

## The Algerian Universities at the Cross Road: Which Missions?

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Abstract:	ملخص
<p>The Ministry of Higher Education restructured study's hierarchy by introducing the LMD system. Yet, both local and foreign enterprises plaint inadequate educated workforce as one problematic factor for doing business (see <i>World Economic Forum Reports</i>). Furthermore, university-industry collaboration in R&amp;D is so week (<i>GCR, different reports</i>), reflecting the limited role of universities in problem-solution puzzle.</p> <p><b>Key words:</b> Third mission, entrepreneurial university, mode 2, triple helix</p> <p><b>JEL:</b> O3, P4.</p>	<p>قامت وزارة التعليم العالي، منذ ما يناهز العشرية، بإعادة هيكلة النظام التعليمي من خلال إدخال نظام الإجازة، التحكم والدكتوراه (المعروف ب: ل.م.د) وهذا من أجل توفير يد عاملة مؤهلة كفاية لولوج عالم الشغل. غير أن معظم الشركات المحلية والأجنبية على السواء تشتكي من هذه الأخيرة بإعتبارها من بين عوائق محيط الأعمال في البلد (انظر تقارير المنتدى الاقتصادي العالمي). وعلاوة على ذلك، تشير التقارير إلى محدودية وضعف التعاون بين الجامعات والصناعة في مجال البحث والتطوير وهو ما يعكس الدور المحدود للجامعات في خلق مناصب شغل أو الثروة</p>

## Introduction,

Since the 2000s, Algeria has been engaged in ambitious five-year programs aiming at divorcing underdevelopment. Instructions have been made to engage university to whole economic and societal development. Accordingly, ministry of higher education restructured study's hierarchy by introducing the LMD system. Almost all Algeria universities adopt this approach and create, as their international homologues, different second cycle specialties as a respond, they believe, to market pressures.

Yet, both local and foreign enterprises complaint poor educated labor force as one problematic factor for doing business (see *World Economic Forum Reports*). Besides, university-industry collaboration in R&D is so week (*GCR, different reports*), reflecting the limited role of universities to approaching the problem-solution puzzle.

The paper sheds light on the new missions that universities in Algeria should engage in. It examines whether the current hierarchy fits with market demands, and what are the outlooks and encounters to integrate university in the everyday issues?

The paper's structure follows the stream of presenting a theoretical background on the topic of third generation universities, in first stance. The characteristics of modern university are treated in second place. In a third point, the study exposes the current situation of Algeria's higher education. Results and recommendations conclude the paper.

## Theoretical background

One characteristics of modern life is the hegemony of Knowledge as an engine for economic development and social prosperity (*A. Frane, 2014; K. Thorn, M. Soo, 2006*). This means that sectors with high value of R&D creatitivity conduct the remaining ones and the production, dissemination and application of Knowledge come at front-head. As Knowledge is a complex and evolutionary process, its production and transfer necessitates a cooperative system between different spheres at various levels. Thus, the emergence of new mode of knowledge production (national innovation system and triple helix, for instance) has been seen as a mandatory arrangement for the implementation of the Knowledge-based Economy. Within these models, university overtakes its traditional tasks of teaching and research. It undertakes new priorities and engages in business world as a partner or entrepreneur. This shift refers to the emergence of third generation university with novel missions for higher education.

It is necessary to present three stages of development that university saw.

We can say that the origin of university is related to religion studies. Many lectures from the antic past were religion spoken-man having the permission to organize public lectures; however, the establishment of university, independent of monasteries, churches and Mosques was funded by many famous Muslim scholars such as *Abu Hanifa ano'man, Ibn Sia and Abou hamid el-Gazali*. During the Islamic golden era there were numerous institutions that provide higher education; the famous one is the House of wisdom which is considered to be the first university in the world in the

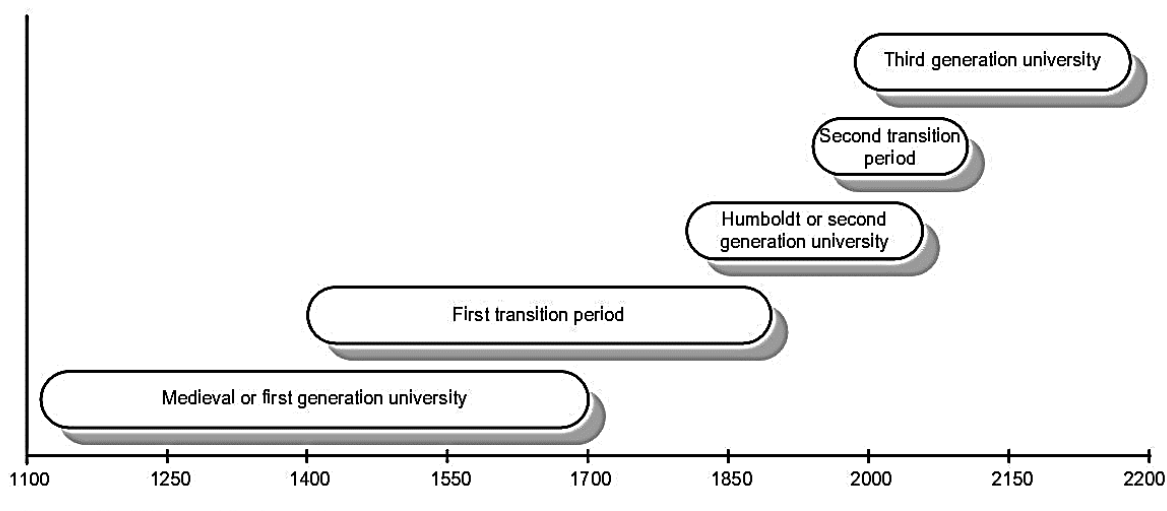
proper term of the word (see *Wikipedia* and *Wala' Wajih abdelhamid abdelghani 2009*).

As knowledge traversed to Europe after long period of middle-dark age, many places and scholars appeared. Reims, Tours, Angers, Laon can be seen as forerunners of the universities established later (*J.G.Wissema, 2009*). The existing universities, which spread rapidly between 1200 and 1300, were considered to protect religious thoughts and guidance and missed the permission to conquest knowledge or sciences. Nonetheless, the rapid change that the world saw (the spread of printing technology, the conquest of new geographical areas for example) created new ground for university. The rise of new thinking streams, especially in theology, favored rich debates among scholars within and outside university, leading to a first step toward questioning existing knowledge. Universities thus passed from pure act of learning to investigating, leading to a novel step, observation. Indeed, even the observatory approach was first, seen as rivalry to university's principals; applied sciences became the mainstream of sciences at universities. The second principle mission of university had just established: the university became sovereign vis-à-vis religion and raised independent thought characterized by experiments and objectivity; the HUMBOLDT university model emerged.

The HUMBOLDT University favored researches based on experiments in order to draw final transparent argumentations, which will be verified. According to *J.G.Wissema (2009)*, only what was validated by observation could be seen as true rather than authorities' conclusions. This model still exist in modern era with some limitations, leading to the conception of new generation university accompanied by

more engagement with environment and society. Hence, second transitional period has been commenced as a respond to international trends characterised by global integration, partnership, entrepreneurial activities...etc. The following figures sums-up the historical development of university (western approach)

Figure 1: University Development through Time



Source: *J.G.Wissema, 2009*, p 4.

Universities, in the modern era, introduce themselves in the business world as partner with different parties; they may collaborate with public research laboratories or with industrial sector. Even, they engage in trilateral partnership to encourage Innovation and knowledge transfer. This means that university go beyond the 'Ivory Tower' (*D. Bok, 1982*) and became a pivotal actor in innovation system, national

competitiveness and economic and social development. Its importance has been increasing by the rise of Knowledge-based economy as modern mode of economic thought. The knowledge economy encouraged university to shift from mode2 of innovation to more complicated mode: triple helix, quadruple helix and quintuple helix. The entrepreneurial university (or academic entrepreneurial) term appears as a consequence to describe the entrepreneurial thinking in addition to basic activities of learning and research. In a modern market driven society the *academic entrepreneur* is the link between the academic world (= oriented toward knowledge) and the commercial world of the societies (= oriented toward innovation) (*Elias G. Carayannis 2013*).

It seems that at each epoch, university follows the evolutionary concept. Its characteristics depend according to environment and events. As the table shows, the first type concentrates on education tasks as its role is centred toward protecting religious believes and Devin guidance. At that stage, Latin language was seen as lingua-franca with universal orientation. The second type introduces research. This is the result of discovering surrounding environment and natural physical phenomena. Experiments give birth to new scientific disciplines constituting modern sciences. However, researches was carried in one discipline and done by national language. Much universities of that epoch were national entities carried out research to respond national demand. The last type focuses on the commercialisation of know-how and knowledge transfer. It has global perspectives and uses English language as reference for researches, which grow to incorporate different disciplines. Researches are done to create value, the principal role of modern universities.

*Table 2: Characteristics of the Three Generation Universities.*

	Characteristics of the:		
	First generation university	Second generation university	Third generation university
<b>Objective</b>	Education	Education plus research	Education and research plus know-how exploitation Creating value
<b>Role</b>	Defending the truth Scholastic	Discovering nature	Modern science, interdisciplinary Professionals and scientists plus entrepreneurs
<b>Method</b>	Professionals	Modern science, monodisciplinary Professionals plus scientists	Global English University institutes
<b>Creating</b>	Universal Latin Nations, faculties, colleges	National National languages Faculties	
<b>Orientation Language Organisation</b>	Chancellor	(Part-time) academics	Professional management
<b>Management</b>			

Source: J.G.Wissema. 2009.

As university became more engaged in economic and social development, developing countries draw novel strategies inducing higher education to take initiatives for further development. Algeria, as an example, adopts new structural change by vanishing classical system, one adopted nearby independence, in favour of LMD system, which is considering as more suitable for economic and social pressures. The following point examines the development of Algeria's higher education.

### 1- Higher education in Algeria

According to a report published by higher education ministry, the Algerian university saw four major phases: 1) The inauguration of Algerian higher education, established just after independence; 2) First reforms of 1971; 3) The consolidating and rationalising of universities as a response to events; 4) the adoption of new System: the LMD. Our interest will focus on the last phase.

Since 2004, Higher education in Algeria saw a remarkable break with traditional system. This system which is inspired from industrialised countries, characterised mainly by shortening years of study. The LMD is structured over 3 cycles totalised by 8 years of study with Doctorate diploma as higher qualification. This was totally different from the traditional system, in which studies are divided into short and long period. The first and primordial characteristic of this system is the progressive orientation of student according to his personal or professional project. The statistics show that there is a growing number of enrolled students, from 1034313 in 2009 to 1077945 in 2011, an increase of 4.2% in two years. Two third of them are enrolled in social sciences, less than one third in technology and exact sciences and less orientation to medical sciences. However, 23% of total enrolled students in 2011 finished their studies. As a report shows, there is a decline in the rate of return which was 1/4 in 2011, 1/8 in 2000.

In addition to this figure, majority of Algerian universities launched second cycle formation 'Master' since 2007 and engaged in third cycle formation since 2009. Yet, majority of second cycle formation is an academic Master, meaning that there is no orientation to Market need. This state led to less performance of Algerian universities at national and international level. At national level, the failure can be recognised by the refuse of collaboration in R&D between industry and higher education institutes. Indeed, Algeria is ranked 146 out of 148 in term of Industry-University cooperation. This reflects the quality of both scientific research institutes and the quality of educational system (133/148).



As an essay to validate the present situation of Algerian university, the following tables summarise second cycle formation offered by universities during 2007-2011.

**Table 3: Number of second cycle formation and its partition by domain (2007-2011)**

		years				
domaines		2007	2008	2009	2010	2011
	Arts	2	1	1	1	2
	LLE	8	12	8	18	8
	MI	30	30	63	38	4
	SECG	10	58	38	44	24
	SM	19	57	49	30	2
	SNV	25	65	53	55	13
	ST	76	167	202	137	5
	STAPS	3	1	2	15	2
	STU	5	10	8	12	1
	LLA	0	0	16	33	6
	LCA	0	0	0	1	/
	DSP	0	2	14	29	30
	SHS	0	14	30	87	24
	<b>TOTAL</b>	<b>178</b>	<b>417</b>	<b>484</b>	<b>500</b>	<b>121</b>
Type of Master	Academic	159	377	451	467	117
	Professional	19	40	33	33	4
As % of total	Academic	89,33	90,41	93,18	93,4	96,69
	Professional	10,67	9,59	6,82	6,6	3,31

domaines		2007		2008		2009		2010		2011	
		A*	P*	A	P	A	P	A	P	A	P
	Arts	2	0	1	0	1	0	1	0	2	0
	LLE	8	0	12	0	7	1	17	1	8	0
	MI	26	4	23	7	60	3	32	6	4	0
	SECG	6	4	53	5	36	2	42	2	24	0
	SM	15	4	52	5	46	3	30	0	2	0
	SNV	19	6	55	10	49	4	51	4	10	3
	ST	75	1	159	8	185	17	122	15	4	1
	STAPS	3	0	0	1	1	1	15	0	2	0
	STU	5	0	8	2	8		10	2	1	0
	LLA	/	/	/	/	16		33	0	6	0
	LCA	/	/	/	/	/	/	1	0	/	/
	DSP	/	/	/	2	13	1	28	1	30	0
	SHS	/	/	14	0	29	1	85	2	24	0

Table 5: Repartition of second cycle formation by nature by domain (2007-2011) \* A: academic; P: professional

A quick lecture of the tables suggests that almost all empirical domains which register great number: ST namely is basically academic Masters, whereas others offer a purely academic formation (SECG, SNV). Further, even domains of the knowledge-based economy (MI) still provide theoretical learning. In 2008 there are 7 Professional Masters; in 2011 all masters are theoretical- based lectures. This situation means that a weak collaboration between market needs and university dominates leading to miss-formation of labour force. A second implication resides in the fact that Algerian

laws forbid professors and lecturers to occupy other function, the institutional rigidity handicaps them to approach real needs of markets and their higher formation offers (masters and doctorates) relies on their initial formation, purely academic. And many negative results emerge. Scientific productions, measured as numbers of published articles decline as compared to other countries (see table bellow). Second, less

	China			USA			Tunisia			Algeria		
	P.ex	S.Ar	Sc.en	p.ex	S.Ar	Sc.en	P.ex	S.Ar	Sc.en	Pex •	S.Ar	Sc.en
1973			0,211			48,668			2,43			
1986	2.081	<b>2911</b>	3,162	4,76419	<b>178266</b>	59,742	5,879	<b>76</b>	5,647	7	<b>81</b>	
1992	1.868	<b>6956</b>	2,841		<b>198864</b>	77,819	5,755	<b>131</b>	9,467		<b>120</b>	11,445
1999	1.906	<b>15714.7</b>	6,750	5,03685	<b>188004,1</b>	72,826	6,271	<b>256,8</b>	17,230	6.6	<b>185,4</b>	14,241
2005		<b>41603.6</b>	19,407	6,45157	<b>205564,6</b>	82,178	6,452	<b>571,3</b>	30,853		<b>350,3</b>	21,161
2009		<b>74019.2</b>	24,346	5,43391	<b>208600,8</b>	89,082	6,506	<b>1022,4</b>	34,397	4.34	<b>606,5</b>	30,787

collaboration with industry lead to an isolation of university vis-à-vis the surrounding environment. However, most drastic result is the increase of unemployed graduates (5.8% in 1991; 15.7 in 1995; 19.8% in 2008 as % of total unemployment) which underlies brain drain (emigration rate of tertiary educated: 8.3 in 1990; 9.5 in 2000 as % of total tertiary educated population).

Source: Author's elaboration using World Development Indicators data (2013) (statistics as in xls format).

### 3. Recommendations

The current situation of Algerian higher education necessitates a profound revision. This efforts result basically from the mobilization of different strands. As for

establishing a convenient environment of collaboration, industrial sector may create initiatives by inviting university to participate in discussing challenges and drawing its policy. This can be enforced by funding prominent researches and not only by traditional form of partnership (sponsoring for instance). On the other stance, it is imperative to draw a clear innovation policy. Up to date, authorities omit the importance of knowledge and innovation as a source for growth and competitiveness. The result is that innovation themes either within government discussions or academic activities is an unexciting subject. Yet, changing attitudes by establishing a solid system of innovation, results in a more engagement of university. One other effort consists of changing laws to create mobility of educated labour force to occupy other function to reduce the gap between university and industry. This will establish a trust and help to spread social capital network among different spheres, thus promoting triple helix culture. To conclude, an autonomous university improves its ability to search strategic alliances with its environment and encourages it to propose fruitful initiatives in term of formation, creation and dissemination of knowledge and innovation.

#### 4. Conclusion

The failure of higher education to embrace new missions reflect their limited role in promoting growth and leading the economic and political act; further, this means that Algerian Universities belong to HAMBOLDT model of university, which focuses on learning and primary research. The lack of adopting professional masters explain the imperfect collaboration between our Professors with the exterior environment.

This fact reveals the lack of trust and absence of communication between university and the industrial sector, which is further handicapped by the weak institutional aspect. Therefore, the national universities are far to endorse the third mission that embraces wider environment and engage in entrepreneurial activities.

### References

- 1- Algeria's Ministry of Higher education and scientific research.
- 2- Brennan.j et all. 2004. *The Role of Universities in the Transformation of Societies*. Centre for Higher Education Research and Information. London.
- 3- Bok, Derek. 1982. *Beyond the Ivory Tower*. USA.
- 4- Bo Göransson, Claes Brundenius. 2011. *Universities in Transition: the Changing Role and Challenges for Academic Institutions*. International Development Research Centre. Canada.
- 5- Datta. S, Saad. M. 2011. *University and innovation systems: the case of India*. Science and Public Policy, 38(1), 7–17
- 6- Djeflat. A. 2009. *Universities and scientific research in the Maghreb states: power politics and innovation systems*, Int. J. Technology Management, Vol. 45, No.1/2, pp.102-103.
- 7- Elias G. Carayannis. 2013. *Encyclopaedia of Creativity, Invention, Innovation and Entrepreneurship*. Springer. London.
- 8- J.G.Wissema. 2009. *Towards the Third Generation of University: Managing the University in Transition*. Edward Elgar. UK.
- 9- Johannesson. C. 2008. *University strategies for knowledge transfer and commercialisation - An overview based on peer reviews at 24 Swedish universities 2006*. VINNOVA - Swedish Governmental Agency for Innovation Systems.
- 10- Vest Charles M. 2005. *Pursuing the endless frontier: essays on MIT and the role of research universities*. MIT, USA
- 11- Wala' Wajih abdelhamid abdelghani. 2009. *Higher Education in the Abbasid First Era*. Magistère dissertation, Ain chams university, Cairo, Egypt.