

Developing an Entrepreneurship Education Model for Pre-University Students: A Framework for Cultivating Entrepreneurs in Algeria

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Abstract:

Recent developments at global, societal, organizational, and individual levels underscore the urgent need to foster entrepreneurial mindsets. Despite its critical role in advancing knowledge-based economies, entrepreneurship education remains underdeveloped in the Arab world, particularly in Algeria. This study emphasizes the importance of integrating entrepreneurship education across all academic levels, from primary to university education.

It proposes a comprehensive framework based on key elements such as learning environment, vision, mission, strategic goals, and core values. The research addresses two central questions: To what extent can an entrepreneurship education program reduce perceived barriers among students, and how does it enhance their ability to launch and sustain entrepreneurial ventures? The findings aim to provide actionable insights for policymakers and educators to promote entrepreneurial culture and economic growth.

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Introduction :

Entrepreneurship stands as a cornerstone of economic development and institutional performance, driven by creativity, innovation, and adaptability in the face of evolving market and industrial landscapes. Beyond its economic contributions, entrepreneurship has proven to be a powerful tool for job creation and accelerating growth, particularly in regions grappling with unemployment and economic stagnation.

Education, meanwhile, serves as the bedrock of a robust knowledge-based economy. Countries like Taiwan, South Korea, and Malaysia have demonstrated how strategic investments in education and vocational training can catalyze remarkable economic progress. These nations have not only enhanced productivity but also fostered a culture of innovation, enabling them to compete effectively on the global stage. For Algeria and similar developing economies, the integration of information and communication technologies with creative skill development is essential to cultivating a workforce capable of navigating the complexities of modern labor markets.

In recent years, entrepreneurship education has emerged as a transformative solution to economic challenges. By equipping students with the cognitive, skill-based, and value-oriented competencies needed to transform ideas into viable ventures, entrepreneurship education has become a critical driver of both the quantity and quality of entrepreneurial activities. This is particularly relevant in mature economies, where such programs have been instrumental in transitioning graduates into self-employment or meaningful paid work. Consequently, entrepreneurship education has ascended to the top of social, economic, and political agendas, gaining recognition as a priority for governments worldwide, whether in industrialized or developing nations.

The belief that entrepreneurship can be taught has gained widespread acceptance, positioning it as an educational process that nurtures students' abilities to innovate, take risks, and create job opportunities. As *Ibrahim* aptly notes², individuals can acquire the knowledge and skills necessary to establish and grow businesses through formal education, vocational training, and experiential learning—the latter being particularly effective in bridging the gap between theory and practice.

Research further underscores the impact of well-designed entrepreneurship education programs in boosting aspiring entrepreneurs' confidence and readiness for success. *Hytti and O'Gorman* emphasize the

- ²Ibrahim, A. B. and Soufani, K., (2012). "Entrepreneurship Education and Training in Canada: A Critical Assessment, Education + Training", 44(8/9).

importance of integrating specialized courses and training across all educational levels to cultivate an entrepreneurial mindset from an early age³. This approach not only prepares students for the challenges of entrepreneurship but also fosters a culture of innovation and resilience. In light of these developments, this study addresses a critical question: **How can an entrepreneurship education program help students overcome perceived barriers, and how does this influence their ability to launch and sustain entrepreneurial ventures?** By exploring this issue, we aim to provide actionable insights for policymakers and educators seeking to promote entrepreneurial culture and drive economic growth.

Importance of the Study

Entrepreneurship education has become a vital and transformative approach to reshaping pre-university education, capturing the attention of both international and regional stakeholders. Its significance lies in its ability to tackle pressing educational challenges while aligning with the demands of today's knowledge-driven economy. By fostering innovation, creativity, and adaptability, entrepreneurship education prepares students to navigate the complexities of the modern world.

This growing focus on entrepreneurship education is strongly supported by leading global and regional organizations, such as UNESCO, the European Commission, and the OECD. These institutions recognize its potential to equip students with the skills, mindsets, and attitudes needed to succeed in the 21st century. In a world where change is the only constant, entrepreneurship education empowers young people to think critically, solve problems, and seize opportunities in an ever-evolving global landscape.

Study Objectives :

1. This study underscores the pivotal role of entrepreneurship education in addressing key challenges within pre-university education systems. By fostering social integration, bolstering the knowledge-based economy, and stimulating the growth of small and medium-sized enterprises (SMEs), entrepreneurship education serves as a catalyst for both social and economic development. Its impact extends beyond the classroom, equipping students with the tools to contribute meaningfully to their communities and economies.
2. Furthermore, this research emphasizes the critical importance of integrating entrepreneurship education at the pre-university level, particularly in the Arab world and Algeria, where such initiatives remain underexplored. By doing so, it seeks to bridge a significant gap in the existing literature, offering fresh insights into how tailored educational programs can align with the unique socio-economic contexts of these regions.

- ³ Hytti, U. and O'Gorman, C., (2014). "What is Enterprise Education"? An Analysis of the Objectives and Methods of Enterprise Education Programmes in four European Countries. *Education + Training* », 46(1), PP. 11-23.

3. In addition to its theoretical contributions, this study proposes a practical model for a specialized entrepreneurship education program designed specifically for pre-university students in Algeria. This model is carefully crafted to ensure that educational objectives are closely aligned with the demands of the labor market, thereby preparing students not only for academic success but also for meaningful participation in the workforce. By addressing both educational and economic needs, this program aims to create a generation of innovative thinkers and problem-solvers capable of driving sustainable development.

4. The Concept of Entrepreneurship

The scientific literature on entrepreneurship has evolved significantly, prompting economist Peter Drucker to label the modern economy as an "entrepreneurial economy," where related concepts have become "buzzwords" in economic discussions⁴.

However, despite this growth, defining entrepreneurship precisely remains a major challenge⁵. The literature also exhibits certain gaps and divergent perspectives⁶. In this regard, several definitions of entrepreneurship have been proposed, among the most notable being:

Hani defines entrepreneurship as the "process of establishing new ventures or expanding existing enterprises. It also refers to the act of creating businesses or capitalizing on emerging opportunities through a pragmatic approach.", on the other hand, **Drucker** views entrepreneurship as the : « acumen for change, emphasizing that entrepreneurs are individuals who proactively identify opportunities and drive transformational shifts within their environments. »

Meanwhile, **Stevenson**, on the other hand, describes entrepreneurship as the : « process of creating new value,' stressing that it involves the capability to generate something valuable from scarce or even non-existent resources. »

Entrepreneurship reflects an individual's ability to take initiative and their desire to establish, organize, develop, and manage innovative and non-traditional economic projects, aiming for self-fulfillment and achieving rewarding financial returns⁷.

Costin agree that entrepreneurship involves transforming ideas into tangible actions, coupled with skills in creativity, innovation, risk management, and effective project planning. This achieves desired goals,

- ⁴ Drucker, P., (2006), *Innovation and Entrepreneurship*, NY: Harper Business.

- ⁵ Gubik, A., (2020). "Entrepreneurship and economic growth-conceptualization choices in the literature", *Észak-magyarországi Stratégiai Füzetek*, vol. 17(1), 45-56.

- ⁶ Edoho, F., (2016). "Entrepreneurship paradigm in the new millennium: A critique of public policy on entrepreneurship", *Journal of Entrepreneurship in Emerging Economies*, vol. 8 (2): 279-294.

- ⁷ Hadley, G. R. L., (2017). "Why Entrepreneurship Education is A Good Fit for Rural" *Nova Scotia Schools, Antistasis*, 8(1).

supports individuals and society, enhances workers' awareness of their roles, and enables them to exploit available opportunities⁸.

The Global Entrepreneurship Monitor defines it as "the effort exerted by an individual or a team to create a new venture with the aim of achieving self-employment or developing an existing organization" (The Global Entrepreneurship Index, 2019, p. 5).

In the context of our study, we define entrepreneurship as "the ability to respond to opportunities creatively, take the initiative to establish innovative projects, and manage them effectively to ensure their success and sustainability."

5. The importance of Entrepreneurship

Entrepreneurship is a crucial driver of national economic growth, as it fosters the creation of new economic resources, generates employment opportunities, and promotes sustainable economic and social development. Consequently, many countries prioritize supporting entrepreneurship and developing small and medium-sized enterprises (SMEs) as a cornerstone of economic progress. This is achieved through:

1. **Job Creation:** Entrepreneurs are key to generating new employment opportunities by launching innovative projects that stimulate economic growth and increase national income, thereby enhancing economic stability and community development.
2. **Innovation and Development:** Innovation is a fundamental pillar of successful startups, enabling the introduction of unique products and services that meet market demands and improve adaptability to economic changes. Continuous development further enhances product and service quality, boosting competitiveness in both local and global markets and supporting sustainable development. Additionally, SMEs play a vital role in reducing poverty and improving living standards and quality of life.

3 . Entrepreneurship Education

Entrepreneurship education is a cornerstone in fostering entrepreneurial behavior among individuals. Offering educational and training programs in schools and specialized centers is crucial to equipping students and trainees with essential entrepreneurial skills. The impact of such education is significantly greater when introduced early, as entrepreneurial skills are best cultivated during formative years.

Yaumakawa and al emphasize that entrepreneurial thinking should be instilled from an early age, with early childhood and primary education being the most suitable stages for developing these skills⁹.

- ⁸ Costin, Y.; O'Brien, M. P. and Slattery, D. M., (2018). "Using Simulation to Develop Entrepreneurial Skills and Mind-Set: An Exploratory Case Study". *International Journal of Teaching and Learning in Higher Education*, 30(1)

- ⁹ Yamakawa, Y., McKone-Sweet, K., Hunt, J., & Greenberg, D., (2016). "Expanding the Focus of Entrepreneurship Education: A Pedagogy for teaching the Entrepreneurial Method". *Journal of Business and Entrepreneurship*, 27(2).

By enabling children to learn, interact, and develop their skills, knowledge, and values, they enhance their ability to think creatively, analyze problems, and innovate solutions¹⁰. This age group is highly adaptable to shaping ideas and attitudes, making it an ideal time to instill entrepreneurial values and nurture a spirit of innovation.

3.1 The Concept of Entrepreneurship Education

There is no consensus among entrepreneurship scholars on a precise definition of entrepreneurship education, as opinions differ regarding the nature of suitable curricula. Researchers have identified two main approaches: one focusing on small business management and the other on the establishment and growth of startups¹¹. Despite their differences, both approaches emphasize the need for comprehensive educational programs that equip students with essential managerial and creative skills. The key distinction lies in their goals: small business management curricula aim to provide a foundation for managing existing businesses, while entrepreneurship curricula focus on creating and growing new ventures.

Defining Entrepreneurship Education:

Entrepreneurship education can be defined from various perspectives:

1. **Purposeful Educational Intervention:** *Gamede & Uleanya*¹² view it as an intervention aimed at developing students' characteristics, nurturing entrepreneurial skills, and enabling them to enter the business world.
2. **Developing Entrepreneurial Personality:** *Suryaman and al* describes it as an educational process that develops students' cognitive, skill-based, and value-oriented personalities, helping them transform creative ideas into entrepreneurial projects.
3. **Holistic Perspective on Knowledge and Skills:** *Brice*¹³ defines it as a system of policies, plans, and activities that equip learners with entrepreneurial knowledge and skills, enabling them to establish, manage, and develop ventures professionally while facing risks.
4. **Awareness and Entrepreneurship Promotion:** *Mwasalwiba* sees it as programs that raise entrepreneurial awareness, develop competencies for starting businesses, and support the sustainability of small enterprises.

- ¹⁰ Okeke, C. O., & David Gun, F. Y., (2016). "Assessment of Entrepreneurship Pedagogy on Entrepreneurship Knowledge and Entrepreneurial Human Capital Asset: A Conceptual Model". *Knowledge Management & E-Learning*, 8(2).

- ¹¹ Solomon, G.T.; Weaver, K.M. and Fernald, L.W., (2014). "A Historical Examination of small Business Management and Entrepreneurship Pedagogy". *Simulation and Gaming*, 25(3), 52-338.

- ¹² Gamede, B. T. & Uleanya, C., (2017). "The Role of Entrepreneurship Education in Secondary Schools at Further Education and Training Phase", *Academy of Entrepreneurship Journal*, 23(2), 1-12.

- ¹³ Brice, J., (2004). "The Role of Personality Dimensions on the Formation of Entrepreneurial Intentions", *USASBE Small Business Advancement National Center*, University of Central Arkansas, USA.

5. **UNESCO's Definition:** describes it as formal teaching methods aimed at informing, educating, and training individuals to contribute to economic and social development through entrepreneurial ventures.

From these definitions, it is evident that entrepreneurship education goes beyond teaching concepts; it empowers individuals to develop skills, innovate, and contribute to economic growth and sustainable development.

Entrepreneurship education is a process that empowers individuals to transform creative ideas into innovative projects, efficiently managing them to achieve economic and social goals. It focuses on developing personal and professional skills, fostering innovation, managing risks, and seizing opportunities. The key points presented can be summarized as follows:

1. **Transforming Ideas into Practice:** The ability to turn ideas into innovative projects while managing risks and resources for economic and social development¹⁴.
2. **Empowering Students for the Labor Market:** A process enabling students to apply their knowledge and skills, supported by schools, parents, and communities, to integrate into the labor market¹⁵.
3. **Fostering Innovation and Initiative:** Aims to instill a culture of innovation, build self-confidence, develop problem-solving skills, and encourage initiative among students¹⁶.

Based on the above, our study defines it as:

Entrepreneurship education consists of structured training programs delivered in pre-university institutions by qualified individuals. These programs aim to raise awareness of entrepreneurship, unlock students' potential, and equip them with the necessary skills to identify opportunities, establish projects, and manage them effectively, thereby transforming innovative ideas into tangible realities.

3.2 The Objectives of Entrepreneurship Education in Pre-University Institutions

Entrepreneurship education programs in pre-university institutions aim to empower students to transform their ideas into practical projects and effectively seize available opportunities. They also promote the optimal use of material and human resources in the labor market while fostering students' self-development¹⁷.

Moreover, these programs contribute to local community development, cultivate a culture of productive work, and encourage students

- ¹⁴Suryaman, A. &Karyono, H., (2017). "Leading Entrepreneurship Education-Based Primary Schools", *Advances in Social Science. Education and Humanities Research*,(128).

- ¹⁵ Gibb, A. (2018). *Entrepreneurship and Enterprise Education in Schools and Colleges: Insights from UK Practice*. *International Journal of Entrepreneurship Education*, (6).

- ¹⁶ Mwasalwiba, E. S. (2015). *Entrepreneurship Education: A Review of Its Objectives, Teaching Methods, and Impact Indicators*. *Education + Training*, 52(1).

¹⁷ Bacigalupo, M.; Kampylis, P.; Punie, Y. & Brande, V. G., (2016). *Entre Comp: The Entrepreneurship Competence Framework*. European Union, Luxembourg

to invest economic resources innovatively. They also enhance students' ability to envision clear future goals and set meaningful objectives for their personal and professional lives.

Additionally, entrepreneurship education helps students develop essential skills such as innovation, creativity, planning, risk management, decision-making, evaluation, and teamwork. These objectives underscore the importance of entrepreneurship education in nurturing students' scientific and practical thinking in business project management. It equips them with the knowledge and tools necessary to successfully launch and manage their own ventures (Aljohani, 2015, p. 18)¹⁸.

3.3 The Importance of Entrepreneurship Education in Pre-University Institutions

Extensive research has consistently highlighted the transformative impact of entrepreneurship education on both individual students and national economies. These findings have spurred educational systems worldwide to prioritize and expand efforts in this field. By fostering stronger collaboration between public and private sectors, and by embedding entrepreneurship into curricula and extracurricular activities, schools are uniquely positioned to cultivate a generation of innovative thinkers and problem-solvers. This, in turn, equips students with the skills and mindset needed to drive economic growth and adapt to an ever-changing global landscape.

The integration of entrepreneurship education into school systems is not merely an academic exercise; it is a strategic investment in the future. Schools serve as the foundational platform where young minds are nurtured to think creatively, take calculated risks, and embrace opportunities. Through this approach, students are prepared not only to navigate the complexities of the modern economy but also to contribute meaningfully to its evolution. Key contributions of entrepreneurship education include fostering innovation, enhancing employability, and empowering students to become active participants in economic and social development.

3.3.1. Enhancing Entrepreneurial Intentions and Career Path Choices

- Nas found that entrepreneurship education positively influences students' attitudes toward entrepreneurial careers, with graduates applying their knowledge in jobs and businesses¹⁹.
- Rodrigues highlighted that such education increases the inclination to start businesses, though personal factors and potential obstacles may influence decisions²⁰.

- ¹⁸ Aljohani, M., (2015). "Innovation and Entrepreneurship Integration in Education. OhioState Model », International Journal of Teaching and Education, 3(3), 1-20.

- ¹⁹ Nasr, K. B., & Boujelbene, Y., (2014). "Assessing the impact of entrepreneurship education". Procedia-Social and Behavioral Sciences, 109, 712-715.

- ²⁰ Rodrigues, R. G., Raposo, M., Ferreira, J., & Do Paco, A., (2010). "Entrepreneurship education and the propensity for business creation: testing a structural model". International Journal of Entrepreneurship and Small Business, 9(1), 58-73.

- Other studies (Kennedy et al confirmed that entrepreneurship education fosters a culture of self-employment by encouraging students to establish their own ventures²¹.

3.3.2. The Importance of Integrating Entrepreneurship into Curricula and Its Economic Impact

- Ayub emphasized that incorporating entrepreneurship into all educational stages, from kindergarten to university, prepares generations for innovation, project development, and national economic growth. Countries prioritizing this education have seen reduced unemployment rates and increased numbers of small and medium-sized enterprises.²²

3.3.3. Developing Entrepreneurial and Practical Skills

- Anderson in a 16-year longitudinal study, found that high school entrepreneurship education enhances students' skills and increases their desire to start new ventures²³.
- Clark demonstrated that such education in North Carolina schools improves financial planning, marketing, decision-making, and task organization skills, leading to better academic performance and attendance.²⁴

3.3.4. Developing Personal and Leadership Skills

- Tan & Cankaya showed that students in entrepreneurship training programs become more committed and develop stronger professional skills.²⁵
- Haara (2018) found that entrepreneurship projects in Norwegian high schools enhance creative thinking, problem-solving, and effective use of community resources.²⁶
- Udoewa (2018) highlighted that service-learning projects in the U.S. boost initiative, leadership skills, risk management, and informed decision-making in business environments.²⁷

3.3.5. Enhancing Self-Efficacy and Competitiveness in the Labor Market

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- ²¹ Kennedy, J., Drennan, J., Renfrow, P. and Watson, B., (2003) "Situational factors and entrepreneurial intentions", Paper for the Small Enterprise Association of Australia and New Zealand, 16th Annual Conference, Ballarat, 28 September–1 October.
- ²² Ayub, D. & Othman, N. (2013). Entrepreneurship Management Practices in Creating Effective Schools. *Asian Social Science*, 9(12).
- ²³ Anderson, M.; Hinz, B. and Matus, H. (2017). *The Paradigm Shifters: Entrepreneurial Learning in Schools*. Mitchell Institute, Melbourne
- ²⁴ Clark, K. A.; Rusher, D. E.; Voggt, A.P. & Test; D. W., (2017). "Developing A School-based Enterprise Toolkit". National Technical Assistance Center on Transition, North Carolina
- ²⁵ Tan, Ç. & Çankaya, İ. (2017)., "The Relationship between Vocational Proficiency and Entrepreneurship according to Girls" *Vocational High School Students' Perceptions, Advances in Social Science. Education and Humanities Research*, (74), PP. 31-38.
- ²⁶ Haara, F. O. (2018). Pedagogical Entrepreneurship in School Mathematics: An Approach for Students' Development of Mathematical Literacy. *International Journal for Mathematics Teaching and Learning*, 19(2), PP. 253–268.
- ²⁷ Udoewa, V. (2018). Redesign of A Service-learning Social Entrepreneurship Program for High School Students Part I: Design Research. *International Journal for Service learning in Engineering, Humanitarian Engineering and Social Entrepreneurship*, 13(2), PP. 79-92.

- Charmey & Liberap (2019) confirmed that entrepreneurship education in American schools enhances self-efficacy, leadership, innovation, technology use, and marketing skills, increasing students' ability to seize opportunities and succeed in the labor market.
- A recent review by Fahinde & Su 2022 highlighted the positive impact of entrepreneurship programs in developing countries on students' entrepreneurial intentions²⁸. Three program types were evaluated:
- Programs "**about**" entrepreneurship, providing theoretical knowledge.
- Programs "**for**" entrepreneurship, focusing on practical skill development.
- Programs "**through**" entrepreneurship, based on experiential learning.

All programs positively influenced students' entrepreneurial mindset and motivation to enter the business world.

From the above Entrepreneurship education is crucial for empowering youth, fostering creativity, and driving economic growth by encouraging startups and reducing unemployment. Integrating it into curricula prepares a generation of leaders to tackle labor market challenges and contribute to national development. It also cultivates innovative entrepreneurs, advancing a knowledge-based economy.²⁹

4. Proposed Entrepreneurship Education Program for Pre-University Education in Algeria

To ensure the success and effectiveness of a comprehensive entrepreneurship program for pre-university education in Algeria, several key elements must be considered. Below is a structured outline of these elements:

1. **Program Name:**
The program is proposed to be named "Raed" (Pioneer), symbolizing leadership and excellence, a term widely recognized in entrepreneurship.
2. **Implementation Location:**
Drawing from successful international experiences, the program should be implemented in university research centers through partnerships between the Ministry of Education and the Ministry of Higher Education. Specialized training centers adhering to specific standards should also be utilized to ensure a supportive environment for learning and practical application.
3. **Vision:**
The program aims to instill an entrepreneurial culture among pre-university

- ²⁸ Fahinde, C., & Su, Z. (2022). What is the Impact of Entrepreneurship Education Programs in Developing Countries? A Systematic Review and Research Agenda. *Journal of Entrepreneurship Education*, 25(2), PP. 1-20.

- ²⁹ Landström, M. H. (2014). "Pioneers in Entrepreneurial Research". (In): Corbetta, G.; Huse, M. and Ravasi, D. (Eds.). *Crossroads of Entrepreneurship*. Kluwer Academic Publishers, Boston/New York/Dordrecht..

students by creating a comprehensive educational framework that helps identify innovative business opportunities and fosters collaboration between public and private sectors. This will prepare entrepreneurs capable of launching successful economic, technological, and social projects.

4. **Mission:**

The "Raed" initiative seeks to integrate entrepreneurship into pre-university education by offering a national program designed to cultivate globally competitive entrepreneurs through high-quality education and training based on the latest practices and successful experiences in the field.

5. **Strategic Objectives:**

The program follows a clear strategy to achieve several goals, including:

- Enhancing student exchange to attract talented and creative individuals while applying global best practices in knowledge and technology marketing.
- Promoting integrity, transparency, and respect for intellectual property rights, alongside attracting national and international expertise in entrepreneurship.
- Providing an entrepreneurial environment by developing advanced infrastructure that supports applied learning and enables students and researchers to transform ideas into real projects.
- Strengthening collaboration between local and international educational institutions to benefit from successful experiences and share expertise.

6. **Core Values:**

The program is built on fundamental values, such as:

- **Quality and Transparency:** Commitment to high standards in all stages, from design to implementation and evaluation.
- **Creativity and Innovation:** Supporting creative thinking, evaluating entrepreneurial ideas, and fostering teamwork and effective communication.
- **Freedom to Innovate and Competitiveness:** Creating an environment that encourages students to develop competitive entrepreneurial projects.

7. **Teaching Staff:**

Instructors must possess high academic qualifications and practical experience. Coordination between academics and practitioners in entrepreneurship is essential to bridge theory and practice. Trainers should preferably hold professional certifications and employ interactive, student-centered teaching methods.

8. **Target Groups and Learning Outcomes:**

The program targets all individuals interested in entrepreneurship, prioritizing pre-university students. It also extends to those with entrepreneurial ideas, including retirees seeking to establish new ventures or develop existing ones.

9. Curriculum Design:

Curricula should be tailored to the needs of target groups, adopting a student-centered learning approach. A one-size-fits-all model may not be suitable for everyone. Clear learning outcomes will enhance the efficiency of entrepreneurial projects in the medium and long term.

The European project ASTEE³⁰ outlined core outcomes for entrepreneurship education, relevant to both beginners and advanced learners³¹. These outcomes are categorized into three main areas, forming a general framework for educational programs: entrepreneurial attitudes, skills, and knowledge. However, implementation details may vary due to Algeria's cultural and geographical diversity, making a uniform model unsuitable for all students. Below is a summary of the key outcomes:

1. Entrepreneurial Attitudes

(a) Self-confidence:

- **Beginner Level:** Building confidence in personal abilities and nurturing future aspirations.
- **Advanced Level:** Demonstrating confidence in the values and principles held by others.

(b) Sense of Initiative:

- **Beginner Level:** Seeking solutions to simple problems.
- **Advanced Level:** Proposing and implementing effective solutions to complex problems.

2. Entrepreneurial Skills

(a) Creativity Skill:

This skill involves thinking innovatively and originally, enabling students to generate new ideas, solve problems, foster innovation, and create opportunities.

- **Beginner Level:** Developing creative ideas and recognizing their value.
- **Advanced Level:** Crafting innovative solutions to problems and exploring opportunities in business and community settings.

(b) Planning Skill:

This skill involves organizing and sequencing tasks effectively to achieve goals by bridging the gap between current and target situations.

- **Beginner Level:** Learning basic planning principles and understanding smart resource management.
- **Advanced Level:** Setting clear goals, planning projects, and executing them under expert guidance.

(c) Financial Literacy Skill:

³⁰ Assessment Tools and Indicators for Entrepreneurship Education

- ³¹Moberg, K., Vestergaard, L., Fayolle, A., Redford, D., Cooney, T., Singer, S., & Filip, D. (2014). How to assess and evaluate the influence of entrepreneurship education: A report of the ASTEE project with a user guide to the tools.

This skill involves understanding and analyzing financial data, such as reading budgets and making informed financial decisions.

- **Beginner Level:** Evaluating product prices, understanding their value, and conducting financial comparisons.
- **Advanced Level:** Exploring financing options for projects and using financial and digital tools to address complex financial challenges.

(d) Resource Organization Skill:

This skill involves identifying, gathering, and effectively organizing available resources to maximize their use and capitalize on opportunities in the work environment.

- **Beginner Level:** Building a basic understanding of resources and their role in achieving goals.
- **Advanced Level:** Strategically utilizing resources to create added value and improve efficiency.

(e) Risk Management Skill:

This skill involves effectively addressing and managing uncertainty while implementing ideas and capitalizing on opportunities.

- **Beginner Level:** Building awareness of potential risks and preparing to take responsibility for the outcomes of others' actions.
- **Advanced Level:** Accurately analyzing risks, making informed decisions, and taking full accountability for actions and their results.

(f) Teamwork Skill:

This skill involves achieving goals effectively through collaboration and communication, while building strong professional relationships to foster a cooperative work environment.

- **Beginner Level:** Participating in a team and collaborating with others.
- **Advanced Level:** Taking on responsibilities, managing challenges flexibly, and negotiating solutions to potential problems.

3. Entrepreneurial Knowledge

(a) Opportunity Evaluation

- **Beginner Level:** Recognizing local products and services and differentiating between viable and non-viable business ideas.
- **Advanced Level:** Evaluating opportunities by comparing potential returns to associated costs.

(b) Role of Entrepreneurs in Society

- **Beginner Level:** Understanding the basic role and societal impact of entrepreneurs.
- **Advanced Level:** Highlighting how entrepreneurs support the economy and contribute to social development.

(c) Career Options in Entrepreneurship

- **Beginner Level:** Understanding the diverse motivations behind starting ventures, such as profit, community service, or personal growth.
- **Advanced Level:** Exploring career paths in entrepreneurship across commercial and social sectors.

5. Funding the Proposed Entrepreneurship Program for Pre-University Education in Algeria

The study proposes a multi-source funding strategy, treating the program as a national initiative requiring government backing. This includes budget allocations from the Ministry of Education and contributions from sectors like the Ministry of Communications to develop digital infrastructure. Funding also encompasses private sector donations, grants from national and international bodies, and support from the Ministries of Youth and Labor, business associations, banks, investment funds, and civil society organizations. International funding from entities like the European Union, UNESCO, the Economic and Social Council, and the UNDP can also be leveraged.

6-Evaluation Mechanisms for the "Work and Innovate" Entrepreneurship Program in Pre-University Education in Algeria

The proposed program evaluates student performance and entrepreneurial skill acquisition through tests, research, and real-world entrepreneurial challenges. Teachers track progress by documenting achievements in individual portfolios, considering individual differences and teamwork. Learning outcomes are assessed based on program objectives, focusing on developing entrepreneurial competencies, mastering modern management skills, and evaluating students' ability to launch new projects.

Conclusion :

The study firmly establishes that entrepreneurship education at the pre-university level serves as a cornerstone for fostering entrepreneurial success, significantly igniting students' interest in launching their own ventures. It identifies three primary models of entrepreneurship education prevalent in developing countries: education **"about"** entrepreneurship (theoretical knowledge), **"for"** entrepreneurship (skill development), and **"through"** entrepreneurship (experiential learning). Each model has been shown to positively influence students' orientation toward entrepreneurial pursuits, equipping them with the tools to navigate the complexities of starting and managing businesses.

Beyond theoretical knowledge, entrepreneurship education cultivates essential soft skills such as effective communication, receptiveness to feedback, initiative, and risk management. It also provides students with a solid understanding of economic principles, labor market dynamics, and production processes. The study reveals a strong positive correlation between students' mastery of entrepreneurial skills and their inclination to pursue entrepreneurial endeavors. Participants in such programs demonstrate heightened commitment and readiness to apply these principles in real-world contexts.

Furthermore, the study underscores the transformative impact of secondary-level entrepreneurship programs in nurturing leadership, creativity, and self-confidence. These attributes not only increase students' likelihood of successfully launching ventures but also enhance their ability to apply

entrepreneurial skills in diverse career paths. By fostering these competencies early on, such programs lay the groundwork for a generation of innovative and resilient individuals capable of driving economic and social progress.

To maximize the effectiveness of entrepreneurship education in Algeria, the study advocates for creating an inspiring school environment that taps into the immense potential of youth during their most formative years. It proposes a structured framework with clearly defined learning outcomes at both beginner and advanced levels, organized around three core pillars: **entrepreneurial attitudes, skills, and knowledge**. This approach ensures a holistic development of students' entrepreneurial capabilities.

The study culminates in a comprehensive proposal for a pre-university entrepreneurship program tailored to Algeria's unique context. The program, named **"Raed" (Pioneer)**, outlines its vision, mission, strategic objectives, and core values, all designed to align with local educational and economic needs. Additionally, the study emphasizes the importance of sustainable funding mechanisms and robust evaluation methods to ensure the program's long-term success. It stresses the need for curricula that are adaptable to local realities, as overcoming barriers to entrepreneurship is critical for empowering students to transform their ideas into viable businesses.

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