

Training of quality managers: What is the current state between market needs and university offerings in Algeria?

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Abstract:

With the rise of quality standards, the strengthening of regulations, and increasing consumer expectations, companies are in search of quality managers capable of ensuring compliance and optimizing processes. In this context, the demand for qualified professionals in this field continues to grow. However, university programs often struggle to provide adequate training that meets the specific requirements of the sector. This article provides an overview of the training of Quality Management Officers (RMQ) in Algerian universities and offers recommendations aimed at creating synergy between this growing demand and the educational offerings of academic institutions.

Keywords : university training – quality management – employability – Algeria – university-business relationship

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Introduction

In an ever-changing economic environment, quality has become a central issue for organizations seeking to stand out and ensure customer satisfaction. Quality managers play a crucial role in implementing and monitoring the standards and practices that ensure this quality. However, a concerning observation arises: the university training programs aimed at preparing these professionals are often insufficient and disconnected from the realities of the field (Diaby, S, 2023). As the demands for quality become more complex (Harvey, L., & Green, D, 1993), universities struggle to adapt their training offerings to meet the specific needs of businesses. This gap in quality manager training can have significant consequences for both organizations and the professional development of the individuals involved. In this article, we will examine the existing gaps in the university training of quality managers, their impact on the labor market, and the necessary improvements to strengthen the skills of these essential players.

I. University-Business Relationship: Convergence or Divergence?

1. University-Business Partnership

The partnership between universities and businesses has become an essential necessity in a world where economic, technological, and social challenges are multiplying. This type of collaboration aims to establish a constructive and mutually beneficial dialogue, allowing the academic strengths of higher education institutions to be aligned with the practical needs and requirements of the professional world (Duderstadt, J. J, 2009).

1.1. Benefits of the University-Business Partnership

A considerable amount of research has highlighted the many advantages of a solid university-business relationship (Georgiou, G. K, 2024) (Dan, M. C, 2013), which can be summarized in the following points:

Adaptation of training programs: A close partnership allows universities to better understand market needs and adapt their training programs accordingly. This includes integrating practical and technical skills that are directly applicable in the professional environment, ensuring that graduates are prepared to face contemporary challenges.

Opportunities for internships and jobs: Collaborations facilitate students' access to internships, apprenticeships, and job opportunities. This allows them to gain valuable experience while establishing professional contacts, which increases their employability upon graduation.

Research and development: Businesses can benefit from the research skills of universities, particularly in the development of new products, services, or technologies. Joint research projects can lead to significant innovations, stimulating both business growth and academic development.

Knowledge sharing: The partnership fosters the exchange of knowledge and expertise. Businesses can provide a practical perspective on theoretical concepts taught at universities, while academics can offer in-depth analyses and evidence-based approaches to solving real-world problems.

Strengthening social impact: By working together, universities and businesses can also engage in community and social initiatives. This can include sustainable development projects, corporate social responsibility programs, and other actions aimed at improving the well-being of local communities.

1.2. Challenges of Partnerships

Despite the numerous benefits, establishing effective partnerships between universities and businesses can encounter obstacles (Bruneel, J., d'Este, P., & Salter, A, 2010). Cultural differences between the academic and private sectors, occasionally divergent objectives, and bureaucracy can complicate collaboration. It is essential for both parties to engage in an open and constructive dialogue to overcome these challenges and build long-lasting relationships.

Ultimately, partnerships between universities and businesses represent a promising way to strengthen the alignment between higher education and the professional world (Stokes, P. J, 2017). By creating synergies, these collaborations can contribute to training competent and adaptable professionals who can meet the demands of an ever-evolving market (Brotcorne, P, 2016). The future of education and employment will largely depend on the ability of both sectors to work together effectively and innovatively.

2. Disconnect Between University Education and Business Needs

The disconnect between university education and business needs is an increasingly concerning issue in the current educational and economic landscape (Carayannis, E. G., & Jorge, J, 1998). As the professional world rapidly evolves due to technology, globalization, and societal changes, university training programs often struggle to adapt to these new realities. This mismatch has significant repercussions for both graduates and businesses, as well as the economy as a whole.

2.1. A Growing Gap

One of the main aspects of this disconnect lies in the gap between the skills taught in higher education institutions and those actually required by businesses (Gerstein, M., & Friedman, H. H, 2016). Many degrees still favor traditional academic approaches focused on theoretical knowledge, to the detriment of practical and technical skills. For example, universities may not sufficiently integrate elements such as project management, interpersonal communication, or advanced digital skills, which are essential in the modern professional world.

2.2. Consequences on Employability

This situation creates a major challenge for young graduates entering the job market. They often face requirements that go beyond the scope of their education, leading to feelings of frustration, lack of self-confidence, and, in some cases, prolonged unemployment (Guilbert, L., & Loarer, E, 2016). On the other hand, businesses must allocate significant resources to internal training to bridge the skills gap of new employees, which can hinder their efficiency and capacity for innovation.

2.3. Reactions from Businesses

Faced with this disconnect, businesses have begun to express dissatisfaction and seek solutions. Some companies now prioritize hiring candidates who have acquired practical experience, whether through internships, real-world projects, or alternative training programs. Furthermore, employers are increasingly engaging with academic institutions to influence the content of training programs by participating in advisory committees or offering co-designed courses.

2.4. Towards Reconciliation

To address this situation, it is essential to establish a constructive dialogue between universities and the private sector. Higher education institutions must be proactive in evaluating and updating their programs to better align with market needs. This may include integrating practical modules, collaborative projects with businesses, and greater involvement of professionals in the educational process (Slotte, V., & Tynjälä, P, 2003).

The disconnect between university education and business needs represents a significant challenge but also an opportunity for transformation. By reassessing their curricula and strengthening ties with the private sector, universities can not only improve the employability of their graduates but also contribute to the competitiveness of businesses and economic growth. It is imperative to address this issue seriously and decisively to

create an educational system that truly meets the demands of the professional world today and in the future.

3. Case of Quality Management Officer Training in Universities

The lack of training for quality managers within universities is a concerning observation in a professional environment where quality management is essential for the success and sustainability of organizations. While the demand for qualified professionals in this field continues to grow, university programs often struggle to provide adequate training that meets the specific needs of the sector.

3.1. A Growing Need for Quality Skills

With the rise of quality standards, strict regulations, and increasing consumer expectations, companies are looking for quality managers capable of ensuring compliance and optimizing processes. These professionals must be trained in a variety of skills, including risk management, data analysis, quality audits, and continuous improvement. However, many university curricula do not cover all of these aspects in depth, leaving students poorly prepared to meet the challenges of the real world.

3.2. Gaps in Training Programs

University programs dedicated to quality and risk management often lack practical content and real-world application. Students are frequently exposed to theoretical concepts without receiving the opportunity to apply this knowledge in real-world contexts. This approach can lead to a limited understanding of quality processes and the tools necessary to implement them effectively.

3.3. Consequences on Employability

This situation has significant implications for the employability of graduates in quality management. Businesses often express concerns about the preparation of young graduates, who may not possess the practical skills required to immediately intervene in the field (Austin, A. E, 2002). As a result, organizations must invest in additional training to fill these gaps, representing an investment in both time and resources.

II. Methodology and Study Results

1. Research Problem and Objectives

Given the observation above, we pose the following question:

"Is the training offer in quality management and standardization sufficient to meet the needs of the Algerian market?"

Research objectives:

- Analyze the academic profile of quality management officers (RMQ) in Algeria.
- Survey and evaluate the university training offer in this field.
- Identify gaps and formulate recommendations to improve this offer.

2. Sample and Data Collection

Two distinct surveys were conducted:

The first research involves surveying the profile of RMQs in companies across a sample of 60 Algerian companies from various industrial sectors. The criterion studied here is the academic training of RMQs. A questionnaire was administered to the RMQs in the selected companies.

For the second research, the focus was on analyzing the university training offer in Algeria. The sample consists of 19 universities and higher education institutions spread across various regions (East, West, Center, and South). The criterion here is the number of modules dedicated to quality management and related standardization. We analyzed the academic program guidelines available on their official websites.

3. Analysis of Research Results

3.1. Academic Profile of RMQs in Companies

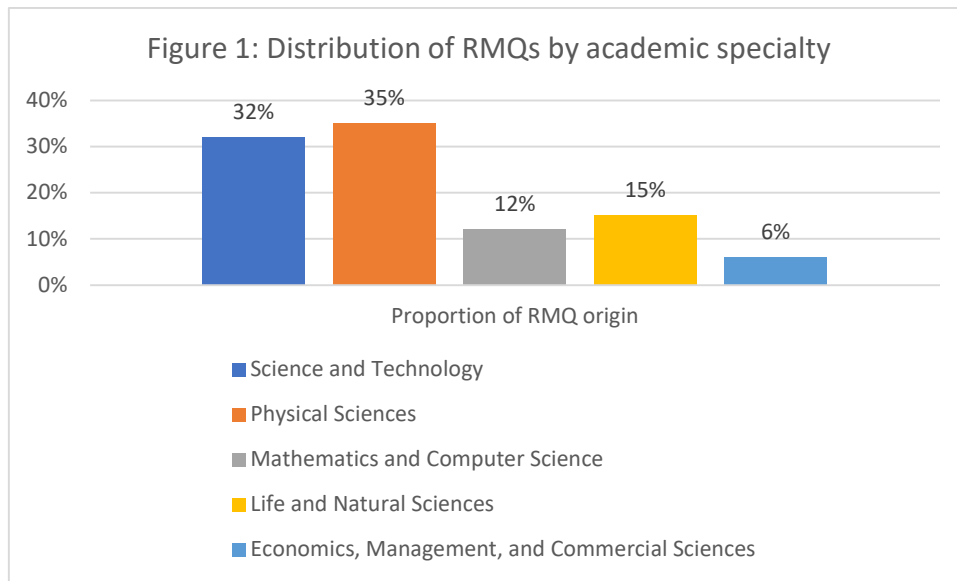
The goal of this part of the survey is to establish a baseline of the academic profiles of RMQs, identifying the initial training that prepared them to assume this role. Specifically, it aims to analyze the distribution of profiles by distinguishing those from technical fields (engineering, statistics, chemistry, mechanics, etc.) from those in economics and management disciplines.

The results will shed light on the dominant trends in RMQ training in Algeria and assess whether the current academic offerings meet market needs for quality management and

standardization. This work aims to contribute to the discussion on the alignment between university training and professional requirements in this strategic field.

Table 1: Distribution of RMQs by Academic Specialty

Academic Discipline	Science and Technology	Physical Sciences	Mathematics and Computer Science	Life and Natural Sciences	Economics, Management, and Commercial Sciences
Number of RMQs	19	21	7	9	4
Proportion (%)	32%	35%	12%	15%	6%



3.2. University Training Offer for Quality Management

Recall that the objective of this section was to analyze the training offer of universities and higher education institutions in Algeria. We surveyed the number of teaching modules dedicated to quality management and related standardization. We then analyzed the curriculum guidelines of economics and management programs available on their official websites. The results are as follows:

Table 2: Teaching Quality Management in Algerian Universities

Dedicated Modules	Specialty	Number of Modules
Quality Management	Master Management	01
Quality Management	Bachelor's Management	01
Total Quality Management	Master's in Entrepreneurship	01
Total Number of Modules per Faculty		03

It is important to note that no faculty has a specialization in quality management. Additionally, in some modules, we found notions related to quality control, such as production management and project management.

3.3. Analysis of Study Results

The goal of this survey was to analyze the academic profile of quality management officers (RMQs) within Algerian companies to assess how well their initial training meets the requirements of the companies and the profession, and whether the university offer in quality management is sufficiently aligned with market needs. The results obtained are as follows:

- *A clear dominance of technical profiles*

The analysis of the results shows a predominance of scientific and technical training among the RMQs surveyed. These results indicate that 94% of the RMQs come from scientific or technological backgrounds, compared to only 6% from economics and management disciplines. This trend suggests that the RMQ position is largely occupied by technical profiles rather than specialists in management and organizational administration.

- *Absence of dedicated quality management training*

The very low percentage of RMQs from economics and management disciplines (6%) confirms the hypothesis that no university specialization in quality management and standardization exists in the faculties of economics and management. This reality is concerning because the role of the RMQ relies not only on technical skills but also on managerial and strategic capabilities:

- Understanding of integrated management systems (ISO 9001, ISO 14001, ISO 45001, etc.)
- Mastery of continuous improvement methods (Lean, Six Sigma, quality audits, etc.)
- Risk management and regulatory compliance
- Stakeholder management and internal/external communication

The absence of a dedicated university curriculum for RMQ training in faculties of economics and management may explain why these positions are predominantly filled by graduates from scientific disciplines who must acquire these skills through professional experience or additional training.

- *A lack of transversal skills for a key role*

The fact that most RMQs come from scientific and technical backgrounds can pose certain challenges, particularly regarding:

- Managerial approach to quality: an RMQ must be able to interact with management, human resources, and operational teams to effectively deploy quality initiatives.

- Strategic and organizational vision: beyond technical and normative aspects, quality is a lever for overall business performance.
 - Integration of standards and regulatory requirements into business strategies, which requires skills in management and economics.
- *Implications for university training offer*

These results reinforce the observation that the university offer in quality management and standardization is largely insufficient in Algerian universities, especially in faculties of economics and management. The lack of specialization in this area has two major consequences:

- Businesses recruit technical profiles and must provide internal training in quality management, which represents an additional cost and investment.
- Graduates from economics and management disciplines are not prepared to occupy RMQ positions, despite the growing need for managers specialized in quality and standardization.

Conclusion

The university plays a crucial role in feeding the labor market by training graduates who meet the specific needs of businesses. Indeed, the alignment between the skills acquired through university education and those required on the labor market is essential for ensuring the employability of young graduates and the competitiveness of companies.

It is therefore imperative that universities remain constantly attuned to economic developments and the demands of professional sectors. They must establish mechanisms to collect and analyze business needs, whether related to technical skills, managerial skills, or specific specializations. This responsiveness is critical to regularly adapting and adjusting training programs, incorporating new specializations in response to economic changes, and thus fostering successful professional integration for students.

The results of our research reveal a clear gap in the domain of quality management and international standards. The findings highlight a structural weakness in RMQ training in Algeria. The market largely relies on scientific and technical profiles, who must acquire their quality management skills through self-learning or additional training. This situation reveals a significant gap in the university offer, which does not adequately prepare students for the challenges of quality management and international standardization.

To address this training deficit, it is essential for universities to collaborate closely with businesses and industry professionals. This could include initiatives such as integrating

mandatory internships into curricula, co-designing training programs with industry experts, and organizing seminars and workshops led by practitioners. Furthermore, adopting innovative teaching approaches, such as project-based learning, can help enrich students' educational experiences.

Moreover, it is important to recognize that progress has been made, as evidenced by the various transformations implemented by universities to better align with the economic sectors (Yahia, I. A, 2024). However, there is still a sense that these institutions have primarily focused on traditional academic training without truly considering the needs of economic stakeholders. For example, a notable gap is observed in training for technical specializations such as quality management, health and safety, and food security.

We believe that a genuine partnership between universities and businesses could greatly improve the quality of relationships and training actions between these two entities. It is true that there may be tensions between ensuring the feasibility of training and improving its quality. However, universities must learn to balance these two aspects. We hope this document will help not only university leaders but also managers and all stakeholders in establishing a fruitful partnership. We aim for this text to contribute to enriching the reflection on university training and collaborations between universities and businesses. Finally, we can make some recommendations:

- Establish a university specialization in quality management and standardization, particularly in faculties of economics and management.
- Integrate mandatory modules on quality management and international standards into existing management curricula.
- Implement professional training programs in partnership with businesses to meet market needs.
- Develop certification programs and continuous training for RMQs from technical backgrounds to enhance their management skills.

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