Journal of Arts & Humanities

Volume 10, Issue 03, 2021: 29-40
Article Received: 18-02-2021
Accepted: 16-03-2021
Available Online: 21-03-2021
ISSN: 2167-9045 (Print), 2167-9053 (Online)
DOI: https://doi.org/10.18533/jah.v10i03.2059

Reform Training: The Tunisian University Case Study

Nadia Ghammouri[1,*]

ABSTRACT

The university, like any constitutive and participative element in society, has a great role in the reconstruction of the individual. And it is supposed to improve knowledge and get rid of negative situation that threatens its weakening.

Our reflection lies in the efficiency of academics in their society and its effect on sustainable development, in which we will enumerate roughly the problems of the Tunisian University, the responsibility of each institutional component. Secondly the solutions shared by the cooperative program to reform this situation.

In this context, we will focus on the European cooperative programs in Tunisia, which aims at the development of scientific research. In this regard we will talk about TEMPUS, as a training program on Design for Sustainable Development of local craft. Then, the Horizon 2020 program, which integrates research and innovation, serving society. Also, the CLUSTERING, a relational network supporting innovation, training and promote economic development.

Keywords: University, Tunisian training, European programs, sustainable development.
JEL Classification code: 2059.

1. Introduction

In absolute terms, "University" allows us to continue our higher education. And it is, normally, a large institution for higher education and research, which must be better than that of other preparatory levels. It is made up of a multitude of different teachings. In which, one learns knowledge in a chosen field. Consequently, it is a specialization in a more precise course to prepare for the working life, with a work objective in view.

Also, a university is a coherent administrative unit with a defined legal status, public, private or possibly mixed. Under this legal and administrative direction, a framework for training and exchange emerges based on research production, conservation and transmission. Consequently, its role is to

* Corresponding author
1 Nadia Ghammouri, Teaching in Higher Education, University of Kairouan, Higher Institute of Arts and Crafts of Kasserine.
Email: nedia.ghammouri@yahoo.fr / ghammouri_nadia@yahoo.com

guarantee the right training for a good orientation. The principle of which is to disseminate knowledge under the best conditions and to fully play its pioneering role in the sustainable development of human resources and at the same time the modernization of the country.

Certainly, the university is a building block that is not rigid. On the other hand, it must be constantly evolved according to the movements of the scientific, cultural, political and social world. And in this university process, the teacher or scholar seems a fundamental and determining actor, in these situations, as long as he is supposed to call for structural and fundamental changes.

And, very clearly, higher education required successful pedagogy, which must be in a favorable learning environment. Essentially, this is a role of the academic who must be well prepared to overcome critical situations. And without doubt, a teacher must have skills in designing, planning and presenting things. Likewise, we need to have innovation and experimentation, as well as having the responsibility of diversifying educational strategies. As well as to act in the process, and to Contribute to educational projects in order to give a higher quality training, also, to contribute to the improvement of the statute of the establishment, by developing a research answering the necessary requirements of excellence that ensures the development of the entire team (students, staff and teachers) in order to achieve collective progress.

(…)

In this case, the university, like any constitutive and participatory element in the academic and citizen community, has not escaped the progress and the advent of teaching communication tools and techniques, of which all the university staff is invited in educational and other situations. Where, we must think about leaving an impact on those around us individual, state, scientific values and socio-economic world. Also, to get rid of the negative situation which weaken this university.

Our remarks and our reflection are situated in the context of the theme of the academic community and the question of the complementarity between the components of the university system. Also, within the framework of the efficiency of academics in their society likewise their effect on the sustainable development of higher education by updating of the teaching path. In this regard, our communication takes place, in which we will enumerate firstly, the problems of the Tunisian University and secondly the attempts of the university to reform this critical situation.

In this context, we will focus on a few programs for development of scientific research in Tunisia shared by the European Union. Namely, projects representing opportunities for collaboration between the university and civil society such as TEMPUS, a training program on handcrafted design, which was launched in Tunisia in 2014. In the form of a 3D project. Meaning, Design for the Sustainable Development of local craft productions), very innovative in the higher framework under a multidisciplinary approach which continues with the traditions of territory.

Secondly, we are going to study, the Horizon 2020 program which thinks of integrating research and innovation by establishing uninterrupted support throughout the process: from idea to marketable product. Also, put funding for research and innovation at the service of responding to major societal challenges. And support innovation and activities close to the market in order to create new business opportunities.

And we end up with identification of "CLUSTERING", a relational network that seeks to support innovation, promote the development of collaborative projects between research and industry in a well-identified territory and a given theme, where it brings together small and large companies, research laboratories and training institutions. A dynamic partnership, which brings together local, national and international public authorities.

In this regard, we will discuss the approach that the proposed university in which, launched its vision and strategy that revolve around clearly defined objectives shared by all stakeholders: the University and society. And think in a collaborative project between the scientific field and civil society. They need adaptation and openness to each other.

Faced with the complication of the establishment of Tunisian higher education which is undergoing transformation. In the sense that he has changed a lot and it reviewed to revise his courses. In order to better meet everyone's expectations: students and employability and to open up to the community. In fact, around this issue, there are questions that arose:

- What are the specific expectations of the teacher-researcher, next to the field of research, and students, who are interested in training for better visibility of the labor market?

- Does the expectation on the university continue to study only to end up with a diploma?
- Does it really give us the knowledge necessary for the job what we want to do?
- Are the attempts at foreign cooperation appropriate to our environment and do they meet our needs and our future?

2. The critical situation of Tunisian University

First, in this study which is almost documentary, we will remember those critical studies in social, economic and political enumerating the problems of the university institute. Where they have affirmed, so many times, that higher education in Tunisia suffers from a break-in, which is of course in national debates, since 2003, following the appearance of the Shanghai Ranking, which shows the downgrading of the Tunisian university. In fact, this ranking took into consideration criteria, which revolve mainly around scientific research by counting the acts of publication, number of citations in publications, number of scientific prizes, etc. In this case, we found that Tunisia was lagging behind.

This is due to several reasons, the emigration of academics, especially today, since there are Tunisian universities, which are in short supply, and which has formed a scientific Diaspora. The number of teacher-researchers who leave the country takes worrying proportions, according to the Ministry of Higher Education and Scientific Research, the number of emigrated skill managers exceeded 5,000 in the 2000s, as a result of this migration science slowed down the involvement of skills in the development of Tunisia. In the two tables below, a summary that reveals all the data on the distribution of skills, in a comparative study between the period 2000 and 2010:

Table 1.

Distribution of Tunisian skills abroad in 2000.

Regions Specialties	Europe	North America	Arab countries	Africa	Asia and Australia	Total	%
Teachers and researchers	475	219	181	08	07	890	20,13
Engineers and architects	414	319	214	22	03	972	22,00
Doctors and pharmacists	374	63	114	10	02	563	12,73
Computers	117	25	12	04	-	158	3,57
Lawyers	32	08	23	-	-	63	1,42
Other frames	626	302	375	466	06	1775	40,15
Total	2038	936	919	510	18	4422	
%	46,10	21,17	20,79	11,53	0,42		100

Source: Office of Tunisians Abroad

Table 2:

Distribution of Tunisian skills abroad in 2010.

Regions Specialties	Europe	North America	Arab countries	Africa	Asia and Australia	Total	%
Teachers and researchers	1106	598	316	17	43	2080	28,75
Engineers and architects	1129	472	283	32	20	1936	26,76
Doctors and pharmacists	657	90	124	19	02	892	12,33
Computers	322	27	24	05	02	380	5,25
Lawyers	50	08	31	-	-	89	1,23
Other frames	929	405	448	63	12	1857	25,67
Total	4193	1600	1226	136	79	7234	
%	57,96	22,12	16,95	1,88	1,09		100

Source: Office of Tunisians Abroad

Also, an obvious deterioration of the scientific quality for political reasons, affirming the declaration of Mohamed Mestiri *"to buy social peace, the Ben Ali regime had transformed the Tunisian universities into factories for graduates, to the detriment of the needs of the economic fabric of the country. As a result, the number of unemployed higher education graduates has almost quadrupled in the space of 12 years, from 71,200 to 259,600 between 2006 and 2017 ".* This results from the lack of qualified personnel at the didactic level. Without forgetting the pedagogical training workshops, intended to develop the capacities of new teacher-researchers who were absent. And this seemed to be one of the main handicaps of the Tunisian university.

Again, it should be noted the problems around the administration in the higher institution as regards professionalism, whether at the level of pedagogical coordination at times or that of the effectiveness of communication with the students. Without forgetting the "SALIMA" educational system which has helped to increase the number of graduates without thinking about scientific quality, and which is interested in certification without conceiving of carriers.

Also, when we talk about the geographic location of the university and its components (laboratories, units and research centers) which relate to the impacts of the student and the teacher-researcher, we touch the enormous boredom that emanates from this situation.

Despite these difficulties, many efforts, to save those who remain of this institution. Challenges persist such as the efforts of academics who seek to promote scientific research and stimulate initiative and excellence and even to design the business world to create effective governance.

Higher education presents LMD courses (license, master and doctorate) in various disciplines, based on a very strong theoretical base with good practice for the sectors that require it in the form of workshops or tutorials and internships regardless of perception or professional. In a process, where the academic staff has made a lot of efforts to professionalize these courses and develop them internationally.

There are also a lot of concerns, which is what the general direction of university renewal is doing, which was trying to organize study days to tackle a very important subject around "University-Business: training, Insertion". The first day was May 07, 2018, on the design and implementation of standards (training standards, job standards, skills standards) with reference to methodology and best practices. The objective of which is to provide the Tunisian Higher Education system with a clear national framework of training offers for better employability.

In fact, this day is organized within the framework of the "PromESsE" project, around more than 150 participants were gathered (members of national sectoral committees, members of higher education institutions, industrialists, presidents of chambers of industry and trade and representatives of the Ministries).

The second was launched on June 27, 2018, to allocate the benchmarks (Professions, Skills and Training) and the Co-Construction of training courses, for the benefit of the Universities of Sousse, Monastir and Kairouan as well as the higher institutes of technological studies with a active participation of the members of the sectoral committees of the Universities concerned as well as the representatives of the private sector and professionals from the central region. This program was in the form of round tables, where experts discussed LMD's planning and its effectiveness in relation to the quality of training and fields of employability.

Without forgetting, the 4C program (French abbreviation): Career and Certification Center of Competences, a structure attached to the university, whose mission is to support students to facilitate their integration into the employability market, also to be based on these indicators in the three phases: output / outcome / impact.

Several attempts seek to reform the education system, but before the university situation. In this article we will talk, more particularly about the European programs shared with the Tunisian university, about its intentions, its objectives while emphasizing its limits.

3. Shared solutions in the field of university development

3.1 TEMPUS 3D, development program

First, we will point out the "ERASMUS" program, that of the European Commission. It covers several fields, education, training, youth and sport.

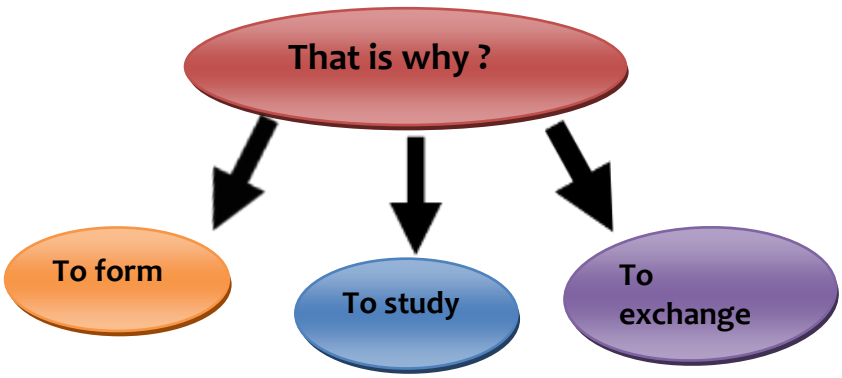


Fig 1

In fact, the "WHY" of this program is to go to study, to train in a company, to learn foreign languages, to meet and exchange with other European citizens, which is indeed very beneficial and very educational.

It is a program funded by the European Commission, which is intended for an organization that carries the project, but not individually. This funding is in the form of scientific projects like "TEMPUS", an experimental example, which we will detail and explain in the field of art, design and crafts. What is called the TEMPUS 3D project.

TEMPUS, a name based on the acronym "Trans European Mobility Program for University Stadies". It is a European program aimed at providing support for the modernization of higher education systems in the countries of Central and Eastern Europe, South-Eastern Europe, Central Asia and the Mediterranean.

In this article we will discuss the project of European cooperation and the partnership between University of Florence DIDA in Italy, Polytechnic of Turin in Italy, University of Barcelona in Spain, Private University in Vila Nova de Cerveira, Portugal and Tunisia presented by three Universities: Kairouan, Sousse and Mannouba.

In fact, the territory, this time, is Design, as one of the assets for the competitiveness of companies and territories in the company of the quality of life of communities in relation to the natural, cultural and social environment.

3D, Design for the Sustainable Development of Craft Productions. This is an opportunity, which aims to develop a 2nd Cycle training program on design, an innovative 3D Master within the framework of higher education, by involving training institutions of Tunisia in the sector of craftsmanship and art, while creating collaboration between designer-artist and craftsman, between creative design and know-how.

However, this higher scientific training framework involved three training institutions in Tunisia: the Higher Institute of Arts and Crafts of Kasserine, Higher Institute of Fine Arts of Sousse and the Higher School of Design Sciences and Technologies of Den Den.

So, the objectives of this course are to represent a very strong theme to create a kind of interdisciplinarity and interculturality between tradition, crafts that are found in artisanal production and innovation in the creation of design.

In this sense, the desired training in the 3D Master, will consider a multidisciplinary approach, between anthropology, ecology, project science, economics of innovation, marketing, project management and communication, merged by a systemic approach to creativity and innovation, in a

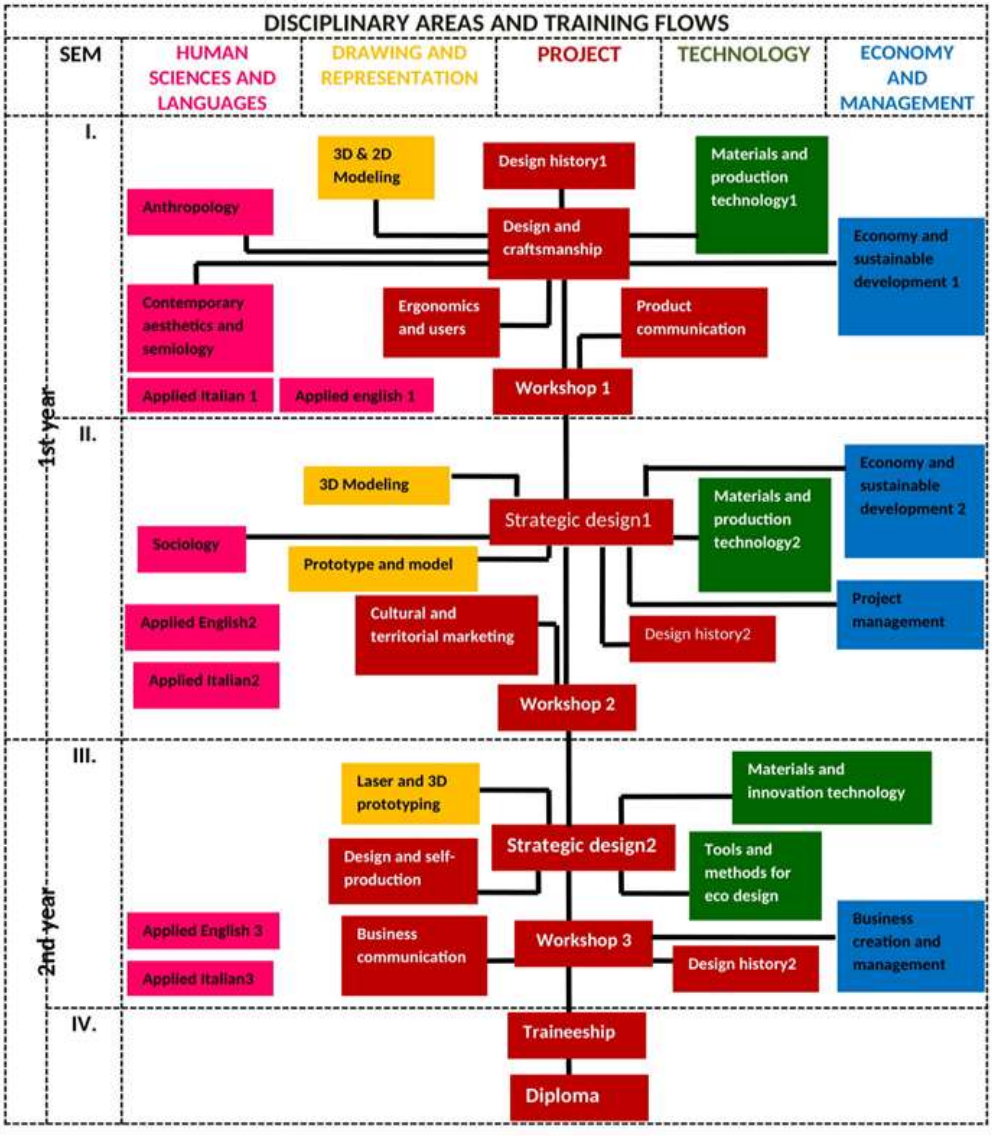
training course dedicated to design for the sustainable development of territories, in which it is very important to combine tradition and innovation, reflection and reappropriation of cultural identity and openness to modernity, heritage conservation and development in a sustainability perspective.

The purpose of this Master corresponds to its raison d'être to research for the benefit of elements of innovation, without distorting local production in a sustainability approach. In this context, they necessarily called for sharing the project with local artisans and producers in a participatory approach.

Therefore, this course proposed by the European Commission offered an opportunity to young students and holders of craft projects in order to improve the employability market, also to create a strategy that meet the expectations of everyone: to academic training and professionalism in an atmosphere of exchange between artisans and designers, between teachers from different universities either in Tunisia or other foreigners since the study plan requires a fairly varied group of academic researchers specializing in humanities and design from all university partners. Indeed, this interdisciplinary and multinational aspect contributes both to the qualitative development of scientific background as well as to the qualitative and quantitative interpretation of the design project. *"Thus, by opening up to the human sciences, our students will become actors within the framework of this responsible approach to local sustainable development by thinking of the territory, production, service and society. Therefore, we hope to communicate the impact of the 3D master's experience by starting from concrete examples drawn from the work of our students, their research and documents"*. The following table emphasizes the 3D Master's program.

Table 3.

3D Master's program.



"This little educational anecdote served as a conclusion to the theme of the scope and relevance of meanings that everyday objects have, meanings to which, in general, we pay little attention. Seeking to innovate in a traditional cultural system inevitably gives rise to a constant debate about what belongs to us and what is foreign to us; on the ease that we experience when we evolve in a heritage confirming our belonging to a group, as opposed to the feeling of strangeness or the curiosity that one can feel for objects and customs which are associated."

3.2 Horizon 2020 program

Horizon 2020 is a new European program dedicated to research and innovation, which started on January 1, 2014. In fact, it finances resolutely interdisciplinary projects around specific priorities.

This program has just supported funding for the work of scientists and industrialists who are in partnership with the European Union for the period 2014-2020. First and foremost, it is interested in strengthening the position of the European Union in the world in the fields of research, innovation and technology. As well as ensuring the competitiveness of Europe, by investing in technologies and professions of the future, in the service of "smart, sustainable and inclusive" growth. Also, it takes into account the concerns of citizens (health, environment, clean energies ... etc.) and provide elements of response to societal challenges.

3.2.1 Scientific excellence

In fact, the plan of this program has developed around three priorities: Scientific excellence, where it encourages fundamental research and opens new paths towards future and emerging technologies, by supporting collaborative, interdisciplinary and following innovative ways of thinking. And provide Europe with world-class research infrastructures accessible to all researchers in Europe and elsewhere. Thus, support their mobility.

3.2.2 Industrial primacy

As a second priority, this program took into consideration, industrial primacy, since innovation in scientific research is mainly supported by public and private partnerships. While they are privileged in terms of technology, information and communication (T.I.C), nanotechnologies, biotechnologies, etc. In addition to providing support to innovative micro, small and medium-sized enterprises (P.M.E. French abbreviation), financing to overcome the risks of failure.

Finally, a third priority, which Horizon 2020 has just taken into account, noted: “societal challenges”. In this context, it promotes interdisciplinary projects to meet major challenges in the fields of health, sustainable agriculture, climate, transport, clean energy, etc. which Europe is facing and which no member state can claim to tackle alone. See the architecture of the program in the following table:

Table 4.
The Horizon 2020 program.

Scientific excellence	Industrial leadership	Societal challenges
European Research Council. Marie Sklodowska-Curie actions. Future and Emerging Technologies. Research infrastructures.	TIC Key Enabling Technologies (KET). Innovation space in SMEs. Access to risky financing.	Health, well-being and aging. Food security, bio economy ... Smart, green, integrated transport. Climate, environment, raw materials. Inclusive and innovative societies. Safe societies.
Spreading excellence and widening participation		
Science for and with society		
European Institute of Innovation and Technology (I.E.T)		
Joint Research Center		

Source: the portal (http://horizon2020tunisia.org/architecture-du-programme/)

- How has the Horizon 2020 program been deployed?

The HORIZON 2020 Research & Innovation framework is coordinated by the European Program Management Unit at the Ministry of Higher Education and Scientific Research. And it is concerned with creating different opportunities, in the form of calls for projects.

As a result, they created a network of national contact points (P.C.N.), a network of experts piloting European programs to support project leaders. Their role is to inform, raise awareness and advise them on Horizon 2020 funding opportunities. While identifying researchers likely to respond to calls for projects and solicit them.

The objectives of this program are first of all to motivate individual knowledge through curiosity by creating modes of innovative thinking, to give researchers opportunities for training and career development as well as to strengthen their skills by following training or internships in another country or in the private sector. These offer them an opportunity to acquire new knowledge and experience in order to reach their full potential.

But there are also challenges for Tunisia, underlined Prof. Olfa Zribi, executive Director of Horizon 2020, in the portal *"Our ambition is to enhance socioeconomic development, to create an ecosystem favorable to research and innovation and piloting strategies to respond to the challenges of society. The main objective is to ensure the success and to perpetuate the association with the EU. To achieve this, our mission is to establish a collaborative system based on the collective intelligence of all stakeholders. "*

This framework helps the reform of scientific research and its infrastructure, to position itself on an international scale in addition to finding solutions for the fields of employability and its embarrassing situations.

4. Clustering, a lever for economic and university growth

Years ago, cluster promotion projects were recognized, many by international development organizations, of which they are recognized as an effective initiative to strengthen the capacity of the private economic sector but in a participatory way in partnership with the institutional environment of each region, with a view to sustainable development. It is a strategy that seeks to bring together all formative educational efforts as well as the industry.

To this end, the cooperative program, state officials designed *"scientific and technological training to closely link academia and industry and to promote knowledge transfer (...). The main tool of this approach was the work-study training program, that is to say a training process which alternated periods of work for the students in companies and at the university ".*

First of all, in this part we will explain the process of CLUSTERING. The word Cluster was born from the observation of the spontaneous tendency of industrial companies which aspire to come together to share the advantages linked to their proximity and to the nature of the economic relations that are established between them. *"This phenomenon was analyzed at the end of the 19th century by Alfred Marshall, an English economist who studied booming industrial cities like Birmingham and Sheffield".*

Recalling, the definition of the word Cluster: *"This is a certain mode of organization within:*

1. *A conglomerate of companies in the same industry.*
2. *Geographically close.*
3. *Maintaining cooperative relations with each other.*
4. *Coordinates by an animation function.*
5. *Building on partnerships with local institutions.*
6. *Implementing collective projects.*
7. *To meet common challenges. "*

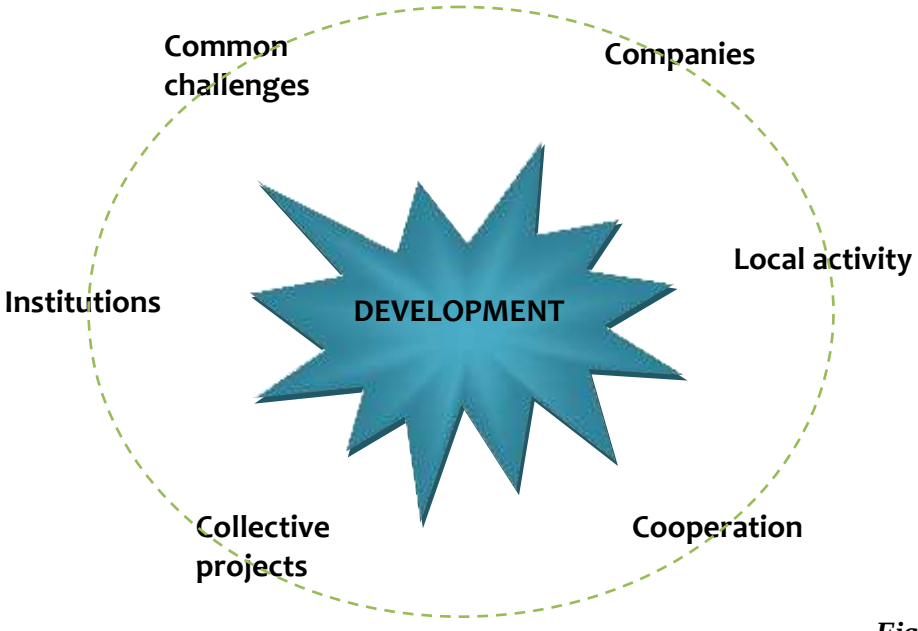


Fig 2

As a result, the cluster is not an industrial zone, but an active network that seeks competitiveness if the territory in order to strengthen public policies in dialogue with the private sector and improve infrastructure and access to information, as well as entrepreneurial competitiveness.

Today, cluster paths are a subject of great academic and political enthusiasm. "Cluster" is presented as the attractive concept and it is very fashionable. Today, the notion of cluster has very quickly moved from the field of analysis to that of the practice of all nations. And the public officials seeing that in this mode a creation of opportunities to improve the competitiveness of their productive systems.

In Tunisia, the Cluster process began in the mid-2000s, as it has developed very rapidly if the number of clusters has been increased. In fact, it is AFD (French development agency) and ONUDI, French abbreviation (the United Nations Organization for Industrial Development) which have supported the dissemination of this phenomenon in Maghreb countries such as Morocco, Algeria and Tunisia. . Subsequently, the latter has become a stimulating context, since it seems to be a space for cooperation and sharing.

The cluster seemed to be a relational network between important partners such as: Companies, offices, university institutes,… and training centers which can provide solutions such as the concentration of companies, and the resulting advantages appear as vectors of innovation in the modes of training and competitiveness in regional economies.

This program system aims to improve skills, increase opportunities, primarily for the economy, but also to seek to guarantee the qualification of project leaders and new graduates. In addition, to create a strategy to overcome all the problems related to the designs and promotion of the projects.

Today, in Tunisia, the process of clustering can be found in several sectors such as: hotels, olives, agronomy, textiles, etc. It all depends on the situation and the specificity of the region, whether geographic or economic.

In this context we will talk about clustering in the cultural and creative industries since these clusters seemed to be the most dynamic in terms of collaboration between economy and know-how in art, crafts and design. And in this area we will detail two workshops in two different sectors: the first is in ceramics "Art of the table in Nabeul" and the other named "Chain of values: the valuation of the marble stone of Kasserine and Kef", who have taken as a partner higher institutes such as ISAM Kass (Higher Institute of Arts and Crafts Kasserine) with marble. And ISBAN (Higher Institute of Fine Arts Nabeul) with the art of the table. In coordination between scientific academy and industrial projects which are purely economic. With the aim of improving the qualification of the workforce also the quality of production while targeting the international market, in a grouping of financing but also the creative conception of an academic and the know-how of an industrialist who can contribute to the development of companies and to both the scientific quality of opening up to the functional world and of enriching a geo-resource such as marble or a heritage which is in the process of disappearing like pottery.

For the first time The *"Table art"* cluster brings together a variety of support structures such as the National Handicrafts Office, the Higher Institute of Fine Arts in Nabeul, the arts and crafts center, the Chamber of Commerce and Industry of Cap Bon, business leaders, artisans and designers, to allow its stakeholders to combine their strengths through a unique exchange of know-how and expertise, promoting development and the promotion of endangered crafts for a single common objective: the preservation of the cultural heritage of the city of Nabeul and the promotion of its crafts.

Likewise, with the experience of valuing marble stone from the Kasserine and Kef region, a relational network that aims to develop this sector. This seems wealth, which is not valued. But, also who does not have an exploitation study plan for all the shaping processes, within the framework of *"how to exploit this local treasure?"*

Affirmed, Talel Sahmim (2014), national coordinator of the development project of "clusters" in the creative and cultural industries: *"The aim of this workshop is to explain how to transform individual creativity into a collective impetus of Tunisian artisans which allows to develop a dynamic group to achieve common business objectives and to achieve economies of scale".*

5. Conclusion

Still, the university is the core of all development for the citizen. And the university and scientific groupings in a territorial coordination for a shared project present an asset favoring the perfection of the training, also the research as well as to improve the student life those which one

touched with the experiment of the TEMPUS program, clusters and others with national and international associations.

In fact, these programs help us to think about a reformulation of the spirit to go beyond the classic training models towards a more innovative and current model linked to our environment and our territory, which has specific local characteristics, i.e. national or regional linked to socio-political measures in relation to experience and space. And to have organized this territory, we must think about harmonizing the levels between all the individual and space components to easily allow insertion in the search for effective solutions to guarantee a good result either in scientific fields or in fields of employability...

Consequently, if we want to change and think about a development project, we must first think carefully about the constraints that arise for the competitiveness of the country's economy as well as the brakes, related to the modes and capacities of operation and organization of the political and social country. And as a result we are preparing to establish a good territory far from any type of corruption which will be a factor of development with a significant mass allowing to innovation and overcoming all failures which hinder the reformulation of any critical situation.

Finally, the university as a main constituent in each country, can it be the object or the objective? Or both at the same time in a territorial sustainable development program?

Acknowledgements

My deep gratitude goes to the University of Kairouan, all the staff, the teaching partner of the team and the astonishing academic, whose creativity and the joy of teaching who participated, on both sides in the development of this article idea, a rewarding experience and a thoughtful adventure.

My thanks and profound gratitude go to teachers: Mondher Harhoury and Tariq Al-Khouni, who watched over the English translation evaluation and gave me the best guidance.

ORCID iD

Nadia Ghammouri https://orcid.org/0000-0003-3010-8920

References

Ben Kahla, K., (2017). The Tunisian University Facing the Democratic Illusion. Retrieved from http://www.businessnews.com.tn/ 21- 03/19:59.

Ben Kahla, K., (2002) "The Tunisian university facing the dilemma universality / globalization: Reflections on the "university divide" and the modes of structuring higher education in Tunisia ", Yearbook of North Africa. volume XL. CNRS EDITIONS. Retrieved from https://aan.mmsh.univ-aix.fr/Pdf/AAN-20002-40_22.pdf

Largier, A., Lartigue, S., Soulard O., Tarquis, C., Guery, P. (cartography). (2008). GLOBAL CLUSTERS: Crossed views on the theory and reality of clusters. Identification and mapping of the main international clusters, Study carried out on behalf of the France's Island Regional Council. © IAURIF - 6.06.010 - January.

Pierre P., (2013)."Dissemination of the cluster approach in three Maghreb countries (ALGERIA - MOROCCO - TUNISIA)": Definition of an operational methodological toolbox, coordination by Giovanna Ceglie (ONUDI), Maurizio Cascioli (AFD).

Pommier, P., (2014). Clusters in the Maghreb: Towards a specific Maghreb cluster model", IPEMED, studies and analyzes July.

Mestiri, M., (2017). "Tunisian university crisis: teacher exodus, austerity and political awkwardness", Nawaat, Retrieved from nawaat.org/portail/06-09/.

Office of Tunisians abroad. Retrieved from http://ote.nat.tn/

Samet, K., (2017). The brain drain in Tunisia", Hommes & migrations [Online], 1307 | 2014, posted on 01 July. Retrieved from URL: http://journals.openedition.org/hommes&migrations/2891;DOI:10.4000/hommesmigrations.2891

The Horizon 2020 portal: http://horizon2020tunisia.org/architecture-du-programme/

Calvera, A., Giorgio, D., Yosser, H., Khaled, I. & Povedano, R., (2017). Design and craftsmanship: possible bonds of hope. Retrieved from (https: //www.iemed.org/observatori/arees-danalisi/arxius-adjunts/quaderns-de-la mediterrania/qm24/design_artisanat_espoir_QM24.pdf) http://www.leaders.com.tn/uploads/FCK_files/ATDVU%20FR%20(2).pdf)