

Rethinking Entrepreneurship Education: Skills For The 21st-Century Innovators

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The 21st-century has ushered in a complex entrepreneurial ecosystem which is characterized by digital transformation, rapid technological advancement and evolving societal challenges. To meet up with the demands of our rapidly changing world, there is a need to shift from the traditional entrepreneurship education to equipping innovators with diverse skill sets required by today's entrepreneurs. Hence, the aim of this study is to explore the essential skills that entrepreneurship education should accentuate in the 21st-century. This study is qualitative in nature and employed the use of semi-structured interviews to gather information from six entrepreneurship educators from diverse academic backgrounds. Thematic analysis was conducted and core competencies such as critical thinking, creativity and design thinking, digital literacy, resilience and adaptability, collaboration and communication, as well as ethical and social responsibility were identified as fundamental skills required to prepare future innovators. The findings of the study reveal that educators perceive traditional entrepreneurship curricula as overly focused on business plans and theoretical knowledge, it always neglects practical skill development crucial for navigating contemporary challenges. The study advocates for a paradigm shift towards experiential learning, interdisciplinary collaboration, and comprehensive curriculum reform that entrenches these competencies in teaching and assessment frameworks, to foster effective entrepreneurial mindsets, skills and capabilities.

Key words: Education, Entrepreneurship, Innovator, Technology, Skills, 21st-Century

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Introduction

Entrepreneurship education as a program has undergone significant transformation over the past few years, evolving from a peripheral elective within business schools to a critical discipline which is aimed at fostering innovation and economic development in a country. In an increasingly complex and volatile global landscape that is characterized by rapid technological change, climate crises, globalization, and shifting labour markets, the competencies required by entrepreneurs have expanded beyond classical business acumen (Wakhudin et al., 2024). The 21st-century entrepreneur must not only possess the foundational knowledge of business management, finance, marketing, and strategy but must also be able to demonstrate agility, ethical consciousness, digital fluency, and collaborative prowess. Despite this recognition, many entrepreneurship education programs remain entrenched in traditional pedagogical models prioritizing business plan development, lectures, and theoretical frameworks that insufficiently prepare students to manage uncertainty and complexity. According to Zaini et al. (2023), the education that is provided to students does not properly prepare them for the world of work, and the real-life situations. This issue has received a long-standing debate on whether the entrepreneurship courses offered by the universities can promote graduate work readiness in this present economy. The study seeks to interrogate this status quo by exploring the perspectives of entrepreneurship educators themselves on the critical skills needed for today's innovators. Drawing from these insights, it aims to provide actionable recommendations to guide curriculum designers and educators toward a more holistic, skills-focused, and future-ready entrepreneurship education.

1. Literature Review

2.1 Entrepreneurship Education and Its Evolution

Entrepreneurship education was introduced at the subject level in the late 1970s and early 1980s as a result of the increased interest in entrepreneurship and small business (Miço and Cungu, 2023). According to Rae (2006), Entrepreneurship education has historically oscillated between two paradigms: the "about" entrepreneurship approach, which imparts knowledge about entrepreneurial processes and contexts, and the "for" or "through" entrepreneurship

approach, which emphasizes experiential learning and skill development. The initiatives used in the early entrepreneurship education were often lecture-heavy, with a predominant focus on business planning, financial modelling, and market analysis. These approaches were criticized by Kuratko (2005), and researchers for their overemphasis on theoretical content and underemphasis on the experiential and behavioural facets of entrepreneurship. More recent scholars advocate for a learner-centred, practice-oriented pedagogy where students actively engage in entrepreneurial activities, such as creating startups, participating in incubators, or solving real-world problems (Neck and Greene, 2011). This shift reflects broader trends in higher education that favour active learning, interdisciplinarity, and the cultivation of transferable skills.

Entrepreneurship is defined as an encompassing entrepreneurial business activity carried out by an entrepreneur towards achieving his livelihood and sustainability (Ezennia and Mutambara, 2021). According to Almahry, Sarea and Hamdan (2018), entrepreneurship education is defined as the process of passing the necessary skills and concepts to individuals to identify new business opportunities and to reach high level of self-confidence to benefit from such opportunities. Research on entrepreneurship education emphasizes on the critical need to develop comprehensive skills for 21st-century innovators. Entrepreneurship education encompasses three key skill-categories: technical, business management, and personal entrepreneurial skills, which are all essential for daily business operations and overcoming challenges (Almahry et al., 2018). Literature reviews spanning multiple countries reveal that effective entrepreneurship education requires innovative curriculum design which incorporates industrial visits, management games, and stakeholder involvement, with action-learning and experiential-learning proving most effective (Bhatt & Bhatt, 2016). The Science, Technology and Society (STS) framework by Fan and Jamil (2025) offers a promising approach to bridge theory and practice through interdisciplinary, action-oriented, and ethical pedagogies that prepare learners for complex innovation ecosystems. However, Wakhudin et al. (2024) asserts that contemporary entrepreneurship-based education successfully enhances students' abilities to identify opportunities, solve problems creatively, and adapt to change, while contributing significantly to innovation and economic growth when integrated into curricula.

2.2 Twenty-first Century Skills in Entrepreneurship Education

The 21st-century innovators need more than business plan competence, they need a set of competencies such as creative and innovation skills, critical thinking, problem solving skills, ethical awareness, ability to navigate uncertainty, collaboration, and continuous learning. In addition, a 21st-century innovator should have personal entrepreneurial skills such as leadership, risk tolerance, persistence, initiative, technical skills, business management skills and resilience (Almahry et al., 2018). Table 1 below shows some of the skills required for the 21st-century innovator.

Table 2.1: 21st-Century Skills

Skills	Description
Creative and Innovative Thinking	It has been established that Entrepreneurship Education helps students identify opportunities, solve problems creatively and adapt to change (Wakhudin et al., 2024). Creativity and innovative thinking skills are essential assets to drive competitive advantage, both in the business world and professional careers. Wakhudin et al. (2024) highlights that the ability to create new solutions, unique products and engaging experiences determines success in an idea-driven economy. However, creativity is not only limited to the creation of new products, but also in finding new ways to bring value to consumers, improve services and simplify work processes.
Problem Solving and Opportunity Recognition	Researchers claim that real-world problem solving is critical for a 21 st -century innovator (Fan and Jamil, 2025). They require not just technical or business knowledge, but a mindset of curiosity, empathy, experimentation, and the ability to connect ideas across domains. According to Wakhudin et al. (2024), students that are exposed to real-world business scenarios are better at developing and pitching innovative solutions as well as build confidence in navigating complexity.
Adaptability and Change Management	In today's fast-evolving world, which is marked by technological disruption, globalization, environmental crises, and shifting consumer behaviours, adaptability is a core survival skill for entrepreneurs and innovators to remain relevant in a changing market. Hendrik et al. (2024) posit that adaptability involves the ability of an entrepreneur to change business strategies, improve products, or adopt new technologies.
Self-Efficacy	Entrepreneurial self-efficacy refers to an individual's belief in his/her capability to perform tasks and roles for entrepreneurial positive outcomes (Van Ewijk, 2025). However, Miço and Cungu (2023) posit that Entrepreneurship education allows students to develop different aspects of entrepreneurial self-efficacy, which is highly relevant for key aspects of entrepreneurship, such as risk-taking, creativity, leadership, proactivity,

Ghafar (2020) highlights that entrepreneurship programs worldwide are beginning to integrate these skills into their curricula, often employing pedagogical strategies like project-based learning, mentorship, simulations, and internships to develop both the cognitive and affective domains of entrepreneurial competence. Moreover, an emergent trend in Entrepreneurship education literature stresses the integration of ethical considerations and social responsibility, reflecting a growing awareness of entrepreneurship's role in addressing sustainability, social justice, and inclusive growth (York and Venkataraman, 2010).

2.3 Challenges and Barriers

There are multiple challenges hindering entrepreneurship skills development for 21st-century innovators. Individual-level barriers include lack of sustained motivation, patience in problem-solving, and inability to utilize subconscious creativity (Sulochana, 2021). Skills and traits deficiencies significantly impede innovative entrepreneurship, alongside challenges related to finance, human resources, operational capabilities, and marketing (Ketchiwouand Ngulube, 2025). The COVID-19 pandemic intensified these challenges, forcing entrepreneurs to adopt innovative approaches while competing in an increasingly crowded marketplace (Ketchiwouand Ngulube, 2025). However, entrepreneurship education shows promise in addressing these challenges through convergence with 21st-century skills development. Teaching approaches that emphasize experiential learning and industry interaction help develop critical competencies including social relationships, leadership, creativity, and critical thinking, which nurture entrepreneurial intentions (Ghafar, 2020). While detailed industry knowledge may exceed educational scope, organic industry exposure through interactive experiences proves essential for developing entrepreneurial capabilities (Ghafar, 2020).

Miço and Cungu (2023) identified teacher's competence as a challenge because many teachers lack training, confidence, or sufficient experience in entrepreneurship education, especially teachers that have no business experience. Wakhudin et al. (2024) reiterated that without a deep understanding of entrepreneurial principle, teachers may find it difficult to engage with students while delivering the content. Therefore, it is crucial for teachers to undergo a comprehensive training programs to boost their confidence and able to deliver the necessary knowledge to students. Resource constraints is another major barrier as most schools, especially those in remote or disadvantaged areas, do not have adequate facilities to support interactive and practical learning (Hardie et al., 2023). Additionally, real-world problem-based learning, simulation, experiential work, mentoring, and so on require resources for implementation.

Another barrier is the rigidity in the curriculum as most current curriculum used does not meet the requirements of entrepreneurship education, neither do they allow for flexibility towards the entrepreneurship education style pedagogy (Miço and Cungu, 2023). Resistance to curriculum change, according to Ahmad et al. (2023) is also a significant challenge in implementing entrepreneurship education as many schools tend to maintain an established curriculum, and integrating entrepreneurship into the existing curriculum is often perceived as difficult and risky (Wakhudin et al., 2024). Hence, there is a need for collaboration between the government, educational institutions and the private sector to ensure that this approach can be effectively and thoroughly implemented across different levels of education.

2.4 Gaps and Limitations in Current Entrepreneurship education Practices

Despite these positive trends, the literature documents persistent gaps between curricular intentions and actual pedagogical practices. Several Entrepreneurship Education (EE) programs, while nominally embracing 21st-century skills, continue to rely heavily on traditional lectures, case studies, and business plan competitions that prioritize correctness over creativity or risk-taking (Morris et al., 2013). Further, assessment methods often inadequately capture competencies such as resilience, digital fluency, and ethical reasoning, limiting educators' ability to measure students' growth in these areas.

The digital transformation accelerated by the COVID-19 pandemic has further exposed deficits in Entrepreneurship Education, particularly in digital literacy and online collaboration skills (Adarkwah, 2021). As entrepreneurial ventures increasingly leverage artificial intelligence, data analytics, and digital platforms, the ability to navigate and harness technology is indispensable yet often underdeveloped in Entrepreneurship Education programs. Given this context, the current study focuses on the perspectives of entrepreneurship educators, aiming to identify the key skills they deem vital for 21st-century innovators and to explore how Entrepreneurship Education can better support their development.

2. Methodology

To gain in-depth insight into educators' perspectives on the skills required for innovators in this 21st-century, a qualitative research methodology was adopted which involves the use of semi-structured interviews. According to Creswell and Poth (2018), qualitative methods are well-suited for exploring complex phenomena like pedagogical beliefs and educational experiences, allowing for rich data collection. The target population of this study were entrepreneurship educators who are actively engaged with entrepreneurship education. Six entrepreneurship educators were purposively sampled to represent a range of roles such as lecturers, course designers, program coordinators and institutional contexts within higher education. All participants were selected based on a minimum of two years' experience in teaching or designing entrepreneurship curricula, so as to ensure informed and reflective contributions. The data collected was analysed using thematic analysis, as outlined by Braun and Clarke (2006). The initial codes

were generated from the transcripts, after which it was clustered into preliminary themes, and then iteratively refined through peer debriefing and member checking to ensure validity and reliability.

3. Findings

This section presents the emerging themes from the analysis of the interviews with the entrepreneurship educators. The analysis revealed six core skills that educators unanimously identified as vital for preparing 21st-century innovators. Each theme is elaborated below with representative educator perspectives, identified gaps and recommended pedagogical approaches.

- **Critical Thinking and Problem Solving**

Critical thinking allows individuals to analyze information objectively, identify and evaluate arguments, and make informed decisions. Problem-solving provides structured and systematic ways to address problems (Klune, 2023). All participants emphasized on the importance of critical thinking as an essential skill required by an innovator to create more opportunities and maintain their competitive edge in any given situation. One of the educators explained thus:

“Our students need to move beyond textbook problems to messy, real-world challenges where there are no clear right answers. Critical thinking is the foundation of entrepreneurial mindset”.

It was also revealed that the current curricula frequently rely on predetermined case studies or simplified business plan exercises that do not adequately simulate uncertainty and as a result limits students' exposure to the ambiguity and iterative problem-solving characteristic of real innovator.

- **Creativity and Design Thinking**

Creativity and innovation are fundamental to creating future that is more inclusive, sustainable and balanced (Wakhuden et al., 2024). In other words, creativity fuels innovative product development and strategic differentiation, while design thinking provides a structured and user-centric framework to transform these creative ideas into tangible, market-ready solutions. An educator highlighted that:

“Design thinking is about understanding users deeply and prototyping solutions quickly. It fosters a mindset of continuous iteration and learning”.

Creativity and design thinking skills enables an innovator to deeply understand and build creative solutions to their customer needs, generate diverse ideas, rapidly test solutions through prototyping, and iteratively improve their offerings to achieve success in dynamic markets. Creativity was highlighted as a crucial skill that enables entrepreneurs to generate novel ideas and approaches. Several educators, including a lecturer indicated that they make use of design thinking workshops to encourage empathy-driven innovation. It can be stated that creativity often remains siloed within isolated modules or extracurricular activities rather than being woven into the entire entrepreneurship curriculum.

- **Digital Literacy**

With the recent digitalization, digital entrepreneurship is a critical driver of innovation, economic growth, and resilience (Shatila et al., 2025). According to Skare et al. (2023), digital literacy enables entrepreneurs to acclimatise to market changes and navigate complex digital landscapes, as well as leveraging technology to offer innovative solutions and leverage competitive advantage. The COVID-19 pandemic made innovators realise that digital literacy is a non-negotiable skill for entrepreneurs especially in this 21st-century, where with digital tools, data analysis, AI, and adaptive technologies are being utilized effectively. A program coordinator, noted thus:

“Our students often lack hands-on experience with emerging tech. We need to integrate digital competencies systematically”.

It has been established that integrating digital technologies into business practices has fundamentally transformed entrepreneurs' operations, thereby enabling them to reach new markets, improve efficiencies, and develop innovative products and services (Yin et al., 2023; Shatila et al., 2025; Silva et al., 2025). It is therefore crucial that practical exposure to digital tools and platforms should be integrated into the curriculum. Zaini et al. (2023) concurred that entrepreneurship education is crucial and should incorporate more fundamental hands-on digital literacy within the syllabus so that students can develop better skills, knowledge, creativity, and innovation in their employment.

- **Resilience and Adaptability**

Resilience is the capacity to withstand and recover from any setbacks. The entrepreneurial journey is laced with ups and downs, successes, and failures, therefore it is important that innovators build resilience, learn from their mistakes, and be able to bounce back stronger (Chandelkar, 2024). With recent technological advancements, business environment is constantly evolving and requires an innovator to be agile and able to adapt, adjust their business strategies in response to imminent challenges. In that case, an educator responded thus:

“Failure is inevitable in entrepreneurship. We must teach students to embrace it, learn, and adapt”.

Resilience and adaptability are intertwined traits that are crucial for sustainable entrepreneurship. These enable entrepreneurs to learn from failures, maintain long-term vision, and transform obstacles into opportunities, while ultimately ensuring business sustainability in a dynamic environment. A lot of students fear failure due to punitive assessments and a culture of perfectionism. Developing an entrepreneurial mindset requires commitment to continuous learning and personal growth.

- **Collaboration and Communication**

In this 21st-century, strong communication and effective collaboration are foundational skills required for business success. Through these skills, innovators can be able to share vision, solve problems efficiently, have stronger

relationships with clients and investors, as well as develop better teamwork dynamics and networking. Krawczyk-Brylka et al. (2020) emphasized that networking, self-awareness and teamwork are skills that enhance graduates' employability. Effective communication skill is vital for pitching ideas, negotiating and leadership. In synthesizing entrepreneurship education with 21st-century skills, an educator is of the opinion that:

"We must give students tasks where they work in teams and thereafter present their work. This will enable them to communicate with each other and influence collaborative networks".

This further strengthens the view that effective communication and collaboration enable innovators to unlock and liberate their mindset, while fostering a more creative and collaborative process to deal with dynamic issues (Ghafar, 2020). Entrepreneurship has been an inclusive and evolving activity; therefore, innovators should not work in isolation. Innovativeness must cut across disciplines, cultures and industries to transform ideas to reality. To promote communication and collaboration skills in entrepreneurship education, institutions should implement strategies that integrate experiential learning, interdisciplinary collaboration, and real-world engagement, as well as team-based learning.

• **Ethical and Social Responsibility**

Ethical and social responsibility refers to the operation of business with a strong moral compass, with the aim of balancing profit with positive societal impact and this can be achieved by considering the stakeholders like employees, customers, and the community. Venkatesh (2024) stated that the key aspects of ethical and social responsibility include adhering to laws, promoting fair practices, ensuring fair treatment of employees, engaging in community philanthropy, and maintaining transparency to build trust and strong reputation, ultimately contributing to both long-term business success and the greater good. Hence, an educator commented that:

"Entrepreneurship isn't just about profit; it's about impact. We need to prepare students to think about the ethical implications of their ventures".

This shows that educators increasingly recognize the entrepreneur's role in addressing societal challenges. In most institutions of higher learning, ethics and social responsibility are frequently relegated to electives or 'add-on' modules, it would be better if they are being integrated into core curricula. It should be noted that a successful entrepreneur should understand the principles and significance of business ethics as well as keep their businesses strictly disciplined.

4. Discussion

This study explored the perspectives of entrepreneurship educators towards the critical skills needed for today's innovators. The entrepreneurial education system is responsible for providing students with experiential learning experiences that will enable the students to actively participate in and develop the 21st-century skills. The findings of this study identified six core skills that are essential for today's innovator, these skills are critical thinking, creativity and design thinking, digital literacy, resilience and adaptability, collaboration and communication, as well as ethical and social responsibility. They constitute a holistic skill set that are essential for 21st-century effective entrepreneurship. The study's findings align closely with existing literature on entrepreneurship education and 21st-century skills (Ghafar, 2020; Mohamed and Sheikh Ali, 2021).

However, the study contributes to a unique insight by emphasizing on educators' live experiences and highlighting structural curriculum challenges. The traditional lecture-based and theory-heavy models of teaching persist, which undermines the development of practical and behavioural skills. This echoes the findings from Ndofirepi and Rambe (2018) where students perceive entrepreneurship education as being overly academic and disconnected from the real-world entrepreneurship to understand the risks and complexities involved in running a business.

Moreover, the study draws attention to the insufficient integration of ethical and social responsibility within entrepreneurship education, a gap that may hinder the preparation for the complex and interconnected problems entrepreneurs face today. Incorporating these dimensions more deeply into the curriculum aligns with global trends emphasizing sustainability and social impact (York and Venkataraman, 2010). The educators' emphasis on pedagogical innovations such as experiential learning, interdisciplinary collaboration, and reflective practice suggests a clear pathway to reform. Nevertheless, challenges including institutional inertia, resource constraints, and faculty training remain barriers to widespread adoption.

5. Conclusion

This study demonstrates how entrepreneurship educators identified a core set of skills essential for 21st-century innovators: critical thinking and problem solving, creativity and design thinking, digital literacy, resilience and adaptability, collaboration and communication, as well as ethical and social responsibility. While these competencies are recognized in theory, their development is often hindered by traditional curricula overly focused on business plans and theoretical knowledge. A shift toward experiential, interdisciplinary, and ethically grounded pedagogy is imperative to prepare entrepreneurs to be capable of thriving in future complex and uncertain environments.

6. Recommendations

Sequel to the exploration of the essential skills that entrepreneurship education should accentuate in the 21st-century, the study recommends that:

- The Curriculum should be reformed by integrating real-world case studies, problem-based learning (PBL), and open-ended projects that require iterative experimentation and reflection while developing critical reasoning.

- Cross-departmental collaborations for group projects should be promoted to foster diverse perspectives as well as enhance creativity and problem-solving skills. Additionally, entrepreneurship hubs should be built in partnerships with innovation labs, to support critical thinking, student-led startups and the use of digital learning tools.
- Ethics and social responsibility module should be integrated into all entrepreneurship modules, using societal challenges as project themes, and fostering critical discussions around sustainability and inclusion.
- Emphasis should be placed on experiential learning methods such as live projects, internships, business simulations, and design thinking workshops.

7. Limitations and Future Research

This study's scope was limited to six educators, which constrains generalizability. Future research should incorporate broader stakeholder perspectives, including students, alumni, and industry practitioners. Longitudinal studies tracking the persistence of these skills in entrepreneurial outcomes would provide further insight. Comparative analyses across countries, institutional types, and cultural contexts could identify best practices and contextual variations in entrepreneurship education.

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