using tutoring.
- Teaching geared towards professionalization which constitutes the bridge between the world of work and that of higher education.
- Training in multidisciplinary

The teaching methods include the same modalities as for teaching by skills, namely:

- Learning by problem solving: The student is called upon to resolve problem situations by formulating working hypotheses and carrying out research to find appropriate solutions.
- Cooperative learning: is an interactive way of organizing work within a group. The objective is to improve the success of learners by focusing on the quality of interpersonal relationships.
- Project pedagogy. The student defines a research thesis oriented by the objectives of the course and develops a search based on this theme; it poses problems in setting up a research project, internal and external resources. The subjects are organized by unit:

Teaching Units (UE): In each semester the lessons are grouped together in three Teaching Units. Depending on the sector, the teaching units can contain four units.

- Fundamental Unit: brings together the fundamental subjects for a given discipline.
- Discovery Unit: concerns the teaching of subjects corresponding to other specialties, or even other disciplinary fields in order to broaden the university culture and facilitate reorientation pathways.
- Methodological Unit: brings together the teaching subjects of methodological tools intended to help the learner complete their training course (mathematics, Languages, Computer Science, Documentary Research, etc.) (Berrouche & Berkane, 2007).
- Transversal Unit: not cited by the author, constitutes another unit.

The establishment of LMD as a teaching system for all university cycles except for medical sectors, took place at the same time as the establishment of reforms in the economic sector where the State had instituted the creation of SMB (small and medium-sized businesses), encouraging young university or non-university graduates to create their own companies with the help of state financing carried out through the support agencies: ANSEJ (National Youth Employment Support Agency), CNAC (National Unemployment Insurance Fund), ENGEM (National Microcredit Management Agency), which are responsible for supporting and financing business creation projects, whether those emerging at university or outside. Entrepreneurship Houses (ME) were created to supervise young people in this process and almost all universities have equipped themselves with an ME (Benlakehal & Nassira, 2019).

With the development of technologies in different sectors, the discourse since the arrival of Baddari as Minister of MESRS has focused on the creation of startups and a set of structures were established in continuity with what had preceded. What are the structural and educational methods that the university has implemented to ensure the objective of encouraging students to create their startup? This question is addressed with the presentation of the local case of the University of Setif and the three SC (Sciences) Faculties – Computer Science, SC-Economics and Management, and Architecture.

4.2. Setif And Its University

Figure 2. Location of ST University in the city of Setif and images of the faculties. Source maps: OSM. Photos Source : https:// www.univ-setif.dz/ articles/ 183.

Setif is a city located in the east of Algeria, 300 km from Algiers (Kelkoul et Chougui 2019,

2022; Rahmani-Kelkoul 2023). It is the capital of a wilaya which covers an area of 6,504 km². Setif, 2nd most populous wilaya in the country, is very dynamic on the socio-economic level and is home to one of the major universities which is technologically oriented, namely Ferhat Abbas Setif 1. This wilaya has all the assets to become the leader in the field of business creation (Incubateur Setif, 2003).

The university is split into two poles: Social and Human Sciences (Mohamed Debaghine) and that concerned by our investigations (Figure 2): Technological Sciences (ST) (Ferhat Abbas Setif 1) it houses five institutes and faculties:

- Faculty of Natural and Life Sciences
- Faculty of Economics and Management
- Faculty of Sciences
- Faculty of Technology
- Medical School
- Institute of Architecture and Earth Sciences
- Institute of Optics and Precision Mechanics
- Institute of Materials Science and Technology

Our objective being to know what the systems are on a structural and educational level, we had qualitative interviews during the month of October of the year 2023, with Benali Farouk Director of the incubator, Messalta responsible for the CDE and Rouabhi Tarek responsible for CATI, as well as with the teachers of the faculties mentioned.

4.2.1. Structural device

Structurally, the support systems are as follows:

4.2.1.1. The Incubator

The university diploma bearing Master Startup was established at the national level, officially by the Minister of Higher Education and Scientific Research Baddari Kamel by Order 1275 on September 27 of the year 2022.

The incubator, as a structure authorized to receive students for the creation of their startups, was created on September 25, 2021 and was certified in December 2022. Its partner establishments are Setif 1 University, ANVREDET and other socio-economic organizations. Its main mission is to support and help the young entrepreneur to carry out his project of creating a start-up according to the following approach: - obtaining an innovation label, - creating a (BPC) contemporary business plan, the constitution of the monitoring team and the project team and finally the creation of the startup and its incubation.

The incubator provides various assistance (accommodation and domiciliation of the company, advice, financing assistance according to various bodies available and likely to finance the project). It encourages the emergence of small and medium-sized businesses in the Setif region (proximity to the city and industrial activity zones). Also, it facilitates collaboration with the various UFAS structures (research laboratories, faculties, institutes, research units, etc.). It ensures collaboration and partnership with companies in the region via the CCI and the various companies contracted with the UFAS. One of its missions is to ensure technical-financial studies and market development (Incubateur Setif, 2003). The incubator is supported in its mission by structures which are:

4.2.1.2. The CATI: Technology and Innovation Support Center

Its mission, along with other structures of the institution, is to lead workshops and raise researchers' awareness of innovation and the valorization of their work through the filing of patents with the Algerian National Institute of Industrial Property (INAPI). It supports candidates with innovative projects and provides training in business creation (e.g. START-UP, SPIN OFF, etc.).

4.2.1.3. The CDE: Entrepreneurship Development Center

This structure aims to bring out project ideas and encourage their further development by students from all disciplines, during their university studies. Actions are designed to address all students in order to:

- Promote the entrepreneurial spirit among students to encourage their professional integration.
- Raise awareness and train the greatest number of students, all disciplines combined, in entrepreneurship by offering them progression during their studies and voluntary involvement outside their course.
- Bring out project ideas and encourage their development during their university courses.

4.2.1.4. The BLUE: Business-University Liaison Office

It is a service attached to the vice-rectorate responsible for external relations. Its role is to create and consolidate links between the university and businesses, with the aim of opening the university to its socio- economic environment.

The projects registered in Setif 1 University incubator for the year 2022 2023 number 152 are presented below by faculties in Table 1.

Table 1. *Startup projects by Faculties*

Faculties	
1. Faculty of Technology	52 Projects
2. SNV Faculty	44 Projects
3. SEG Faculty	33 Projects
4. IOMP	10 Projects
5. Faculty of Science	09 Projects
6. Faculty Medicine	03 Projects
7. Faculty of Architecture	01 Projects

4.2.2. Teaching method and pedagogy

The second part of our investigations concerns the teaching and the methods followed, the data were collected by qualitative interviews with teachers from the Faculties of Economics and Management, Sciences (Computer Science Department) and the Institute of Architecture and Earth Sciences (Department of Architecture). The interview focused on: the University's current orientations to encourage students at the end of their cycle to create startups and

whether the content and teaching methods correspond to this profile. The information is presented in two axes:

The first axis concerns five criteria relating to content and concerns: teaching of entrepreneurship, the organization of subjects, internships, the project, evaluation and tutoring. These criteria were identified from the literary review, presentation of the LMD system and the interviews. The results are given in the form of a table for each Faculty or Department.

The second axis concerns teachers' assessments of the content and progress Education; the results are presented in discursive form.

4.2.2.1. content and teaching methods by faculty

Table 2. *Faculty of Economics and Management*

Reading criteria	Economic Science and Business Administration
1. Entrepreneurship: course subject or specialty	Teaching of the subject entrepreneurship was initiated from 2015 for Master 1 (M1) students for all sectors of the faculty: Lecture and a tutorial of 1h30 per week over one semester. And an individual project.
2. Organization of teaching	The organization of studies is based on a common core for all students. In L2, students are divided into four Branches which are: SC Commercial, SC Management, SC Economics, SC Financial and Accounting. (SC stands for Science). The subjects are organized into four units made up of theoretical subjects and TD.
3. Method teaching	The subjects are taught in the form of 1h30lectures in a lecture hall and 1h30 classroom tutorials.
4. Internships	Internships are compulsory in L3 in company for 3 months
5. Project	The M1 project concerns the creation of a business plan
6. Evaluation	The evaluation is done on half-yearly control and continuous work. Each subject is assessed independently of the other. For the annual evaluation, the averages are calculated per teaching unit. The subjects compensate each other, the student must have a number of credits to be able to move on to the following year.
7. Tutoring	None

Table 3. *Faculty of Sciences Department of Computer Science*

Reading criteria	Computer Science
1. Entrepreneurship: course subject or specialty	The program added a subject teaching entrepreneurship in the second year of engineering. In L3, teaching is given in the form of a course containing several pieces of information on data management
2. Organization of teaching	The organization of subjects is done in four units made up of theoretical subjects and projects
3. Method teaching	The subjects are taught in the form of courses and tutorials, except for certain subjects which only include theoretical courses. 1h30 lecture in lecture hall and 1h30 tutorial in classroom
4. Internships	No internship
5. Project	In L3 and M2, students are asked to carry out projects on themes that the teacher designates and that the student chooses.
6. Evaluation	The evaluation is done on half-yearly control and continuous work. Subjects are assessed independently of each other. For the annual evaluation, the averages are calculated per teaching unit. The subjects compensate each other, the student must have a number of credits to be able to move on to the next year.
7. Tutoring	None

Table 4. *Faculty of Architecture*

Reading criteria	Architecture
1. Entrepreneurship: course	No teaching of entrepreneurship subject
2. Organization of teaching	The subjects are organized into four units made up of theoretical subjects and the project included in the fundamental unit.
3. Method teaching	The subjects are taught in the form of courses and tutorials except for certain subjects which only include theoretical courses. For the project subject it is a specificity of Architecture. The teaching takes place as described in the project box below.
4. Internships	Internships are introduced in L2 and M2: a duration limited to 15 days. Learning how to use software and exceptionally site trips are scheduled during the internship. The student must find the location of their internship; it is generally the architectural design offices which welcome them. Once the internship is completed, the student submits a report to the teacher who evaluates him according to criteria that he has set personally
5. Project	The Project is constituted according to the content of each semester. The Project is accompanied by the Project Theory subject which provides the necessary lessons for understanding the content of the Project. This includes an analysis which allows the student to take knowledge of existing examples to then move on to the design stage of the Project.
6. Evaluation	The evaluation is done on half-yearly control and continuous work. Each the annual evaluation, the averages are calculated per teaching unit. They compensate each other, a number of credits is needed for following year.
7. Tutoring	None

4.2.2.2. Teachers' assessments of the content and progress of teaching

Criteria emerging from the interviews concern several aspects; such as personal skills and preparation revealed by several profiles of teachers like *Amina* (Computer Science teacher) who says: " *it's not question about adding subjects or courses in the sectors, it is a question of instilling the culture of entrepreneurship and that it becomes a characteristic of the person"; "entrepreneurship" Belgacem* (computer science teacher) tells us *"is a state of mind that must be acquired from a young age"; "How can we ask a student to create a startup when all his life he has been used to being assisted" Sahra* (Architecture teacher) told us " *preparing a student to be an entrepreneur is a state of mind who has been preparing since youth."*

Another aspect like this relates to the LMD education reforms with which they were not associated and the absence of training for trainers regarding this system reported by *Ahmed* (Economics teacher) who says " *even if we were not associated with the reforms, the very*

foundation of LMD is noble and it can be effective with serious training of teachers who have the mission of training the students"; another aspect relates to the compartmentalization of teaching and the question of coordination and multidisciplinarity was raised by *Sahra* (Architecture) *"students find themselves with a lot of subjects and the articulations between subjects at the same level or between different levels is not obvious, likewise the faculties train students each in their own corner while there may be complementarities in the teaching which must be studied and established; it is time to address the question of multidisciplinarity."* Compartmentalization is also mentioned for the relationship of the university to the outside world by *Mohamed* (computer science teacher) who says*:"how can we ask a student to be creative when he is disconnected from the real world".*

The problem of language arose through the interviews of Architecture and Computer Science: " *the students are disoriented, they follow education in Arabic language throughout their course, once they arrive at the university, they are confronted to teaching in French language, which poses a huge problem of communication and understanding*." Another aspect which was raised by several interviews concerns the number of students to be trained per group and per teacher considered important as well as the lack of means and training materials.

5. Discussion

From the presentation of the results it follows that the incentive for students to create startups at the end of the cycle was accompanied by a structural system which existed previously but which was reinforced by the official creation of the Startup Master Diploma and the incubator, a suitable place to welcome students from all sectors; this structure takes care of monitoring, awareness raising and training in the administrative constitution of the startup based essentially on the BPC (contemporary business plan); the incubator is accompanied in its role by the CATI whose mission is to support patents and submit them to INAPI, the CDE formerly ''*Maison de l'Entreprenariat* (ME)'', also takes care of raising awareness among students in their business creation; what makes the difference between Startup and Business is the innovative aspect brought by the Startup.

If we consider the number of Master's students which exceeds 3000 students. The number of 152 startup projects for the year 2023 communicated by the incubator, represents a percentage of 5.06% of outgoing students. Despite the efforts made by structures to encourage students to create startups, the number is very limited and this could be explained by the recent date of creation of the incubator. However, encouraging students to create their own undertaking at the end of the cycle is not recent, the Entrepreneurship Houses were intended to ensure this role of support and incentive for the creation of micro-enterprises; It must be said that the structures alone do not compensate for the contribution of the educational component and teaching methods.

The andragogical aspect (teaching and education of students), at the faculty level, was inherited from the reforms of the system LMD set up during the 2000s. Its foundation was to train students in the spirit of business or entrepreneurship. However, the methods, the organization of the subjects and the programs as taught are not part of the training of this spirit of entrepreneurship and are also not completely part of encouraging business creation, hence a rather ambivalent application of the LMD reforms.

The programs are more oriented towards raising awareness than encouraging entrepreneurship, a different posture depending on whether it is Economics and Management where it is a subject that is taught; in Computer Science it is a course to bring students up to speed; in Architecture no subject concerning this profile is taught. The courses for the different subjects take place as in the classic system according to a theoretical course plus a

tutorial; in this way, teaching prefers to ensure training through acquired knowledge, whether in economic SC, in Architecture in SC Computer science, the evaluation being done by continuous monitoring or examination, is the guarantor of knowing whether the knowledge were acquired or not; training courses are introduced but are limited in time and space, which has an impact on the quality of learning; the student is not totally immersed in the external environment.

As for the capital characteristic project of learning by competence, in the LMD system, it consists in reality of carrying out research work concerning specific themes that the teacher proposes to the students, whether the student works alone or in a group without be immersed in the outside world; the project consists more of an in-depth presentation on a particular theme than a project to become professional or personal; as for architecture, the Project is the specific subject for training (Abbaoui et al., 2020; Tedjari et al., 2024); the Project is not a project for a professional future but a project relating to a theme where the student is required to make a design according to the programs and constraints of each semester; the Project subject is taught at the same time as other subjects and the evaluation is done for this subject as well as for the others, Aich (Aich, 2009) indicates that the project taught concerns the design of an architectural object and does not concern the project as a whole, the training does not also include communication and project management.

The testimonies of teachers regarding the flaws in the exact application of the methods recommended by the LMD raise several problems: such as the training of trainers who were not consulted and prepared for the reforms, the aptitude of the students for this spirit of entrepreneurship which is prepared from a young age, the university is only the culmination of a whole process of personal and collective constitution, the compartmentalization of subjects and sectors, isolation from the real outside world in addition to the problem of the language and the number of students who exceed the acceptable standard of supervision, the material resources which are lacking, etc.

5.1. Implications for Education and Teaching

As the literature review showed that learning by active method for the training of an entrepreneurial spirit or entrepreneurship is access to the project with immersion in the reality of things and with tutoring which ensures regular monitoring, we propose that the university must define other relationships with the outside world and organize itself from within. We recommend that it opens more towards the outside world to allow students a more structured and more formative immersion, which is in the advantage of both the student who will learn from the outside world and also the companies who will benefit from new ideas and innovation.

The incubator being a structure which welcomes students of varied profiles, it can constitute the meeting place of groups which can be formed by affinity of complementarity of Project. For example, an architect has the skills to design a project whatever its nature, but does not have the project management skills that an economist has, nor the technological and digitalization skills of a computer scientist. But together, they will be able to form a startup or a multidisciplinary company with more skills. The groups can be made up of multiple profiles because, as the teachers indicated, the compartmentalization of sectors does not contribute in any way to the advancement of the multidisciplinary objective that the LMD defends and which has otherwise remained a dead letter.

The startup will thus be made up of a multidisciplinary group. Multidisciplinarity appears among the objectives of the LMD system but no mechanism has been implemented to achieve it. Teachers must be trained in didactics to be able to adapt new postures to combine transmissible knowledge and constructive knowledge using an enactive method. Tools must

be provided and groups must be smaller. As for languages Students must have a solid background in languages from a young age.

6. Conclusions

The recent incentive for students to create their startup is an extension of that of creating businesses, started since the 2000s. It is a top-down decision emanating from the wishes of MESRS inscribed in the political wishes of a State which is puts it in tune with the international context and its political and socio-economic demands.

Structures were set up to support students in their business creation, and had the mission of information, awareness, reception and supervision: incubator, CATI, BLEU, CDE, were created, each with its own assignment. However, the issue also questions the educational and methodological aspect. This aspect was brought by the reform of classical education to the LMD system which aims to train responsible students, capable of taking charge of themselves to face the world of work and employment, either by creating their own business or through their integration into companies or to achieve an academic career. The LMD system is thus in the position of training the spirit of the company which is not necessarily of future entrepreneurs although it encompasses it. The reforms focused on the educational content, the organization of subjects, the progress of teaching and evaluation, included in the APC method, supposed to bring both pupils and students into this spirit of the spirit of business or self-support. On the other hand, between what a theory stipulates and its application a gap can widen.

The reform was not implemented due to multiple obstacles: training of trainers; the attitude of each student which cannot be put into a mold, the language, the means, the number of groups and above all the teachers who are not trained and prefer to ensure a level of knowledge than to launch themselves in directions which have no issues; which is legitimate because to achieve this spirit of care, efforts must be made from the start and a reorganization and consensus must be established between the outside world, the university and between the components of the university itself, as well as between subjects in the same sector, calling for a bottom-up process. The incubator being the place of convergence of different groups of students of different profiles, can be the catalyst for the formation of multidisciplinary groups which will have the strength to bring together complementary skills to face the world; an insertion in the external mode not only at the end of the training but also during the course, is more than necessary to complete the knowledge acquired in the universe and to be able to be effective and operational upon leaving the university.

In a next step, meetings between faculties and structures authorized for startup and entrepreneurship training should be organized initially to coordinate and implement the methods, pedagogies and actions necessary to train the spirit of enterprise which will give rise, among other things, to the creation of startups.

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