

Inductive Study of Foreign Experiences in the Application of Total Quality Management in Higher Education (Conclusion of a Model Suggested for the case of Algeria)

دراسة استقرائية لتجارب أجنبية في تطبيق ادارة الجودة الشاملة في التعليم العالي
(استخلاص نموذج مقترح لحالة الجزائر)

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Abstract

TQM in higher education considered as the most recent trends and strategies seeking to achieve a qualitative development in the higher education, so that its outputs fit to the era's variations. Accordingly, our study aims to clarify the concept of TQM in higher education and study a number of foreign experiences of its application to reach a proposal that allows the improvement and development of higher education institutions in Algeria through following a TQM method.

This study has concluded that though the deficiency in the higher education institutions performance, they do not agree the need for change and reconsideration of their applied methods in work performance with their will in finding rapid solutions, since TQM requires a period of time so that it gives its results.

الملخص

تعتبر إدارة الجودة الشاملة في التعليم العالي من أحدث الاتجاهات والاستراتيجيات التي تسعى إلى تحقيق تطور نوعي في التعليم العالي لتناسب مخرجاته مع متغيرات العصر، وبناء عليه جاءت دراستنا بهدف توضيح مفهوم إدارة الجودة الشاملة في التعليم العالي ودراسة عدد من التجارب الأجنبية في تطبيقها للخروج بمقترن يسمح بتحسين وتطوير مؤسسات التعليم العالي في الجزائر من خلال انتهاج أسلوب إدارة الجودة الشاملة.

وخلصت هذه الدراسة إلى أنه رغم القصور في أداء مؤسسات التعليم العالي إلا أنها لا تتوافق على حاجتها للتغيير وإعادة النظر في طرقها المتبعة في أداء الأعمال مع رغبتها في الحلول السريعة حيث أن إدارة الجودة الشاملة تتطلب فترة زمنية حتى تؤتي بثمارها.

1 Introduction:

Higher education institutions are one of the most important educational institutions that have a positive effect on the society development and advancement. Thus, their development has become a necessity; indeed, education quality improvement has become a fundamental objective sought by societies to improve the current policies of education; the main challenge for the recent educational systems is not only limited in teaching, but also in confirming its high quality characteristic.

Therefore, higher education institutions in the world tend to apply quality and accreditation system, establish mechanisms guaranteeing the quality of academic and educational programs and develop quality systems, procedures and standards in accordance with the international trends and the conditions of each society.

TQM is considered, moreover, as one of the most important strategies and methods seeking to achieve qualitative development and promotion in education levels so that they fit to the twenty-first century's requirements, since quality is not anymore a luxury targeted by the educational institutions, yet it has become an urgent necessity imposed by the modern life.

The Study's Problematic:

If we take a glance at the Algerian higher education reality, we find that many studies and researches have diagnosed many weaknesses in its performance, and that it has not achieved its main objectives in teaching, scientific research and community service.

The follower of the higher education institutions' performance in the recent times, should remark that quality deterioration in their performed services quality; what justifies, perhaps, this deterioration is the decline in the test scores, the deficiency in the graduates' principle skills, the increase of the dropout rates and the widening in the gap between the labour market requirements and the graduates' capabilities. All this emphasizes the importance of searching a solution that may help the higher education institutions to promote and overcome these difficulties and treat that deterioration situation.

The question that may arise here is: "**what is the suggested perception for TQM application in the Algerian higher education**

institutions, proceeding from the former foreign experiences in the same field?"

The study's objectives:

This study aims to clarify the TQM concept in higher education and to study some foreign experiences about its application in order to reach a proposal allowing the improvement and development of the Algerian higher education institutions through the TQM method.

The study's Importance:

The importance of this study rises from being a research attempt to study the TQM in the higher education institutions, which is a relatively-modern topic in the world, in general, and in the Arab World and Algeria, in particular. Thus, the study permits to reach recommendations for the decision-makers in the Algerian higher education institutions.

Previous Studies

1. The study of Dr. Abdus Samad, R. Thiagarajan in 2015, entitled “TQM in Higher Education, A Conceptual Model to Achieve Excellence in Management Education” (Abdus Samad, R. Thiagarajan,2015, p634-645):

This study aimed to provide explanation that would help interested in the quality systems management and educational programs evaluation, in addition to the clarification of the TQM standards and indicators affecting the administrative institutions quality improvement and the their challenges.

This study found that the adoption of TQM principles in higher education may allow the evolution of its institutions through the clarity of objectives and targets and the adoption of continuous improvement approach in teaching systems with periodic evaluations to realize a kind of satisfaction between students and stocks holders, which affects the academic environment dynamics.

2. The study of Mouhammed Hasas. In'airat, Amer Hani Al-Kassem in 2014, entitled: “Total Quality Management in Higher Education: A Review” (Mouhammed Hasas In'airat, Amer Hani Al-Kassem, 2014, p237-294):

This study aimed to analyze the TQM in higher education, determine the critical success factors (CSF) and provide a feedback about the ideal way for TQM adoption in higher education.

One of its obtained results reveals that some institutions programs are, actually, characterized by advantages and methods enabling them to, strictly, adopt the system in order to realize the adequacy between the university outputs and the market requirements; since its correct application may enable the Organization to face and minimize risks.

What Distinguishes our Study from the Previous Studies:

It is clear from the previous exposé that the local studies related to the study of TQM application extent in the Algerian higher education are few or rare. Thus, what distinguishes this study from the previous studies and determines its location among them is the fact that it aims to reach a proposal that allows the TQM application in the Algerian higher education institutions.

The Study's Method:

In order to answer the problematic, the scientific method will be adopted through using the descriptive analytic method, since it focuses on the concise description of the studied phenomenon as well as on its qualitative and quantitative expression.

The Study's Structure

To achieve this study and treat its problematic, it has been divided into three main axes:

Axis one: Definition of TQM in higher education.

Axis two: Some foreign experiences about TQM application in higher education.

Axis three: Proposed model for the higher education institutions in Algeria.

Axis one: Definition of TQM in Higher Education

TQM is one of the most modern management concepts standing on a set of principles and ideas aiming to achieve the best possible performance, since the challenges faced by Organization in the modern human community, involve quality and use it as a main competitive arm. Higher education institutions, as other institutions, have to conduct this way. To simplify the subject, we have studied TQM and TQM in higher education.

1. The Concept of TQM:

“Sehuctor” (Farid Abdelfattah Zineddine, 1999, p21) sees TQM as “*the creation of a peculiar culture, in performance, where managers and employees work in a continuous and hard way to realize the consumer expectations, and, correctly, perform the correct work from the beginning to achieve better quality with high effectiveness and at the best time.*”

In a more global definition, **“R. Hadgetts”** (Farid Abdelfattah Zineddine, 1999, 22) sees that TQM “*is a cultural revolution in the method in which management thinks and works on quality improvement; it is the modern works system that leads to the participation of the human element through moving their talents and abilities to achieve the continuous improvement in order to serve the consumer with a low cost*”.

2. The Concept of TQM in Higher Education:

TQM in higher education may be defined as “*a management philosophy for universities leadership, which is based on the satisfaction of the students’ and the surrounding community’s needs. It, also, realizes the continuous evolution and development for the university and leads it to achieve its objectives, ensures the great and high effectiveness in the scientific research field, and leads, finally, to superiority, excellence and competition*”.(Moussaoui Abdennour, 2010, p03)

According to the definition, we can extract the main objectives of TQM in higher education:

- Improving the higher education institutions’ efficiency.
- Upgrading the level of the academic staff.
- Improving the use of educational techniques and higher education outputs.

Axis two: Some Foreign Experiences of TQM Application in Higher Education

TQM application in many developed countries, such as the United States of America, Japan, the United Kingdom and many western countries, with the realized success in the institutions that have adopted this method, has created a strong justification to apply this system in many educational institutions across the world; since the number of institutions that submit to this system has been increased. This is a view of some experiences:

1. The American Experience of TQM Application:

The success of companies in using TQM has encouraged many higher education institutions in the USA to adopt it; the first application of TQM in higher education was in 1985 in the technical college (*Fox Valley*) whose graduates have become more efficient, what has satisfied the employers. The movement has quickly spread when (160) universities in America included the quality improvement principles, and about (50%) of them has established a regulatory quality composition; the *Malcolm Baldrige Prize* is awarded as a model and standard of the TQM success.

Among the universities adopting this method:

A- Harvard University:

TQM application in Harvard University, in the data technology office, has led to save 70 thousand Dollars per year, from the software licences as a result of the elimination of the unused and unnecessary software packages, 120 thousand Dollars, a balance of accordance between the process of reports preparation and their submission; the costs of paper used in billing have been, also, reduced by 40% through the use of a new billing model, and the training period in the data center has been reduced from two days to one hour and half. (Ömer Faruk ÜNAL, 2001, p09)

Harvard University takes the first place in the global ranking of universities. It is, also, the first one in terms of the number of graduates and researchers who obtained *Nobel Prize*, other awards and famous scientific medals in the world. Also, seven US presidents are graduated from this university.

B- Oregon State University:

It is considered among the first and most famous TQM application attempts in the American higher education institutions; it has followed, in this method application, the following steps: (Lewis Ralph G & Smith Doglas H, 1994, p17-19)

1. Clarifying the quality management philosophy, concept, principles and objectives as defined by the *Quality Management Council*.
2. Defining the quality principles and the methods of its application for all the university employees, by administrative and academic staff.
3. Evaluating current situation evaluation, identifying the aspects that require improvement, applying total quality policy, and redirecting efforts into it, through holding official meetings or written reports.

4. Evaluating the global situation of the executed steps related to the quality programs in order to obtain a feedback of the quality application effect and the extent of improvement in the university works performance.

The adoption of this method has led to save time, increase the efficiency of graduates and raise morale.

C. Northwest Missouri State University

This university has started the quality application in 1986, and by 1991 it has developed its special quality culture through studying the program paper of *Malcolm Baldrige National Quality Award for Education**. In 1997, this university has been awarded Missouri Quality Prize that depends on *Baldrige* principals, as a planning model; the university has been working on the enhancement and restructuration of its system. It has, also, introduced the strategic planning processes, put standards and reference points for measuring performance, and adopted a new organizational culture depending on the total quality philosophy and principles, which led to many successes (Kronsby, Robert, 2000, p68) :

Among the reached results (Adnane Al Ahmed, 2004) of the TQM application in *Northwest Missouri State University*:

The establishment of the first global electronic university campus in the country and the transition from a deficit situation of one million Dollars to a reserve surplus of three million Dollars.

D. Wisconsin University:

In 1990, *Wisconsin University* has set a plan for TQM principles application. This plan (Total Quality Leadership) has been known as a global introduction in management, that uses the scientific method and all individuals' contributions in the continuous development in order to respond to the consumers' expectations; the framework of this plan includes seven groups as follows (Salem Bensalim Mohamed Elghanboussi, 2005, p14):

- 1- **Leadership team:** Its responsibility is summed up in developing a vision for total quality leadership in terms of objectives, success standards and main issues that must be dealt with, in addition to methods that must be followed.

* **The Malcolm Baldrige Award National Quality Award** by the name of the Ex-Minister of Trade (1981-1982). In 1993, the American minister of trade, Ronald Brown announced the expansion of the award so that it includes the education field.

- 2- **Quality office:** A group of members that guide, facilitate and help in the TQM philosophy execution.
- 3- **Implementation team:** It is composed of a group of teaching staff with experience and knowledge to participate in implementation efforts.
- 4- **Shift departments:** They include the departments on which TQM will be applied.
- 5- **Internal network:** It includes the monthly meetings with the speakers about quality topics, and efforts made in this field in order to train individuals.
- 6- **Team of financiers:** This team includes the aids providers for TQM implementation; they are material and human aids.
- 7- **External network:** It consists in the quality office's continuous contact with faculties and universities that apply the TQM.

This university has reached the following results: reducing costs, waste, anxiety and litigations between workers (El-Kayoumi Abdellah, 2003).

E- The University of Southern Colorado

The College of Management at *Southern Colorado University* is the first one that has applied TQM experience whose main principles (Ward, Bart and Chandler, D, 1993, p31):

1. Identifying a specific and clear message for the college, formulated so that this latter takes place in the world.
2. The customer quality is composed of fundamental input elements that he must be allowed to acquire: knowledge, skills and tendencies.

In order to achieve these principles, three main processes have been defined and must be, continuously, paid attention: enhancing the method and the academic staff and ensuring of students.

2- The British Experience of TQM application:

Despite the British universities autonomy, yet, they are subject to the quality assurance standards set by the *Quality Assurance Agency* in higher education (QAA) since 1997, as this agency's task is not limited to the standards determination, but it follows their application in the British universities. There is, also, the *Office for Standards in Education*, which is, directly, annexed to the parliament and whose task is the inspection on a sample of British universities in order to compare the students achievement,

in specific matters, to the standards level issued by the office (Azzeyadet Mohammed Aouad, 2008, p25).

TQM assurance's objective, in the British universities (HABCHI Fatiha, 2008, p141), is the reinforcement of the public confidence towards the quality of the programs set by the higher education and the degrees it awards.

Among the universities applying TQM in higher education:

A. The University of Ulster (Khaled Ahmed Sarayera, D. Laila Assef, 2008, p34):

This British university has set teaching standards as a part of the TQM system; its programs include the consultation of experienced and efficient teachers in series of *Quality Circles* for employees in different administrations as well as for students in order to reach standards related to teaching as taking the students' opinion, appointment of experienced members and adoption competence when selecting the academic staff.

B. The University of Aston (Khaled Ahmed Sarayera, D. Laila Assef, 2008, p34):

Aston University in Britain has included the topic of quality in its strategic plans and used TQM philosophy and techniques as a way to ensure the continuous development and evolution of its various activities.

2. The Australian experience of TQM Application:

Australia is considered among the first world countries that tended to the TQM notion adoption in the educational institutions, after its transmission from industry. Quality notions and techniques has begun to spread in the institutions that have attempted to apply the total quality input and the quality improvement; some higher education institutions have applied these inputs in order to improve their performance, teaching process, educational service afforded to the student, and the competitive advantage in the educational market. This is due to the huge development of information and education technology and, moreover, the continuous increase of the number of students and higher education institutions.

The seventies of the last century have witnessed the first steps of the Australian universities tendency towards the realization of quality in higher education. Indeed, in 1977, the Australian government has attempted to find a rapprochement to universities funding. Thus, it has merged the universities

and higher and technical education colleges' budgets in one organization which is: *Higher Education League*(Kamel .T & MacLachlan. M, 200, p04). The increase in the Australian universities number and *Dawkins Revolution* have led to the emergence of an urgent need for the application of the quality revision, that has been accompanied with the creation of the *Committee of Quality Assurance in Higher Education (CQAHE)* in Australia (Avdjeva.M & Wilson. M, 2003, p04).

In 1991, quality has become the era's language in Australia and some terms, such as: Standards, excellence, efficiency and effectiveness (Boldwin.G, 1997, p276) have been agreed and emphasized. This has led to the establishment of a *Committee of Quality Assurance in Higher Education*, in 1993, whose task is the examination of quality assurance in the Australian higher education institutions (Moses. I, 2004, p2894).

However, in 2000, the *Australian Universities Quality Agency (AUQA)*, directly, supervised by the higher education minister, was created with the task of doing a periodic revision and control of the TQM standards application in the higher education institutions (Mackinnon. K & et al,2000, p06). In 2001, the *Australian Research Council*, which is considered as the first independent body, has been, also, created, with the task of following the research performance in higher education institutions (Yahia Mostapha Kamel, 2008, p112). The *National Agency for Quality Assurance* has been, also, established, with the task of determining the TQM adoption method, through the continuous assessment of the university elements (Skillbeck. M & Connell. H, 2004, p09).

The twenty first century has witnessed the increased focus on the higher education institutions effectiveness and efficiency, through setting standards for quality assurance in higher education, by providing a data base constructed depending on the recommendations of the conference "*Quality in Higher Education*" in Sidney, in 2007 (DETYA, 2007, p06), which has, positively, affected the Australian universities that have taken an important place in the international ranking; indeed; the national Australian university was ranked 99th in *Webometrics* **universities ranking for the year 2015,

** **The Webometrics Ranking of World Universities**, also known as Ranking Web of Universities, is a ranking system for the world universities based on a composite indicator that takes into account both the volume of the Web contents (number of web pages and files) and the visibility and impact of these web publications according to the number of external in links (site citations) they received. The ranking is published by the Cybermetrics Lab, a research group of the Spanish National Research Council (CSIC) located in Madrid. The aim of the Ranking is to improve the quality of higher education institutions and the presence of the academic and research institutions on the Web and to promote the open

whereas the Western and Southern Australia universities were, consecutively, ranked 669th and 733th .

3. The Japanese experience of TQM Application:

The Japanese higher education system is an example of exhaustiveness and diversity, in a country that witnesses a huge development, where the percentage of the enrolled students in the higher education has increased from 10.1% in 1955 to 37.4 % in 1980, to reach, by the end 50% in 2009. The Japanese vision agrees with the American counterpart that the interest in higher education is an important thing, what has led the government to focus, in its investment, on the field of expansion and efforts exertion to develop the graduation programs in the national universities, and in the same time, on the procedures deliverance to create private universities in order to meet the increasing higher education demand².

The Japanese higher education is characterized, also, by quality; the accreditation system in Japan has started in 1947 by the establishment of a quality accreditation board named “*Japan University Accreditation Association*” (JUAA); this system has been developed over time to become responsible of the biggest higher education system in the world (Raid Hocine El Hadjar, 2006, p261).

The Japanese government has endeavoured to provide the sufficient financial accreditations for the higher education quality assurance. Indeed, in 2010, its expenditure on higher education was estimated at 10% from the national income³, however, in July 2011, it reached 130 billion dollars, i.e., 24% of the world expenditure⁴.

4. The Malaysian experience of TQM Application:

The Malaysian government gives the higher education sector an important place, since it considers it as a national centrality, and one of the federal government's responsibilities. Yet, at the beginning of 2004, it has created a modern department affiliated to the Malaysian higher education ministry⁵. This department aims to increase the higher education level in Malaysia so that it reaches the international competition rank as an attempt to attract more foreign students.

access publication of scientific results. The ranking started in 2004 and is updated every January and July. Today it provides Web indicators for more than 2,000 universities worldwide.

Concerning the expenditure on education, the percentage of the budget allocated to higher education has reached 16.5% in 1988, and the successive five-years development plans has paid attention to the expenditure on higher education. Indeed, The period between the first (1966-1970) and the seventh (1996-2000) plans has witnessed a continuous doubling (passed from 7.8% to 15.1%), and the percentage of the expenditure on higher education has successively arrived in the years: 2003, 2004, 2005 to 16.71%, 23.93% and 26.19% from the national budget.

The ministry of higher education in Malaysia held the slogan '*Education quality for all*'. National trends towards the application of quality method appear through the following⁶:

1. The ministry of higher education has established "*The National Accreditation Council*" to outline the academic process for higher education public and private institutions (Ahmed Hamoudi, 2006, p261).
2. The ministry of higher education has set a competitor classification system between the Malaysian universities (*SETARA*)***, whose first results have been published in 2008⁷.
3. The creation of the *Malaysian Evaluation and Qualification Agency*, which evaluates and controls the quality of education afforded in all higher education public and private institutions, and adopts according to the universal standards.
4. Putting a global plan in order to promote education. The year 2020 has been determined as a delay for the development, so that Malaysia will become among the developed countries, in every sense of the word, through the establishment of what is called '*Smart schools*' (Ali Djobran, 2011).

It is noteworthy that, in 2012, the Malaysian government has taken a bold step when it has established the State Professors Council (*Majlis Profesor Nagar*), whose task is to study the difficulties experienced by the Malaysian society, and search the appropriate solutions to treat them. The most recent report made by the Malaysian Technology University, in 2012, states that 74% of its graduates found jobs six months after the graduation and the others after a year (Nourallah Kourt, 2012, p13) .

Results Obtained from the Reviewed Experiences:

*** SETARA : Rating System for Malaysian Higher Education Institutions.

According to the previous review of the different foreign experiences, the following results can be concluded:

- The experiences differed in their axes and bases according to the environment of their application.
- The reviewed experiences have focused on principal elements such as continuous quality improvement, commitment, leadership and the beneficiary satisfaction.
- The experiences have revealed the big successes realized by TQM notion adoption.

Third axis: Suggested Model of TQM Application in the Algerian Higher Education Institutions

According to the previous experiences, we can suggest a model of the TQM application in the Algerian higher education institutions; it includes five fundamental stages:

1. First stage: Thinking:

This stage requires an entire understanding, by the senior management, of the TQM philosophy, through the quality culture diffusion, and the identification of its principles, requirements and incomes for workers, on one hand, and for the institution, on the other hand, by holding symposia, conferences, training workshops ...

2. Second stage: Preparation and planning:

After TQM philosophy application understanding and commitment by the senior management, the preparation stage begins; it requires the following:

- a) The analysis of the internal environment and abilities of the higher education institution, as well as the external environment with the supportive elements it provides, in addition to required needs evaluation including the human and financial resources in order to work on providing them.
- b) The evaluation of the current quality level, and the determination of strengths and weaknesses.
- c) The formulation of the future message and vision; since the message means the objective from the educational institution existence, meanwhile the vision indicates the future situation targeted through the TQM application, with the design of a system that serves it.

d) The determination of the leadership that is responsible on the changing process. This team should include representatives of all members inside the educational institution, including the administrative and academic bodies and students, in addition to the selection of the performing tasks and their correlations; so that the processes occur in a holistic integrated trend, then, the determination of the tasks achievers' roles, so that they implement them using coordination and harmony.

3- Third stage: Implementation

Activities and programs are defined for teams and groups through the determination of the targeted objectives and the clarification of the various operations linked to their achievement, so that they may be implemented in programmed periods. Measures and indicators of the underlined objectives achievement advancement are defined due to the TQM application as: the decrease extent in the expensed money inside the educational institution.

The fourth stage: Expansion and Complementarity

This is through:

- a- Realizing continuity in the training and teaching processes.
- b- Establishing new work-teams and departments.
- c- Granting recognition and rewards for quality improvement.

5- The fifth stage: Evaluation

TQM is a continuous and endless process, therefore the performance revision through comparing between what has been already achieved and the planned objectives, in the light of the information obtained by the internal beneficiaries (students) and the external beneficiaries (employers), or what is called the “*feed-back*” , to proceed the necessary modifications and correct the deviations, with regard that the evaluating body should, better, be an external body in order to ensure the information transparency.

Results and Recommendations:

This research provides a set of results:

- Though the existence of many indicators of the educational level decline (the gap between the graduates' abilities and the labor market

requirements) yet, these educational institutions do not agree on the necessity for change.

- The failure to correctly adopt the work principals, especially when the academic staff opposes the reconsideration of the important methods followed in the work performance.
- The deficiency in the necessary resources for the changing process during the application of TQM, in addition to the lack of knowledge and training.
- Most of the previous studies in this field have explained that the results, in the Algerian higher education institutions are hastened (most of them have dropped the third stage of the suggested model), since the application of the latter requires five years, at least, before it may give its fruits. However, many of these institutions want a quick solution.

There are some main recommendations of this study:

- Though the suggested model may represent useful guidelines for the TQM application process in the Algerian higher education institutions, yet, its programs should be designed so that they fit to the circumstances of each educational institution.
- Starting the application on one of the organizational units (one college or more for example); since the vast majority of pioneer higher education institutions in TQM philosophy adoption has started applying it on some organizational units before generalizing it on the entire institution. This has led to the success of this experience in many of them.
- The efficient and effective use of the communication system; since the periodic communiqués and reports are a good method to stay connected with the labor group and brief it about the progress realized by the institution in its path to TQM philosophy adoption.
- Holding partnership between the higher education institutions in Algeria and the foreign higher education institutions applying TQM in order to benefit from their experiences and adapt them to the internal environment.

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