



The Algerian university and the needs of the labor market

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Abstract:

This paper examines the alignment between the university education at ISTA Oran and labor market needs in Algeria. The high unemployment rate among Algerian university graduates points to a general problematic of mismatch between education and jobs. The main hypothesis is that there is a gap between the educational services and actual labor market requirements. The methodology used is a survey of 47 ISTA teachers. Overall, the study highlights the need for better training-employment alignment to positively impact graduates' employability.

Key words: Skills, labor market, innovative pedagogy, university training.

JEL Classification Codes: J21,J24,A22, I23.

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Introduction :

The adoption of quality in university education is a key element for the success and advancement of the university, as it reflects a real assurance of improving student quality and providing them with the necessary skills to develop their talents and abilities in order to facilitate their integration into the labor market. A market that represents a university's number one customer and consequently determines the quality and characteristics that alumni should possess (Dejoux, 2001).

According to numerous studies, a significant proportion of university graduates in Algeria suffer from unemployment, which can be explained by several factors including the issue of the mismatch between university education and the labor market. In other words, the dissatisfaction with university outputs that no longer meet the real needs of the labor market (Bwashat, 2011).

The existence of this gap between the Algerian university education quality and labor market requirements led us to explore a representative sample from ISTA at Oran 1 University regarding the compatibility of Algerian university education with the job market. The main question addressed in this article can be summarized as follows: what is the degree of compatibility of the university education services provided at ISTA Oran 1 university, with the labor market? Several sub-questions arise from this:

- 1- What is quality of the institutes's teaching staff concerning their relationship with the job market? Do they involve professionals?
- 2- What are the professional skills and their relationship with the job market?
- 3- Are the educational programs and teaching methods relevant to the job market?

To answer these questions, one proposes the following hypotheses: the quality of teaching at the institute is low compared to the labor market. The second hypothesis is as follows: students' skills are insufficient compared to the labor market. As for the third hypothesis: the content of educational programs and teaching methods at the institute are not in line with the labor market.

Study Objectives

Through this study, one aims to:

- 1 - Attempt to address the issue of unemployment among Algerian university graduates by identifying gaps in their education.
- 2 - Obtain objective information about the quality of university education in Algeria through ISTA institute, focusing on the alignment of its education with the job market.

Methodology

The aim of researchers is to explore the degree of compatibility of the university education services provided at ISTA University of Oran 1 with the job market. using a case study methodology based on a questionnaire. The study approach consisted of first testing the validity of this tool, then distributing it to a representative sample of institute in order to acquire, transform, and process data using SPSS software, and finally analyzing and interpreting results within framework of hypotheses initially formulated.

1. ISTA and its Particularity (BAM Department)

Institute of Applied Science and Technology (ISTA) is a program co-constructed by Algerians and French and accredited by Algerian Ministry of Higher Education. A common core over four semesters and specialization lasting two semesters. The two available specializations are Human Resources Management and Accounting /Finance. The Professional degree in Business and Administration Management (BAM) aims to train specialized intermediate executives in human resources management (HRM) or accounting/finance (CF). These degrees are designed for direct entry into the job market. The specialization in either HRM or CF take place during third year. Students develop specific skills in HRM or CF, enabling them to effectively support decision-makers, both in gathering and processing information and in implementing operational actions. In some cases, graduate can pursue a path of entrepreneurship or business ownership. The scope of skills is broad, allowing them to contribute to various aspects of the organizational value chain. ISTA's main objective is to facilitate professional

integration at the level of a Professional License, achieved through high-quality education and strong involvement of companies and employers.

2. Education at ISTA BAM Department

The training program at ISTA's Department of BAM is organized into six semesters, divided into units of teaching, with three units per semester. The chosen pedagogical approach is project-based methodology. The future professionals are exposed to theoretical and practical situations, allowing them to apply their knowledge and skills effectively while also developing their soft skills, which are a key factor for their integration into the professional environment, adaptability, and personal and professional growth.

2.1 Tutored Project: Professionalizing Students, from Defining Assignments to Assessment

Tutored project activity is an approach to practice profession of higher technician in an organization and therefore aims to develop professional skills of future graduate, namely:

- Applying knowledge and know-how into practice;
- Experimenting with transdisciplinarity;
- Learning and applying project management methodology (drawing up specifications, working in groups, managing time and deadlines, communication)
- Developing student's interpersonal skills: autonomy and qualities needed for teamwork (initiative, communication skills, coordination, etc.).

Three categories of tutored projects are offered to students at BAM institute:

- Humanitarian and cultural projects
- Projects to promote department and university life
- Exploration and field survey projects.

The purpose of the tutored project is to:

- Enable students to put into practice the knowledge acquired during their training.

- Learn to work as part of a team under time and resource constraints.
- Demonstrate their capacity for initiative, autonomy, and sense of responsibility.

2.2 the business Club

. Validation of the internship subject before signing the agreement is mandatory. The subject is proposed by the company, and the club must ensure that it aligns with the student's training. This process prevents companies from using interns as free labor and ensures there is no deviation from the intended purpose.

Each department has a framework for the internship: defining what is expected from the student and the skills they should acquire. Therefore, the internship subject proposed by the company should align with the framework of the internship

2.3 Cross-disciplinary Pedagogical Activities

In the marketing techniques program, there's a module called: developing commercial performance, a cross-disciplinary activity. It is not like other courses. The goal is to ensure that students don't have siloed view of information. An activity will be created in which students will use HR and financial analysis to understand company's issues and conduct a diagnostic assessment. This is what makes it unique where they reinvest previous semesters or weeks in cross-disciplinary integration approach.

2.4 ISTA-Entreprise Relationships - Partnership Formats

- use Facebook and Instagram (student target) and Twitter (institutional and corporate target) for events.
- Develop alumni network which is essential and strategic network for the institute. Use these networks for professional events to connect with companies interested in hiring interns, ask companies to participate in sponsoring certain events etc.
- Expand the network by sending questionnaires to companies asking them if they are willing to accept interns for the upcoming year.
- Post job offers on the alumni network

3. Methods and Materials:

The sample represents teacher-researchers and teachers in administrative positions at ISTA institute. Due to human material and time limitations, information gathered from questionnaire was analyzed statistically using SPSS software. one utilised a random sample represented by 47 teachers, accounting 75.80% out of total of 62 teachers (Table 01). This sample is sufficient for generalizing the study's results.

- utilization of Likert scale:
 - o Strongly agree
 - o Agreed
 - o Neutral
 - o No agreement
 - o Strongly disagree

Table 1: Distribution of Teachers at the Institute of Applied Sciences and Techniques, Oran 1 University

Dept/grade	Temporary employee	Assistant professor B	Assistant professor A	Lecturer	Senior Lecturer	Professor	TOTAL
OVL	3	0	1	1	1	1	7
MPIS	3	0	2	5	0	0	10
BAM	19	0	0	3	1	1	24
OVL/MPIS	3	6	3	5	2	1	20
OVL/MPIS/BAM	0	0	1	0	0	0	1
Total	28	6	7	14	4	3	62

Source: General Secretariat of the Institute.

3.1 Presentation of the Questionnaire:

The first axis: quality of the teaching staff in terms of their suitability for the job market:

Q1: The institute has a highly qualified teaching staff in professional disciplines.

Q2: Teachers pay particular attention to applied research that reflects the problems and needs of labor market.

Q3: Teachers are selected on their experience as well as their academic qualifications.

Q4: Members of teaching staff are constantly undergoing training in coordination with labor market organizations.

Q5: Teaching staff assess students based on a theoretical exam as well as a practical exam.

Q6: Institute's teaching staff aim to develop students' skills in areas of communication, languages, teamwork, and analytical capacity, etc. (functional skills).

The second axis: quality of students from a functional perspective and their relationship with the job market.

Q7: Student contributes to discussion of practical issues during classes

Q8: Students tend to choose professional programs over academic courses due to their relevance to the job market reality.

Q9: Students aim to acquire functional skills (proficiency in foreign languages and IT tools, communication and teamwork, etc.).

The third axis: quality of curricula and teaching methods and their relationship with labor market

Q10: Institute is continuously developing its programs to meet the needs of the job market.

Q11: Content of program corresponds to skills that students will need in the job market.

Q12: Teachers rely on development of students' analytical side rather than parochialism.

Q13: Institute ensures that students benefit from ongoing work placements, in line with job market, to acquire professional skills.

Q14: Institute organizes conferences conducted by research professors and professional managers to combine theoretical aspect with practical reality.

4 Results and Discussion:

In this section, one will attempt to present and discuss results of study according to the established hypotheses focusing on three lines:

The first aspect: the quality of the teaching staff in terms of their suitability for the job market.

After data analysis on the first axis and conducting various statistics, one obtains the following table:

Table 2: Analysis of results of the statements regarding the first axis: the quality of teaching staff in terms of their suitability for labor market

Number		Strongly agree	Agreed	neutral	No agreement	Strongly disagree	Total	Average	Str dev	P-value
Q1	N	00	14	15	13	5	47	2.81	0.99	0.14
	%	00	29.8	31.9	27.65	10.65	100			
Q2	N	03	17	19	06	02	47	3.28	0.92	0.00
	%	6.35	36.2	40.45	12.7	4.30	100			
Q3	N	03	17	05	14	08	47	2.85	1.26	0.05
	%	6.35	36.2	10.65	29.8	17	100			
Q4	N	00	01	05	24	17	47	1.79	0.72	0.00
	%	00	2.10	10.65	51.05	36.2	100			
Q5	N	01	08	19	14	05	47	2.70	0.95	0.00
	%	2.10	17	40.45	29.80	10.65	100			
Q6	N	2	11	17	15	2	47	2.91	0.95	0.00
	%	4.30	23.4	36.2	31.9	4.30	100			
Total average								2.75	0.56	0.10

Source: Survey results

- Analysis of the results for question (Q1): The institute has a highly qualified teaching staff in professional disciplines.
- Table (02) shows that the majority of respondents “neutral” with the first question, given the overall mean of 2.81, which indicates that respondents consider the teaching staff at the institute to be qualified in professional discipline. However, this does not constitute a majority allowing us to make a general statement.
- The value of the standard deviation is (0.99), which indicates that responses are homogeneous and not dispersed in relation to overall mean. Consequently, the majority of respondents (29.8% approve and 31.9% neutral) consider the teachers qualified in professional disciplines.
- Analysis of the results for question (Q2): Teachers pay particular attention to applied research that reflects problems and needs of the job market.
- The table above shows that the majority of respondents are rather in agreement, with an overall mean of (3.28), This indicates that only a portion of the institute's teachers, not all of them, focus on applied research, making it difficult to make a general statement of approval or disapproval for the content of the question.

- . The value of standard deviation (0.92) indicates that responses are concentrated around and not dispersed from overall mean. Consequently, the majority of respondents (40.45%) do not make an absolute judgment on question.
- Analysis of results for question (Q3): Teachers are selected based on their field experience in addition to their academic qualifications.
- In same table, it is clear that majority of respondents tend to agree, given overall mean of (2.85), which is concentrated in the range [2.6-3.4], which means that most teachers at institute consider recruitment process based on the degree as a prerequisite and professional experience as a secondary condition.
- The value of general standard deviation (1.26) refers to dispersion and lack of concentration of responses, indicating variation in majority responses to question.
- Analysis of the results for question (Q4): Members of the teaching staff constantly undergo training in coordination with organizations in the job market.
- We can see in Table (02) that the majority of respondents disagree with the fourth question, given the mean of 1.79. This indicates that the institute's teachers do not benefit from training provided by organizations in the job market to develop their skills and keep up with the latest trends related to the professional reality to impart to the students. The standard deviation (0.72) indicates that the responses are concentrated around the overall mean and not widely dispersed. Therefore, the majority of respondents (51.05%) disagree, and (87.25%) strongly disagree.

Analysis of results for question (Q5): In student evaluation, the teaching staff relies on both theoretical and practical examinations (related to work reality).

The above table shows that the majority of respondents are rather in agreement with the question. They observe that teachers evaluate students based on case studies and field research in addition to asking for concrete and real-life examples to assess the students' ability to link theory with practice. However, some teachers limit student evaluation only to the theoretical aspect without association with real-life situations.

Therefore, we cannot generalize the content of the question by approving or disapproving it for all teachers at the institute. The standard deviation (0.95) indicates that the responses are concentrated around the overall mean and not widely dispersed

- Analysis of results for question (Q6): Teachers at institute aim to develop students' skills in areas of communication, languages, teamwork, and analytical ability..., (functional skills).

It is evident from the same table that the majority of respondents tend to select "neutral" for the sixth question, indicating that a percentage of the institute's teachers focus on developing students' functional skills, such as communication, languages, report preparation, etc., to facilitate their integration into the job market after graduation. The standard deviation (0.95) indicates that the responses are concentrated around the overall mean and not widely dispersed.

- . Test of First Axis Hypothesis

The Main hypothesis for the first axis are as follows:

H0: the quality of teaching at institute is low compared to labor market.

H1: the quality of teaching at the institute is not sufficiently low compared to labor market.

The following table shows results of t-test used to estimate the first axis.

Table 3: Results of "T" test used to assess the quality of teaching force in terms of its suitability for labor market.

The quality of teaching staff in relation to the jobmarket	Number	Ddl	Average	Str dev	T tabulated	T calculated	P-Value
	47	46	2.75	0.95	3	-2.98	0.005

Source: Survey results

According to Table (03), by applying the Student's t-test on the difference between the calculated mean and the estimated mean of "3" at a statistical significance level ($\alpha \leq 0.05$), we observe that the value of (t) is equal to (-2.98) with a significant threshold of (0.005), which is lower than the significance level of 0.05 ($\text{sig} = 0.005 < 0.05$). This indicates that this difference is statistically significant. Therefore, we reject the null

hypothesis of the test, which states that the quality of teaching at the institute is low compared to the job market, and we confirm the alternative hypothesis (H1) that the quality of teaching at the institute is not low (sufficient) compared to the job market

The second axis: the quality of students from a functional perspective and their relationship with labor market.

After analyzing data for first axis and performing various statistics, we obtain:

Table 4: Analysis of results of second axis statements: the quality of students from a functional perspective and their relationship with the market

Number/ position	Strongly agree	Agreed	neutral	No agree	strongly disagree	Total	Average	Str dev	p- value	
Q7	N	00	09	20	15	3	47	2.74	0.84	0.003
	%	00	19.1	42.6	31.9	6.4				
Q8	N	00	12	11	18	6	47	2.62	1.01	0.01
	%	00	25.5	23.4	38.3	12.8				
Q9	N	00	04	14	19	10	47	2.26	0.89	0.016
	%	00	8.5	29.8	40.4	21.3				
Total average							2.66	0.62	0.032	

Source: Survey results

- Analysis of results for question (Q7): The student contributes to the discussion of debate on practical issues during classes and proposes solutions.
- The table shows that the majority of respondents tend to agree with the seventh question, given the overall average, which indicates that teachers feel that a small percentage of students contribute to the discussion of practical issues during lessons, either on their own initiative or on the initiative of teachers. Therefore, one cannot make a general statement about all students.
- We would point out that debates in question concern concrete problems and that teacher must adopt a particular pedagogy by explaining lessons using concrete examples. The value of standard deviation (0.84) indicates that responses are concentrated and not dispersed in relation to general average. The majority (42.6%) were therefore close to “neutral” responses.
- Analysis of results for question (Q8): Students tend to choose professional training

- over academic training due to its relevance to the job market.
- It is clear from above table that majority of respondents tend to disagree with eighth question, given overall mean of (2.62), which falls within range [2.6-3.4], indicating that teachers feel that few students choose professional disciplines based on their knowledge of the labor market needs or because they facilitate the process of integration into the labor market after graduation by providing the necessary professional skills. The value of standard deviation (1.01) indicates that respondents' answers are neither concentrated nor dispersed in relation to value of overall mean, indicating variation in majority of responses.
- Analysis of the results for question (Q9): Students aim to acquire functional skills (mastery of foreign languages and IT tools, communication and teamwork, etc.).
- In same table, it appears that majority of opinions do not approve content of ninth question, given overall average, which indicates that teachers feel that students at institute do not seek to acquire functional skills during their university education but rather content themselves only with the theoretical aspects provided by the teachers.
- From our point of view, this situation complicates the student's future integration, especially considering the fierce competition in the job market. The value of standard deviation (1.01) indicates that respondents' answers are neither concentrated nor dispersed in relation to overall average, indicating variability and divergence in the majority responses.

Test of General Hypothesis of the second axis

The general hypothesis of second axis is as follows:

H0: the student's skills are insufficient compared to the job market.

H1: the student's skills are sufficient compared to the job market.

Following table shows the results of t-test estimated to assess the second axis:

Table N°5: "T" test results for the quality of students compared to the job market.

The quality of students in relation to the job market	Number	Ddl	Average	Str dev	T tabulated	T calculated	P-value
	47	46	2.66	0.62	3	-3.65	0.001

Source: prepared by the researchers using SPSS

According to the table, by applying the student T test on the difference between the calculated mean and the estimated mean “3” at the statistical significance level, ($\alpha \leq 0.05$), one finds that the value of (t) is equal to (-3.65) with a significant threshold of (0.005), which is below the 0.05 significance level ($\text{sig} = 0.001 < 0.05$), this indicates that this difference is statistically significant and therefore one rejects null hypothesis of the test according to which student’s skills are insufficient for the labor market. Instead, one confirms the statistical hypothesis (H1) which states that student’s skills are sufficient for the labor market.

The third axis: the quality of programs and teaching methods and their relationship with the labor market.

After analyzing the data from the first axis and performing various statistics, the following table is obtained:

Table 6: Analysis of the results of statements related to the third axis: the quality of programs and their relationship with the job market

Number/ position		totally agree	Agreed	Neutral	No agree	totally disagree	Total	Average	Str dev	p- value
Q 10	N	2	8	21	9	7	47	2.77	1.04	0.00
	%	4.3	17	44.7	19.1	14.9	100			
Q 11	N	00	10	21	11	05	47	2.77	0.91	0.00
	%	00	21.3	44.7	23.4	10.6	100			
Q 12	N	02	14	19	10	02	47	3.09	0.92	0.00
	%	4.3	29.8	40.04	21.3	4.3	100			
Q 13	N	02	10	19	11	10	47	2.64	1.16	0.07
	%	4.3	21.3	29.8	23.4	21.3	100			
Q 14	N	00	05	15	15	12	47	2.28	0.97	0.128
	%	00	10.6	31.9	31.9	25.5	100			
Total average								2.80	0.94	0.097

Source: Survey results

- Analysis of the results of question (Q10): The institute continuously develops its programs to meet the needs of the job market.

The table shows that the majority of teachers tend to be "somewhat in agreement" with the statements in question 10, given the average value of (2.77), which falls within the interval [2.6-3.4]. This indicates that 44.7% of the institute's teachers neither fully approve nor completely reject the content of the tenth question. The institute will strive to develop programs in certain specialties if deemed necessary, in line with the needs of the job market. For example, this could include incorporating Enterprise Resource Planning (ERP) learning to address the demands of the job market.

- Analysis of the results of (Q11): Content of program corresponds to the skills that students will need in the job market.

The table above shows that respondents' opinions tended to be somewhat in agreement. The average is (2.77), which indicates that teachers are not categorically aligned with the question. Content of training is in line with needs of the job market, particularly with certain modules such as accounting, computer science and foreign languages, labor law, finance, auditing, etc. However, at same time, some modules are purely theoretical. The value of standard deviation (0.91) indicates that the respondents' answers are concentrated around the average.

- Analysis of results of question (Q12): Teachers rely on developing students' analytical side rather than rote learning.

In the table, it is evident that the majority of respondents tend to be somewhat in agreement with question 12, considering the average value, which indicates that teachers are not categorically aligned with the content of the question. Each teacher has their own pedagogy and teaching method, and some may emphasize developing students' analytical skills through group work, case studies, etc. as these methods are useful for fostering functional skills in students and significantly enhancing their comprehension abilities.

- Analysis of results of question (Q13): the Institute ensures that students benefit from continuous internship that align with the job market to acquire professional skills. The value of standard deviation (1.16) indicates that respondents' answers are not

concentrated. As a result, responses diverge, with large percentage (44.7%) disagreeing with content of question while (25.1%) agreeing with what is stated as they consider that students undertake vocational training with placements during three years of their cycle.

- Analysis of results of question (Q14): the institute organizes conferences led by teacher-researchers and professional managers to combine theoretical aspect with practical reality. The same table shows that (31.9%) of the opinions disagree with question 14, meaning that the institute does not sufficiently involve professionals in delivering conferences across various disciplines and benefiting from their professional experience. The percentage of those who are generally in disagreement is (57.4%), an absolute majority compared to those who agree with the content of the question.
- Test of General Hypothesis of Third Axis

The general hypothesis of the third axis is as follows:

H0: The content of teaching programs and teaching methods at the institute align with the labor market.

H1: The content of the teaching programs and teaching methods at the institute do not align with the job market.

The following table shows the results of the T-test to estimate the third axis:

Table 7: T-test results for a single sample for program quality and teaching methods in relation to the labor market.

The quality of programmes in relation to the jobmarket	Number	Ddl	Average	Str dev	T tabulated	T calculated	P Value
	47	46	2.80	0.69	3	-1.98	0.053

Source: Survey results

According to the table, when applying the Student's t-test on the difference between the calculated mean and the estimated mean "3" at a significance level ($\alpha \leq 0.05$), we observe that the value of (t) is equal to (-1.98) with a non-significant threshold of (0.053), which is higher than the significance level of 0.05 ($\text{sig} = 0.053 > 0.05$). This indicates that this difference is statistically not significant, and therefore, we accept the null hypothesis of the test, which states that the content of the teaching programs

and teaching methods at the institute align with the job market (H0). Additionally, we reject the alternative hypothesis (H1), which suggests that the content of the teaching programs and teaching methods at the institute do not align with the job market.

Conclusion:

The university is one of the most important institutions in higher education and serves as a key provider of skilled workforce in any society. Its primary task is to educate and train this workforce based on quality rather than quantity. The reform of the university education system in Algeria is crucial for its revival and development. Academic institutions need to transition from the old traditional approach to a system focused on creativity and scientific research.

Based on the gathered results, it is evident that both the Algerian university system and the institute under study face challenges in terms of their connection with the job market. This may explain the prevalence of unemployment among graduates in general, and in certain disciplines, in particular. Algeria, as a whole, needs to overcome this dilemma by effectively embracing quality principles that are customer-oriented, as represented by the job market. Efforts should be made to continuously improve the educational services provided to graduates, in line with their needs, through coordination between the university and the job market organizations. Emphasizing the qualitative aspect of university education in Algeria requires overcoming various obstacles and meeting several necessary requirements, all while adapting to a model that is derived from the country's reality.

Recommendations:

- Strengthening university-business partnerships
- Continuous adaptation of programs to labor market needs
- Development of students' soft skills
- Increased involvement of professionals in teaching

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