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Effectiveness of Entrepreneurship Teaching Methods and Curricula in Developing the Innovation Culture -A Case Study of the Faculty of Economics, Commercial Sciences and Management at Laghouat University in Algeria-

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ABSTRACT:
This study aims to evaluate the role of entrepreneurship teaching methods and curricula in developing the innovation culture among students at the Faculty of Economics, Commercial Sciences and Management at Laghouat University in Algeria. Convenience random sampling techniques were applied, and questionnaires were used to collect data from a sample of 300 students enrolled in the Management Sciences department. We relied on the Statistical Package for Social Sciences (SPSS) software to process the data, and then used Smart PLS software to model the relationship between the study variables.

The results of the study revealed that there is a statistically significant effect of the variable teaching methods and techniques on the innovation culture at a significance level of 0.05. Moreover, this study also found that there is no statistically significant effect of the variable educational programs and methodology on the innovation culture at a significance level of 0.05.

From a theoretical perspective, this paper emphasizes the importance of the entrepreneurship teaching method. From a practical perspective, it suggests that universities should pay attention to designing their curriculm effectively in a way that enhances the students' innovation culture, which in turn reflects on creating jobs and promoting creativity and innovation in the market to promote economic growth.

Keywords: Innovative culture; Teaching methods; Educational methodology.

Introduction:

The current era is witnessing rapid changes and developments in the field of business and technology, where entrepreneurship has become one of the main pillars for the advancement of societies and economies locally and globally. Entrepreneurship is also considered one of the most important aspects that help in building and developing companies. In this context, entrepreneurship curricula and teaching methods play an important role in promoting skills and developing an innovative culture, allowing students to develop their abilities in finding creative solutions and presenting innovative ideas.

Problem Statement:

The problem of the study is based on measuring and analyzing the effects that entrepreneurship teaching methods and curriculm can have on developing an innovative culture, by applying it in the field to the case of Amar Thliji Laghouat University, Faculty of Economics, Commercial Sciences and Management, by answering the following question:

- How do entrepreneurship teaching methods and curricula affect the development of an innovative culture?

To answer the previous problem, the following questions can be asked:

- What are the methods of teaching entrepreneurship?
- What is the curriculum? What are the main points for promoting a culture of innovation?

Study Hypotheses:

- There is a statistically significant effect between entrepreneurship teaching methods and innovative culture at Amar Thliji Laghouat University, Faculty of Economics, Commercial Sciences and Management at a significance level of 0.05%.
- There is a statistically significant effect between educational programs and content and innovative culture at Amar Thliji Laghouat University, Faculty of Economics, Commercial Sciences and Management at a significance level of 0.05%.

Importance of the Study:

The importance of the study is reflected in the following:

- Addressing the theoretical aspects of entrepreneurship teaching methods, programs and educational content;
- Developing the innovative culture of students and enhancing their skills in the field of entrepreneurship;
- Contributing to improving and developing the competitiveness of Laghouat University locally and internationally;
- Promoting scientific and innovative research in the field of education;
- Promoting sustainable development in the field of entrepreneurship by adopting innovative methods and modern curricula at Laghouat University;
- Strengthening the interaction between industry and Laghouat University.

Study Objectives:

This study aims to:

- Identify the extent to which entrepreneurship teaching methods and curricula affect the development of an innovative culture at Amar Thliji Laghouat University, Faculty of Economics, Commercial Sciences and Management.
- Evaluate the current teaching methods and curricula used at Laghouat University.

Methodology:

To answer the research question and test the hypotheses, the descriptive method was adopted to understand the theoretical foundations of the topic. This method was used to describe the aspects of the study, such as the basic concepts and definitions of the study variables.

For the practical aspect, the descriptive method was used to identify the different effects between the study variables and the nature of the relationship between entrepreneurship teaching methods and curricula and the innovative culture at Amar Thliji Laghouat University, Faculty of Economics, Commercial Sciences and Management.

Structural equation modeling (SEM) was used in the field study using the partial least squares (PLS) method with the (SMART PLS software version 4).

The SPSS software was used to analyze the questionnaire data, and the EXCEL software was used to enter the questionnaire data of the studied sample, draw the graphs, and determine the path scope of the study model between the variables.

This was done to identify the effect between the variables statistically and to answer the research question and test the validity of the hypotheses statistically by analyzing the responses of the studied sample.

2 Theoretical Framework: This section will discuss the literature related to the study variables.

1.2 Entrepreneurship Teaching Methods:

A. Entrepreneurship Education:

According to the International Labour Organization and UNESCO, entrepreneurship education is a comprehensive educational approach based on informing, training, and educating individuals who wish to participate in economic and social development and develop their entrepreneurial skills through projects aimed at promoting entrepreneurial awareness and supporting the establishment and development of small projects (Al-Maz, 2022, p. 444).

B. The Academic Entrepreneur:

An academic entrepreneur is a person with extensive experience in a specific field and a strong desire to transform that experience into a driving force for positive change in the world. They also realize that their impact is not limited to the university, but extends to a large audience, which allows them to have a deep and profound impact. They are innovative and always willing to take risks, and they constantly seek to discover new opportunities to achieve a work-life balance and achieve personal satisfaction without compromising the quality and effectiveness of their work (Academic Entrepreneur, 2021).

C. The Concept of Entrepreneurship Teaching Methods:
The methods used in entrepreneurship education are generally classified into two main approaches:

- **Traditional Approach:**
  This approach involves exercises and lectures, such as lectures on basic concepts and principles, and lectures by experts to provide students with a comprehensive overview of practical experiences. The tasks focus on processing theoretical information and assessing its understanding and comprehension. According to many authors, the traditional method does not encourage the entrepreneurial spirit and initiative and does not contribute to the effective development of businesses.

- **Innovative (Active) Approach:**
  This approach is a more active and work-oriented approach that focuses on student participation and interaction, such as business simulations, case studies, business planning, and the creation of teams and networks for entrepreneurship students. It also involves conducting internships in small businesses, conducting feasibility studies, solving problems, and analyzing real businesses. This approach aims to make students more effective in the learning process (Pech, Řehoř, & Slabová, 2021, pp. 67-68).

2.2 Educational Programs and Content:
A. Definition of Curriculum:
The curriculum is all the skills that should be achieved through experiences and types of educational programs.

B. The Role of Curriculum Reform in Changing Societies:
Educational policies in many countries around the world seek to integrate this vital concept into the curriculum. The importance of including entrepreneurship in the curriculum is reflected in meeting the needs of society and the modern economy. However, the success of this change depends largely on the efficiency and willingness of teachers to adopt these transformations and updates in teaching methods and to transfer this information and knowledge to students. The role of the teacher is to guide and encourage students to innovate and think critically and develop their entrepreneurial skills, which makes them qualified to face the changing requirements of the labor market with efficiency and confidence (Seikkula-Leino, 2011, pp. 72-74)

C- Educational Programs:
Many universities have developed various educational programs in the field of entrepreneurship, including:

- Establishing entrepreneurship centers on campus;
- Developing student programs to enhance their entrepreneurial skills;
- Implementing programs to enhance students' work skills and productivity;
- Providing working capital support for students who want to start their own businesses;
- Independent entrepreneurial programs for students;
- Prioritizing entrepreneurship as a core part of the curriculum (Wahidmurni, Nur, Abdussakir, Mulyadi, & Baharuddin, 2019, p. 3).
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3.2 Innovation Culture:
A. Definition of Innovation:
According to the Oslo Manual, issued by the Organization for Economic Co-operation and Development (OECD) and the Statistical Office of the European Communities (EUROSTAT) in 2005, innovation is defined as the process of integrating a new or improved element within the context of an organization. This element can include a variety of aspects such as products, processes, services, or methods. Innovation also reflects the investment of resources and efforts to develop new ideas and improve existing methods and processes in order to achieve excellence and development, and raise the level of efficiency and productivity (Carvaja, Pérez, Cabello, & Espinosa, 2015, p. 134).

B. Key Points for Promoting a Culture of Innovation:
*** Leadership Role:** The leader plays a crucial and vital role in guiding the course of innovation. They should promote a culture that encourages risk-taking and stimulates new ideas. They should also be supportive and involved with employees in the innovation process to motivate, inspire, and boost their motivation.

*** Encouraging Risk-Taking:** Providing a safe space for risk-taking is essential. Employees should feel able to take risks without fear of failure, and the organization should learn from mistakes rather than punishing them. This helps create a culture that encourages risk-taking.

*** Open Communication:** This involves listening to everyone's voice, considering their opinions, and encouraging open dialogue, brainstorming, and providing communication channels.

*** Adaptability and Flexibility:** Roles and hierarchies should be more flexible, allowing freedom of work. Organizations should also be adaptable to change and remain flexible.

* **Recognition and Rewards:** This involves encouragement and rewards by providing incentives and recognizing innovative thinking and new ideas.

*** Continuous Learning and Resource Allocation:** This means continuous development and allocating resources to innovative initiatives.

C. Factors Hindering the Spirit of Innovation:
- A rigid and conservative culture based on tradition that stifles anything new and innovative;
- Controlling management that controls employee performance through supervision;
- Excessive bureaucracy;
- Limited resources;
- Compliance with laws and regulations: This compliance and adherence hinders innovation;
- Resistance to change and preference for staying in the comfort zone;
- Overemphasis on profit;
- Lack of a clear innovation process in the organization that helps employees suggest their innovative ideas (RUSU, 2023, pp. 128-133).

3. Application Framework:
In this section, we will try to apply the study in the field:
The Statistical Package for Social Sciences (SPSS) software was used to analyze the data, and Smart PLS software was used to model the relationship between the study variables.

This study was conducted at the Faculty of Economics, Commercial Sciences and Management at Laghouat University, where 300 questionnaires were distributed to a sample of students in the Management Sciences department. 254 questionnaires were returned, representing 85% of the total number of questionnaires distributed. After reviewing the returned questionnaires, 242 questionnaires were accepted, representing 95% of the returned questionnaires.

Stephen Thompson's equation was also used to determine the sample size, which is **as** follows:

$$n = \frac{N \times p(1-p)}{\left[N-1 \times \left(d^2 \div z^2\right)\right] + p(1-p)}$$

N: Total population size
Z: Standard score, which is 1.95
d: Margin of error, which is 0.05
P: Proportion of the characteristic in the population, which is 0.50

Sample size:
The total population of the study is approximately 650 students. After applying the previous equation, the possible sample size was obtained, which is 241.

Research tool: A questionnaire was used as the main tool for collecting the data necessary to address the topic, which is divided as follows:

Section One:
Relates to the personal and demographic information of the study sample.

Section Two:
It is divided into three dimensions:

The first dimension: Relates to the independent variable, which is teaching methods and techniques.
The second dimension : Relates to the second independent variable, which is educational programs and curriculum.
The third dimension : Relates to the dependent variable, innovation culture.
1.3 Dimension1 : teaching methods and technique:

Table (01): the dimension of teaching methods and techniques

Statement	Arithmetic mean	Standard deviation	trend
01	**3.62**	**1.06**	**agree**
02	**3.76**	**0.998**	**agree**
03	**3.55**	**1.02**	**agree**
04	**3.34**	**1.04**	**neutral**
Total	**3.56**	**0.710**	**agree**

Source: Prepared by the researchers based on SPSS outputs.

According to the previous table, the mean value for the dimension of teaching methods and approaches was 3.56, which, according to the five-point Likert scale, indicates a "agree" rating. The standard deviation was 0.710, which is less than 1, indicating a convergence of opinions in the study sample and their concentration around the overall mean of the dimension. It is also observed from the table that statement number 02 ranks first with a mean of 3.76, which indicates an "agree" rating. Its standard deviation was 0.998, indicating that the statement was more homogeneous. Statement number 01 was in second place with a mean of 3.62 and a standard deviation of 1.06. It was followed by statement number 03 with a mean of 3.55 and a standard deviation of 1.04, and statement number 04 in last place with a mean of 3.44 and a standard deviation of 1.04.

3.2 Dimension 2: Educational Programs and Curriculum

Statement	Arithmetic mean	Standard deviation	trend
05	**3.18**	**1.03**	**neutral**
06	**3.17**	**1.23**	**neutral**
07	**3 .39**	**1.21**	**neutral**
08	**3.39**	**1.25**	**neutral**
Total	**3.28**	**0.845**	**neutral**

Source: Prepared by the researchers based on SPSS outputs.

According to the previous table, the mean value for the dimension of educational programs and curriculum was 3.28, which, according to the five-point Likert scale, indicates a "neutral" rating. The standard deviation was 0.845, which is less than 1, indicating a convergence of opinions in the study sample and their concentration around the overall mean of the dimension. Statement number 07 was in first place with a mean of 3.39 and a standard deviation of 1.21, indicating a high degree of variance in the sample's dispersion around the mean. Statement number 08 was in second place with a mean of 3.39 and a standard deviation of 1.25. It was followed by statement number 05 and statement number 06.

3.3 Dimension 3: Innovative Culture:

Table (03): Innovative Culture Dimension

statement	Arithmetic mean	Standard deviation	trend
09	**3.71**	**1..07**	**agree**
10	**3.97**	**0.961**	**agree**
11	**3 .75**	**1.015**	**agree**
12	**3.94**	**1.063**	**agree**
13	**4.31**	**0.840**	**Strongly agree**
14	**3.98**	**1.037**	**agree**
total	**3.94**	**0.696**	**agree**

Source: Prepared by the researchers based on SPSS outputs.

According to the previous table, the mean value for the dimension of educational programs and curriculum was 3.94, which, according to the five-point Likert scale, indicates an "agree" rating. The standard deviation was 0.696, which is less than 1, indicating a convergence of opinions in the study sample and their concentration around the overall mean of

the dimension. Statement number 13 was in first place with a mean of 4.31 and a standard deviation of 0.840, indicating a homogeneity of the individuals' responses to this statement. Statement number 10 was in second place with a mean of 3.97 and a standard deviation of 0.961. It was followed by statement number 14 and statement number 12.

4.1 Cronbach's Alpha Coefficient :

Table (04): Cronbach's Alpha Test Results

Statements	Test Result
14	**0.72**

Source: Prepared by the researchers based on SPSS outputs.

The previous table shows that the Cronbach's Alpha coefficient value is high, at 72%. This indicates that the research instrument has high reliability.

4.2 The Measurement Model:

A. Convergent Validity Indicators:

The criteria for evaluating convergent validity are:
Loading factors ,Composite reliability ;Average variance extracted (AVE) ;The following results were obtained

Table (05): Convergent Validity

	statement	Loadin factor FL	Decision	Composite reliability CV	Average variance Extracted (AVE)
Admission		**Greater than70%**		**Greater than70%**	**Greater than50%**
Teaching methods	1	0.740	acceptable	0.818	0.531
	2	0.832	acceptable		
	3	0.772	acceptable		
	4	0.654	acceptable		
Curriclum	5	0.836	acceptable	0.775	0.536
	6	0.703	acceptable		
	7	0.721	acceptable		
	8	0.654	acceptable		
Innovative culture	9	0.897	acceptable	0.838	0.566
	10	0.519	acceptable		
	11	0.432	rejected		
	12	0.445	rejected		
	13	0.637	acceptable		
	14	0.648	acceptable		

Source: Prepared by the researchers based on Smart PLS V4 outputs.

**To assess convergent validity, we use the Fornell-Larcker (FL) loading factor, which should have a value greater than 70%. From the table, we can see that this is achieved for the following items (Q1, Q2, Q3, Q5, Q6, Q7, Q9). The following items (Q4, Q8, Q10, Q12, Q11, Q13) had factor loading values below 70%, but were accepted because the composite reliability and average variance extracted (AVE) values were at acceptable levels, except for items (Q12, Q11). To achieve a high level of convergent validity for the latent variable "Customer Satisfaction", these items were deleted. After re-evaluating the model, the AVE values were between (0.531-0.566), which is greater than 50%. This means that each variable explains more than 50% of its variance.

From the same table, we can see that the composite reliability (CV) values range between (0.775-0.838) and are above 70%. This indicates that the study has high reliability, meaning that if the study were repeated, we would obtain the same results.

B. Discriminant Validity Indicators:

The criteria for evaluating discriminant validity are:

Cross-loading
Variable correlation in the measurement model ,After processing, the following results were obtained in the following tables :

Cross loading :
Table (06): Cross-loading Index

	Teaching Methods	**Innovative Culture**	**Educational programs and curriculum**
1Q	0,138	0.277	**0,743**
2Q	0,204	0.282	**0,743**
3Q	0,242	0.212	**0,769**
4Q	0,295	0.218	**0,653**
5Q	**0,844**	0.214	0,195
6Q	**0,697**	0.065	0,267
7Q	**0,715**	0.116	0.234
8Q	**0,645**	0.065	0.202
9Q	0,199	**0.891**	0.376
10Q	0,147	**0.525**	-0.026
11Q	-0,004	**0.432**	0.001
12Q	0,059	**0.445**	0.001
13Q	0,085	**0.637**	0.134
14Q	0,083	**0.648**	0.124

Source: Prepared by the researchers based on SmartPLS V4 outputs.

Cross-loading Index:
This index measures the discriminant validity of the items by ensuring that the correlation between an item and its latent variable is greater than its correlation with any other latent variable. From the table, we can see that all the items belong to the latent variable or dimension they are supposed to, and therefore we can say that all the items are strongly correlated with their constructs.

Variable correlation : It is an index that measures the discriminant validity of the constructs by assessing their correlations with each other. The values are represented by the bold lines in the table below :

Table (07): Variable Correlation in the Measurement Model (VC)

	Teaching Methods	Innovative Culture	education programs and curriculum
Teaching methods and approaches	0.729		
Innovative Culture	0.193	0.617	
education programs and curriculum	0.283	0.334	0.752

source: Prepared by the researchers based on SmartPLS V4 outputs.

From Table , we can observe that the VC values for each variable with itself are higher than those with other constructs. Therefore, we can conclude that these variables are independent of each other.

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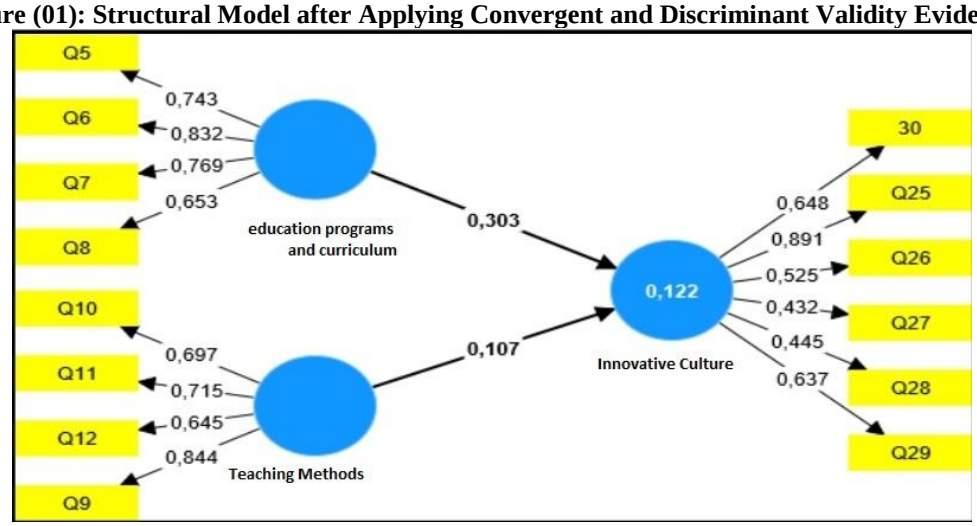
4.3 Structural Model:

Figure (01): Structural Model after Applying Convergent and Discriminant Validity Evidence



Source: Prepared by the researchers based on the outputs of Smart Pls V4

5.3 Hypothesis Testing:

1- There is a statistically significant effect of teaching methods and approaches on innovative culture at a significance level of 0.05.
2- There is a statistically significant effect of educational programs and content on innovative culture at a significance level of 0.05.

Table (8): Path Coefficient Test

	Regression Coefficients	**Standard Deviation**	**T-Test Value**	**p-value**	**decision**
Teaching Methods and Approaches	0.101	0.073	1.385	0.166	accepted
Educational Programs and Content	0.318	0.067	4.766	0.000	rejected

Source: Prepared by the researchers based on the outputs of Smart Pls V4

3 Goodness-of-Fit Indices:

Having discussed the selection of field study hypotheses, it is necessary to address the structural model fit indices. These indices are R^2, F^2, GOF, and the following table shows the most important results:

Table (9): R^2 and F^2 Indices

	Coefficient of Determination	**Fit indices F^2**	
Axis	**R^2**	**F^2**	**remark**
Teaching Methods and Approaches	**0.372**	**0.019**	**weak**
Programs and Content	**0.175**	**0.092**	**weak**

Source: Prepared by the researchers based on the outputs of Smart Pls V4

7.3 F^2 Effect Size Index:

The F^2 index is used to measure the strength and ability of the external latent variables to influence the internal latent variable. From Table (10), we can see that the effect size of teaching methods and approaches and educational programs on innovation culture is weak.

8.3 GOF Goodness-of-Fit Index:

The GOF index measures the extent to which the study model can be relied upon. This index is calculated by combining the structural model by calculating the Average Variance Extracted (AVE) and the structural model by calculating the Average R^2. The following equation summarizes this:

$$GOF = \sqrt{(R^2 * \overline{AVE})}$$

Table (10): GOF Goodness-of-Fit Index

Axis	AVE	R^2	GOF
Arithmetic Mean	0.544	0.273	0.385

Source: Prepared by the researchers based on the outputs of Smart PLS4

From the previous table, we can see that the value of the goodness-of-fit index is greater than 0.36, so it can be said that the quality of the study model is very high.

4. Conclusion and Results:

Through this research paper, we have tried to show the importance of the role of entrepreneurship teaching methods and approaches in promoting a culture of innovation on campus, especially at Laghouat University. Through the analysis of the case study, it was found that:

Hypothesis 1: There is a statistically significant effect of the variable teaching methods and approaches on the innovation culture at a significance level of 0.05. It is clear from the correlation coefficient, which reached 32.3%, that there is a weak positive correlation between teaching methods and approaches and the innovative culture. Teaching methods and approaches explain 13.8% of the variation in the innovation culture. The F^2 effect size shows that there is a weak effect of teaching methods and approaches on the innovative culture.

Hypothesis 2: There is no statistically significant effect of the variable educational programs and methodology on the innovative culture at a significance level of 0.05. It is clear from the correlation coefficient, which reached 17.5%, that there is a weak positive correlation between educational programs and methodology and the innovative culture. Teaching methods and approaches explain 3% of the variation in the innovative culture. The F^2 effect size shows that there is a weak effect between educational programs and methodology and the innovative culture.

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