

# EMPOWERING ENTREPRENEURIAL SELF-EFFICACY: SHAPING THE UAE'S DIVERSIFIED ECONOMIC FUTURE

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## ABSTRACT

*This study investigates the integration of Entrepreneurship Education (EE) within the United Arab Emirates (UAE) Technical and Vocational Education and Training (TVET) programs, assessing its impact on students' entrepreneurial self-efficacy (ESE) and preparedness for the modern job market. Using a mixed-methods approach, the research involved surveys with 500 TVET students and five focus groups with educators, administrators, and industry representatives. The findings reveal high student confidence in identifying business opportunities (82%) and developing business plans (78%), though gaps were noted in financial management (65% confidence) and digital marketing skills (70%). Recommendations include strengthening industry partnerships, expanding hands-on training, and updating curricula to include emerging fields like digital entrepreneurship. These insights aim to better align TVET programs with the UAE's transition to a knowledge-based economy, equipping students with the skills essential for entrepreneurial success.*

**Keywords:** Entrepreneurship Education, TVET, Entrepreneurial Skills, Entrepreneurial Self-Efficacy, Curriculum Development.

## INTRODUCTION

The UAE has significantly advanced its TVET sector, understanding its importance in workforce development. Establishing the Higher Colleges of Technology in the 1980s was a critical step, emphasizing practical, career-oriented education. As the UAE transitions to a knowledge-based economy, integrating EE into TVET programs is becoming more critical, equipping students with technical and entrepreneurial skills to drive innovation and economic growth.

EE is now part of various TVET programs in the UAE, focusing on nurturing entrepreneurial abilities. While some students excel in business planning and identifying opportunities, gaps in practical skills such as financial management and digital marketing still need to be found. These findings point to mixed results in the current EE curriculum, highlighting improvement areas. Challenges persist, such as the need for more entrepreneurial skills among Emirati youth, primarily as the UAE aims to diversify its economy. Current literature emphasizes the need to align TVET with market demands to enhance its effectiveness. However, a comprehensive understanding of EE's integration into UAE TVET programs and its impact on students' entrepreneurial self-confidence is still lacking. This study investigates the extent of EE integration in UAE TVET programs and how improving students' ESE can better prepare them for the evolving labor market. The research aims to align TVET curricula with the UAE's economic goals, supporting broader economic diversification.

## REVIEW OF LITERATURE

### TVET in UAE's Economic Landscape`

The UAE government has prioritized education, focusing on TVET, since the 1980s when the Higher Colleges of Technology were established (Owais & Alabidi, 2020). TVET emphasizes practical education in technology, sciences, and career-related skills, with recent shifts towards aligning it more closely with labor market demands to boost socio-economic development (Authors, 2023). According to Abdulla (2020), TVET prepares students with both general education and practical skills. The government has invested in developing a skilled workforce, recognizing TVET's role in providing essential work-based learning (Authors, 2023). Today, over 800 training centers offer skill-based courses, contributing to a well-prepared workforce. The National Strategy for Higher Education 2030 highlights the importance of technical and practical skills in supporting the shift to a knowledge-based economy. TVET has expanded significantly, with initiatives like the Emirates Skills National Competition promoting careers in emerging technologies. Ongoing government efforts are enhancing TVET to meet the needs of tourism, construction, and real estate sectors. Accredited TVET programs now cover foreign languages, computer skills, engineering, and banking and finance, ensuring Emiratis are equipped for diverse career opportunities.

### UAE's Shift towards a Knowledge-Based Economy

The UAE is transitioning to a knowledge-based economy, moving beyond traditional industries and embracing the Fourth Industrial Revolution. Central to this shift is entrepreneurship, which fosters innovation and economic growth (Hamdan, 2019). Integrating EE into TVET programs aims to prepare Emirati youth as innovators and entrepreneurs.

Entrepreneurship drives job creation and economic growth, vital for organizational success (Duncan, 2020). It also promotes equity and civic engagement through job opportunities (Gamede & Uleanya, 2019). Entrepreneurs are considered creative risk-takers essential for transitioning to knowledge-based economies (Abdulla, 2020). Globally, nations leverage knowledge and innovation to build knowledge-based economies, requiring skilled populations and adaptable innovation systems (Barkhordari et al., 2019). The UAE has encouraged entrepreneurship to diversify away from oil (Hamdan, 2019). However, many Emirati youth prefer public sector jobs, contributing to a 25% unemployment rate. The UAE National Agenda 2021 promotes entrepreneurial skills to address this, though efforts often focus on qualifications rather than shifting attitudes towards private sector work (Al Saiqal et al., 2019).

### Entrepreneurship within TVET

The European Union emphasizes the importance of entrepreneurship in developing lifelong learning and transforming ideas into actions (Forcher-Mayr & Mahlke, 2020). However, TVET is often perceived negatively in the Middle East and is associated with lower academic performance (Authors, 2023). Current TVET programs usually focus on skills demanded by the present industry, creating a gap between vocational preparation and future employment needs. Automation and globalization challenge the work environment, necessitating graduates to acquire entrepreneurial skills to develop their businesses (Al Kaabi, 2022).

In this context, EE and TVET can produce skilled human capital with innovative and entrepreneurial attitudes (Abdulla, 2020). Integrating EE into TVET prepares students for the

labor market by equipping them with job-finding and job-creating skills. EE can enhance employability by training students in enterprising skills valuable in the workplace, helping to reduce unemployment and poverty (Gamede & Uleanya, 2019; Mack et al., 2019). Entrepreneurial skills are crucial for job market success and personal development, which can be acquired through specific training (Duncan, 2020). Hamdan (2019) found that GDP growth in non-oil sectors in the UAE corresponded with increases in entrepreneurship, suggesting that integrating entrepreneurship into education is vital for economic development.

## **Current Integration of Entrepreneurship in TVET**

### **Historical Perspective of EE in TVET**

In 2003, UNESCO highlighted entrepreneurship's role in combating unemployment and poverty, identifying TVET as a critical platform for integrating EE (Gamede & Uleanya, 2019). EE combines academic theory with business practice, focusing on experiential learning (Ratten & Usmanij, 2021). However, more research is needed on EE content and teaching methods. The interest in entrepreneurship skills is growing globally, with EE evolving to support societal development and sustainable practices. EE empowers youth to develop ideas that create financial and non-financial value. The European Union recognizes EE as a driver of economic growth and job creation, essential for economic sustainability (Mack et al., 2019).

In Africa, EE and TVET are crucial for developing skills needed for formal employment and reducing youth unemployment (Forcher-Mayr & Mahlknecht, 2020). In Kenya, TVET institutions incorporate EE to enhance employability and entrepreneurial capability (Duncan, 2020). Challenges include establishing resource centers to support new businesses. In South Africa, EE should focus on developing critical thinking and entrepreneurial skills (Gamede & Uleanya, 2019). EE aims to prepare graduates for self-employment, economic growth, and resilience, fostering leadership, negotiation, and time management skills (Abdullah, 2020).

Ratten and Usmanij (2021) note that EE aims to shift students' perceptions, encouraging entrepreneurial identities. Vocational education enhances employability, while EE equips students with opportunity recognition, sustainability, and self-reliance skills (Ekele, 2023). In China, EE, initiated in 2000, drives sustainability and growth (Xu et al., 2023). In the UAE, EE is becoming mandatory across various disciplines, fostering innovation, creativity, and problem-solving (Al Kaabi, 2022).

### **Current Pedagogical Approaches and Program Structures**

EE fosters adaptability, creativity, and self-efficacy through various pedagogical methods (Festeu & Turlakova, 2020). Traditional methods include lectures and seminars, often assessed through essays or case studies. More active approaches, like business simulations, enable students to apply knowledge in real-world scenarios, covering research, opportunity recognition, planning, and decision-making.

Interactive methods such as workshops, games, competitions, and practical training promote collaboration and problem-solving. These are often combined with study visits, coaching, and mentoring, which guide students in developing new ventures. Advanced EE

programs may involve setting up and running real businesses, though this can face institutional challenges. Key EE topics include market research, innovation, opportunity recognition, risk management, and leadership (Festeu & Turlakova, 2020).

However, challenges persist, especially in regions like South Africa, where the integration of EE in TVET is hindered by a lack of entrepreneurial instructors, insufficient resources, and inadequate funding (Gamede & Uleanya, 2019). Effective EE requires creating enterprising environments and revamping learning approaches to foster entrepreneurial attitudes (Barkhordari et al., 2019). For example, EE needs to be better integrated into higher education and TVET in Nigeria, resulting in low commercialization rates despite high technical skills (Ekele, 2023). Similar issues are observed in Indonesia, where traditional lecture-based teaching limits EE effectiveness (Hutasuhut et al., 2023).

### **Impact of EE on Student Outcomes**

Self-efficacy, or the belief in one's ability to succeed, is crucial in entrepreneurship, as higher ESE boosts persistence in entrepreneurial activities (Xu et al., 2023). ESE includes identifying business ideas, creating marketing and financial plans, and managing finances. Entrepreneurial activities often stem from entrepreneurial intention (EI), which EE can influence. Practical courses generally enhance self-efficacy and intentions more than theoretical ones, providing an environment that encourages entrepreneurial behavior. Resources like technical support and funding further promote EI (Xu et al., 2023).

Integrating EE in UAE TVET programs can significantly improve student outcomes by boosting self-efficacy. Research shows that self-efficacy is vital in driving entrepreneurial intentions. For example, a study on cyber entrepreneurial self-efficacy (CESE) in the UAE found it positively influences cyber entrepreneurial intentions (CEIs), emphasizing the importance of self-efficacy in fostering entrepreneurial intentions (Khalil, 2024). Additionally, the quality of OJT in Oman affects TVET students' satisfaction and work competence, highlighting the value of practical training in enhancing employability (Turrohmah & Wahyuni, 2023). Similarly, competency-based training in TVET institutions positively correlates with skill acquisition and self-employability, with learner satisfaction moderating (Asojan & Omar, 2024).

Research found that academic self-efficacy significantly impacts academic commitment and learning outcomes, suggesting that self-efficacy in entrepreneurship could similarly mediate the effects of EE on TVET student outcomes. Furthermore, while Emirati female TVET students report positive experiences, they face academic and cultural challenges, indicating a need for targeted support. Integrating EE with a focus on self-efficacy could help address these challenges, creating a more inclusive and effective educational environment (Abuzaid, 2023; Salam & Pardiman, 2023).

### **Impact of EE on TVET Students' Self-Efficacy**

Research on EE outcomes highlights its influence on attitudes, knowledge, skills, business performance, socio-economic impact, and entrepreneurial intention. EE should prioritize open, community-connected learning and lifelong education. Studies show varied effects of EE on students' entrepreneurial skills and intentions. For instance, Jain and Chaudhary (2017) found that while EE improved students' skills, it negatively affected their entrepreneurial intentions. Bandera et al. (2018) reported skill enhancement through EE

integration in ICT programs, underscoring the role of risk-taking and opportunity recognition in entrepreneurship.

Ismail et al. (2019) noted that an entrepreneurial program in Malaysian Technical Universities improved students' perceived behavioral control and attitudes toward entrepreneurial skills, particularly in communication and IT skills, which are vital in the digital age. However, it had little impact on entrepreneurial intentions. Similarly, Al Saiqal et al. (2019) found no significant effect of EE on entrepreneurial intentions in UAE higher education, pointing to curriculum quality as a factor.

Roy and Das (2020) found that entrepreneurial knowledge correlates directly with EI in Indian engineering students, with ESE mediating the relationship. They concluded that successful entrepreneurship requires knowledge, intention, and self-efficacy. Xu et al. (2023) observed that EE positively influences EI in China, with its effectiveness varying across different entrepreneurial stages. Mack et al. (2019) in Trinidad and Tobago linked students' entrepreneurial interest to the level and quality of exposure to entrepreneurial activities, emphasizing the need for continuous exposure. In Kenya, Duncan (2020) identified challenges in TVET, such as a lack of customized teaching materials and research services, which hinder EE effectiveness and reduce student self-efficacy.

### **Opportunities for Curriculum Enhancement**

Abdullah (2020) suggested that EE can be enhanced through extracurricular experiences such as business plan competitions, enterprise tours, collaborations, and projects. These activities complement traditional academic courses. The Know About Business program, originating in Kenya, has gained international recognition and is implemented in vocational training programs, including in Sri Lanka. Other best practices include Production-Based Learning Approaches in Indonesia and Malaysia, where students create marketable products. In Thailand, business incubation centers support vocational students in developing small entrepreneurial companies by providing coaching, mentorship, practical experience, and network-building assistance. Mentorship is crucial, offering students a supportive environment to learn from mistakes and become better risk-takers. Festeu et al. (2020) proposed an EE framework with five modules—innovation management, intellectual property law, business planning, leadership, and project management—suitable for EE programs in Eastern Europe. Practical activities in startup centers were the most preferred approach among students in Belarus, Moldova, and Ukraine, with business planning being the most valued topic.

Research highlights the effectiveness of web-based prototype development tools and business simulation games in bridging theory and practice in business and entrepreneurial studies. These innovative, student-centered teaching approaches promote critical and technical thinking. Al Kaabi (2022) found that using a business simulation game and a prototype development platform in a flipped classroom setting at an Emirati private university enhanced students' learning outcomes, including higher-order thinking, idea generation, problem-solving, and creativity. Hutasuhut et al. (2023) introduced a Business-Based Entrepreneurial Learning Model in Indonesia, which improved students' self-efficacy and EI by providing practical business planning, execution, and development knowledge.

### **Curriculum Adjustments and Teaching Methodologies Enhancements**

Al Kaabi (2022) emphasized that EE differs from traditional business and economics education, requiring students to apply practical knowledge rather than relying solely on theoretical learning. Forcher-Mayr and Mahlknecht (2020) recommended that EE examine the links between unequal opportunities and risks and consider individuals' capabilities using an inquiry-based approach. They suggested that EE programs should be capability-based and include a financial value creation perspective that spans business and non-profit organizations, considering social, cultural, and civic values. Ratten and Usmanij (2021) noted that while EE can be versatile and applied in different settings, it faces challenges, such as adapting curricula to accommodate cultural differences in learning. Educators should explore recent employment trends to identify essential skills for future occupations.

Furthermore, Abdullah (2020) proposed a three-phase approach for effective EE: personal, skill, and enterprise development. The personal development phase focuses on cultivating entrepreneurial traits and skills, including creativity, innovation, social networking, and negotiation skills. TVET core courses can develop these skills, while enterprise development can be fostered through experiential learning experiences that involve starting and managing business ventures. This requires efficient learning resources and infrastructure, which are critical for successful EE programs.

The complete integration of EE into TVET programs is essential for sustainable and productive outcomes. Vocational institutions should offer more practical interactions and experiences, such as diverse outreach activities, followed by continuous assessment and reassessment. This necessitates a comprehensive policy to embed EE across all programs, not just business ones. Gamede and Uleanya (2019) also recommended shifting from content-based to competency-based curricula to implement EE effectively. Teaching approaches should be more student-centered and practical, utilizing business simulations, gaming, and business setups. EE should be fully integrated into TVET programs to provide students with knowledge and entrepreneurial skills, enhancing their employability or enabling self-employment. Effective EE programs must consider socioeconomic environments, laws, policies, and cultural attitudes (Festev et al., 2020).

## Theoretical Framework

This study is based on Social Cognitive Theory (SCT), developed by Albert Bandura. SCT emphasizes the role of social interactions, observational learning, and reciprocal determinism in shaping behaviors, skills, and performances. It posits that individuals learn by observing others and the consequences of their actions, which influences their behaviors and decisions.

Self-efficacy, a central concept in SCT, refers to an individual's belief in their capability to succeed in specific tasks. Higher self-efficacy enhances motivation and persistence, especially in challenging tasks. In entrepreneurship, ESE can be developed through social learning, including observing others' successes and receiving social reinforcement. Fearon et al. (2021) highlight that ESE is crucial during the opportunity recognition phase, influencing investment decisions and structuring business ventures. Increased ESE, fostered through successful social learning experiences, boosts confidence in entrepreneurial skills and planning (Hutasuhut et al., 2023).

SCT provides a framework for understanding how ESE develops in TVET students, mainly through modeling and observational learning. Fearon et al. (2021) suggest that SCT can elucidate how interactions between individuals, their environment, and behaviors foster

entrepreneurial intentions (EI). Moreover, SCT explains how psychological traits shape responses to entrepreneurial stimuli, with self-efficacy mediating the relationship between these traits and EI (Roy & Das, 2020). SCT posits that learning and motivation are influenced by the dynamic interplay between personal characteristics and environmental factors. This perspective offers insights into EE and the development of ESE, highlighting the importance of tailored educational strategies to enhance entrepreneurial success.

In conclusion, as the UAE's economy evolves towards a knowledge-based model, the emphasis on EE within TVET programs becomes crucial. The integration of EE can enhance job creation, national competitiveness, and economic growth by cultivating entrepreneurial skills. While existing research highlights the value of EE, more studies are needed to understand its long-term impact on graduates' success and the role of socio-economic factors in shaping entrepreneurial outcomes (Hamdan, 2019). This study explores the integration of EE in UAE TVET programs, focusing on how self-efficacy mediates the relationship between EE and student outcomes.

## Research Questions

The study aims to answer the research questions below:

1. How does the integration of Entrepreneurship Education in UAE TVET programs influence students' entrepreneurial self-efficacy and their confidence in performing entrepreneurial tasks such as identifying business opportunities, developing business plans, and executing projects?
2. What are the perspectives of TVET educators, administrators, and industry representatives on the current state of Entrepreneurship Education in UAE TVET programs, and what actionable strategies can be implemented to enhance its effectiveness?

## METHODOLOGY

### Research Design

This study utilizes a mixed-methods research design, combining quantitative and qualitative approaches to examine the integration of EE within UAE TVET programs. The primary goals are to assess students' ESE and gather insights from key stakeholders to inform enhancements to the educational framework.

### Participants

The study involved two distinct groups. Participants for the quantitative survey were TVET students enrolled in various institutions across the UAE, representing fields such as engineering, business, information technology, health sciences, and arts and humanities. A stratified random sampling method was employed to ensure diverse representation across different demographics, including age, gender, year of study, and field of study.

**The second group** included TVET educators, administrators, and industry representatives involved in the delivery and management of TVET. These stakeholders provided valuable insights through qualitative focus groups, offering their perspectives on the effectiveness of current programs and identifying potential areas for improvement in EE.

### Recruitment

Participants were recruited using a combination of purposive and stratified sampling techniques. For the quantitative survey, TVET students were approached through institutional

contacts and invited to participate via email, which included a link to the survey along with a brief overview of the study's purpose, the voluntary nature of participation, and assurances of confidentiality.

Key stakeholders were selected for the qualitative focus groups based on their roles and experience with TVET. Invitations were emailed to potential participants, accompanied by an information sheet outlining the focus group's objectives, the process, and ethical considerations. Efforts were made to ensure diverse perspectives by including stakeholders from different institutions and industries.

## **Instrumentation**

### **Quantitative Instrument**

The study employed a comprehensive survey to evaluate ESE and the perceived quality of EE and on-the-job training (OJT). Drawing from the Entrepreneurial Intention Questionnaire (EIQ) by Jaén and Linàn (2013) and the Coates (2009) AQTF Quality Indicator, the survey included sections on demographic data, entrepreneurial self-efficacy, and perceptions of educational content and OJT quality. Additionally, open-ended questions were incorporated to gather qualitative insights into participants' experiences, challenges, and recommendations for enhancing EE and OJT. This approach provided a detailed understanding of participants' confidence in various entrepreneurial skills and their views on the effectiveness and relevance of the education they received.

### **Qualitative Instrument**

Focus groups with TVET educators, administrators, and industry representatives were conducted to complement the quantitative data, exploring the effectiveness of current programs and identifying strengths, weaknesses, and areas for improvement. The questions for these discussions were carefully crafted to align with the study's objectives and the Theory of Planned Behavior, focusing on attitudes, subjective norms, and perceived behavioral control related to entrepreneurship. The development process ensured the relevance of the questions to the UAE context, considering local educational and economic factors. Based on standard qualitative research practices, this methodological approach allowed for comprehensive and flexible discussions, eliciting detailed feedback on the quality of entrepreneurship education, experiences with on-the-job training, and suggestions for enhancing these programs.

## **Data Collection**

Quantitative data were collected anonymously through an electronic survey conducted in English, with the survey link distributed via email to TVET students, ensuring a diverse range of participants. The Zoom online focus groups allowed broad stakeholder participation from various geographic locations. Each session, lasting 45-60 minutes, was moderated and followed a structured discussion guide addressing key topics such as perceptions of EE, program effectiveness, quality of OJT, and areas for improvement. This guide provided structure while allowing for deeper exploration through additional questions and discussion prompts.

## **Data Analysis**



The quantitative data were analyzed using descriptive statistics to summarize demographic information and responses to the self-efficacy and perceived quality measures. Inferential statistics, including correlation and regression analyses, were employed to explore relationships between entrepreneurial self-efficacy, demographic variables, and the perceived quality of education.

The focus groups were transcribed verbatim and analyzed using thematic analysis. This process involved coding the data to identify recurring patterns and themes. The study focused on critical areas such as perceptions of EE, the effectiveness and impact of current programs, the quality of OJT, challenges and barriers, industry engagement, and recommendations for enhancement.

### **Ethical Considerations**

The study adhered to strict ethical guidelines, ensuring informed consent, confidentiality, and the anonymity of all participants. The Abu Dhabi Center for Technical and Vocational Education and Training Research Ethics Committee approved the research. Participants were fully informed about the study's purpose, their rights, and the recording of focus group sessions. All participants provided informed consent, and all data were securely stored and accessible only to the research team.

## **RESULTS**

### **Survey**

#### **Demographic Information**

The survey included 500 TVET students from various institutions across the UAE, with 48% males and 52% females. Age distribution was as follows: 40% were aged 18-22, 30% aged 23-27, 20% aged 28-32, and 10% aged 33 and above. The fields of study represented were Engineering (25%), Business (20%), Information Technology (18%), Health Sciences (15%), and Arts & Humanities (22%). Most respondents were in their second year (40%), followed by first-year (30%), third-year (20%), and fourth-year students (10%). Notably, 30% had previous entrepreneurship experience, offering diverse insights into the current state of entrepreneurship education.

#### **Entrepreneurial Self-Efficacy**

Students exhibited strong confidence in Identifying Business Opportunities, averaging a rating of 4.2, and in Developing Business Plans, scoring 4.1. These high scores suggest robust capabilities in market analysis and strategic planning. Execution skills, such as Executing Entrepreneurial Projects and Leadership and Team Management, also rated highly at 4.0 and 4.1, respectively, indicating preparedness for practical execution and effective team leadership.

However, moderate confidence was observed in Financial Management and Marketing and Sales, with average scores of 3.9 and 3.8, respectively. While students showed strengths in budgeting, their confidence in securing funding was lower. Similarly, while marketing strategies were rated positively, there was a noted need for improved digital skills. Innovation and Creativity received high marks, averaging 4.0, indicating solid abilities in generating innovative ideas and solving complex problems creatively. Lower scores were seen in Risk Management (3.7) and Use of Technology and Innovation (3.9), with challenges noted in contingency planning and data security. Ethical and Social Responsibility stood out

with a strong score of 4.0, reflecting high awareness of ethical practices and social impact commitments.

### **Perceived Quality of EE and OJT**

Students rated the relevance of their educational content highly, with an average score of 4.1, and 82% agreed that the courses effectively covered current trends and real-world scenarios, aligning well with job market requirements. The quality of instruction received an even higher rating of 4.2, reflecting students' appreciation for the instructors' practical experience and diverse teaching methods; 85% found the instructor feedback to be constructive and helpful.

Satisfaction with OJT was generally positive, with an average rating of 3.9. Students valued the chance to apply classroom knowledge in real-world settings, though 20% felt that more structured guidance during their placements would be beneficial. Students reported significant improvement in developing work competence skills, particularly in problem-solving, which scored an average of 4.0, and communication skills. However, 15% noted a need for better time management skill development, highlighting an area for further focus.

Industry engagement and networking opportunities received an average score of 3.8, indicating moderate satisfaction. While students appreciated interactions with industry professionals, 25% suggested that more networking events could enhance their experience. Support for student startups was rated at 3.7, with students valuing the available resources and mentorship but expressing a desire for more opportunities to pitch ideas to investors and additional support in developing their startups. See Table 2 for full results.

### **Correlation and Regression Analysis**

The data analysis revealed a significant positive correlation between ESE and the perceived quality of EE ( $r = 0.65$ ,  $p < 0.01$ ). Regression analysis highlighted that the quality of instruction ( $\beta = 0.45$ ,  $p < 0.01$ ) and relevance of content ( $\beta = 0.40$ ,  $p < 0.01$ ) were significant predictors of entrepreneurial self-efficacy. These findings suggest that higher perceived quality in educational content and instruction positively influences students' confidence in their entrepreneurial abilities, underscoring the importance of quality education in fostering entrepreneurial skills.

### **Survey Open-Ended Questions**

The open-ended questions provided qualitative insights into the students' experiences and perceptions of the EE and OJT components. The responses were analyzed to identify recurring themes and significant viewpoints.

#### ***Most Beneficial Aspects of the EE Program***

Most respondents highlighted the hands-on nature of the courses as particularly beneficial. They appreciated activities like business simulations, real-world case studies, and project-based learning, which helped them apply theoretical knowledge practically. One student noted, "The practical exercises and case studies were invaluable in understanding how to apply concepts in real-world scenarios." Many students valued the mentorship from experienced entrepreneurs and the networking opportunities facilitated by the program. These connections provided practical insights and potential career pathways. A respondent mentioned, "Having access to mentors who are successful entrepreneurs provided me with real-life insights and valuable advice." Several students appreciated the program's emphasis

on current market trends and real-world business challenges, which prepared them to understand and navigate the complexities of the business environment. One student said, "The focus on real-world challenges helped me understand what it takes to succeed in the market."

### ***Challenges Encountered in EE and OJT***

Students highlighted several challenges they faced in the EE and OJT components. One significant issue was the limited access to resources, including project funding, modern technology, and comprehensive databases. These limitations were seen as barriers to fully developing and testing business ideas, with one student noting, "Sometimes we struggled with access to the latest technology and databases, which are crucial for thorough market research." Additionally, the structure of the OJT placements was a concern for many. Some students felt these placements needed to fully align with their academic learning or career interests, reducing their effectiveness. One participant said, "The OJT experience was not as organized as I had hoped, and it didn't always match my study focus." Moreover, time constraints posed a significant challenge, as students needed help to balance the demands of academic coursework with the practical experience required by OJT. One student shared, "It was challenging to juggle the intense academic workload with the demands of OJT."

### ***Suggested Improvements for the EE and OJT Components***

Students suggested several improvements to enhance their practical training and overall experience in the entrepreneurship program. They emphasized the need for more hands-on training and real-world experience, advocating for increased opportunities for internships, live projects, and interactions with industry professionals. One student remarked, "More live projects and internships would help us gain hands-on experience and better prepare for the job market." Another key recommendation was aligning OJT placements with students' career goals and academic backgrounds. A respondent noted, "Tailoring the OJT to match our career goals and studies would make the experience more relevant and beneficial." Additionally, there was a strong desire for increased support for student startups, including access to seed funding, incubator programs, and more frequent pitch events to attract potential investors. As one student mentioned, "It would be great to have more access to funding and opportunities to pitch our ideas to real investors."

### ***Influence of the Program on Career Goals and Aspirations***

Many students expressed an increased interest in entrepreneurship as a direct result of the program. They felt more confident in their ability to start and run a business, with one student stating, "The program has sparked my interest in starting my own business someday." Additionally, some students noted that exposure to entrepreneurship broadened their career aspirations, making them consider roles in startups or innovation-focused positions within established companies. One participant shared, "I'm now open to working in innovative roles within startups or even launching my venture." The program also significantly boosted many respondents' self-confidence, particularly in public speaking, leadership, and problem-solving. One student commented, "The program has boosted my confidence, especially in public speaking and leadership."

### ***Specific Areas or Skills for Inclusion or Expansion in the Program***

Students frequently highlighted the need for more comprehensive training in digital marketing and e-commerce, reflecting the growing importance of these skills in the modern business landscape. One student suggested that "more in-depth courses on digital marketing and e-commerce would be beneficial, given the current market trends." There was also a strong interest in more detailed courses on financial management, including investment strategies and fundraising techniques. One respondent noted, "We need more training on securing investment and managing finances effectively." Additionally, some students desired more education on the legal and regulatory aspects of starting and running a business, including intellectual property rights, contract law, and regulatory compliance. A student suggested, "It would be beneficial to have more guidance on the legal aspects of entrepreneurship, like intellectual property and contracts."

In conclusion, the qualitative responses to the open-ended questions provided valuable insights into the strengths and areas for improvement in the EE and OJT components. While students generally appreciated the practical and real-world focus of the program, they also identified critical areas for enhancement, such as better resource access, more structured OJT experiences, and expanded support for entrepreneurial ventures. These findings underscore the importance of continually adapting and refining educational programs to meet students' evolving needs and demands in the business environment.

### **Participant Demographics**

The focus groups comprised 25 participants, including 10 TVET educators, eight administrators, and seven industry representatives, selected for their roles in managing and delivering TVET programs across the UAE. The participants represented various fields, such as engineering, business, healthcare, and information technology. The group included professionals at different career stages, from early-career educators to senior experts with over 20 years of experience. Five focus groups were conducted, each with five participants, chosen randomly based on availability.

### **Themes and Insights**

The focus group discussions provided a wealth of information, organized into several key themes. These themes offer a comprehensive view of the strengths and challenges in the current EE and OJT programs, as perceived by the participants. The below outlines these themes in detail, supported by direct participant quotes.

#### **Theme 1: General Perceptions of EE**

Participants generally viewed the current state of EE in UAE TVET programs positively, noting significant progress. However, they also identified areas needing improvement. There was a consensus that EE is crucial for preparing students for a rapidly changing job market.

**P8:** "Our programs are good at teaching students to think outside the box and tackle real-world problems, which is essential for entrepreneurship." (Industry Representative)

**P12:** "The case studies and project-based learning modules are particularly effective in fostering entrepreneurial thinking." (TVET Educator).

#### **Theme 2: Strengths of the Existing EE Curriculum**

The strengths highlighted included the curriculum's relevance to real-world applications and the use of innovative teaching methods. These aspects were vital in helping students develop critical entrepreneurial skills, such as critical thinking, problem-solving, and creativity.

*P5: "Our curriculum does a good job integrating real-world scenarios that help students understand practical business challenges." (Administrator)*

*P17: "The inclusion of interactive elements like simulations and workshops enhances the learning experience significantly." (TVET Educator)*

### **Theme 3: Effectiveness and Impact of EE**

Participants generally felt that EE programs effectively enhanced students' entrepreneurial skills and self-efficacy. However, they noted that more support is needed for practical skills, such as securing funding and understanding regulatory environments.

*P17: "We've seen students start small businesses and projects while still studying, which is a testament to the program's effectiveness. However, more support on financial aspects and understanding the business landscape is needed." (Administrator)*

*P9: "There's a noticeable increase in students' confidence levels, but they often lack the practical know-how to turn ideas into viable businesses." (Industry Representative)*

### **Theme 4: Quality of OJT**

The quality of OJT received mixed reviews. While hands-on experience was valued, the consistency and structure of these opportunities varied significantly.

*P9: "OJT is a critical component, but its quality can be inconsistent. Some students get excellent exposure, while others are left to figure things out on their own." (TVET Educator)*

*P15: "OJT placements are invaluable, but they can sometimes lack clear objectives and adequate supervision." (Administrator)*

### **Theme 5: Challenges and Areas for Improvement**

Key challenges included aligning EE more closely with local economic needs, improving industry engagement, and enhancing teaching resources. Participants emphasized the need for continuous curriculum updates and stronger industry partnerships.

*P21: "Updating the curriculum to reflect current market demands is crucial, as the entrepreneurial landscape is constantly evolving." (TVET Educator)*

*P16: "There needs to be a stronger link between what we're teaching and the actual needs of the industry. This requires ongoing dialogue with businesses and a more dynamic curriculum." (Industry Representative)*

### **Theme 6: Industry and Community Engagement**

There was a consensus on the need for more robust industry partnerships to enhance the EE experience. These partnerships could provide mentorship opportunities and practical insights that are currently limited.

**P18:** *"Engaging with successful entrepreneurs as guest speakers or mentors would greatly benefit the students." (Industry Representative)*

**P22:** *"Industry partnerships can bridge the gap between theoretical knowledge and practical application." (Administrator)*

### **Theme 7: Recommendations for Enhancements**

Participants recommended several enhancements, including increased funding for entrepreneurial projects, comprehensive mentorship programs, and the inclusion of advanced topics such as digital entrepreneurship and sustainability.

**P22:** *"Introducing courses on digital marketing and e-commerce would equip students with the skills needed in today's digital economy." (Administrator)*

**P14:** *"We need to expand our focus to include emerging fields like digital entrepreneurship and sustainability, which are becoming increasingly important." (TVET Educator)*

### **Theme 8: Future Directions and Opportunities**

The focus groups highlighted the importance of incorporating future-oriented topics such as technology integration in business and global market trends. Preparing students for international entrepreneurial landscapes was seen as crucial.

**P25:** *"Fostering a global entrepreneurial mindset will help students adapt to diverse markets and business environments." (TVET Educator)*

**P20:** *"Our students need to be ready for a global market, not just the UAE. This means understanding international trends and technologies." (Industry Representative)*

### **Theme 9: Feedback on Support Systems**

While support systems like mentorship programs and business incubators were praised, participants noted that access could be uneven. Expanding these resources and making them more accessible to all students was recommended.

**P10:** *"Expanding access to funding opportunities and startup incubators would significantly benefit aspiring entrepreneurs." (Industry Representative)*

**P19:** *"Mentorship and incubator programs are great, but they need to be more widely available. Not all students know how to access these resources." (Administrator)*

The survey and focus groups' results reveal a generally positive perception of EE within UAE TVET programs, highlighting strengths in fostering critical entrepreneurial skills. However, they also identify key areas for improvement, including the need for more practical training, enhanced industry engagement, and broader access to support systems like mentorship programs and business incubators. The curriculum would also benefit from an update to include emerging fields to better equip students for the global market. Addressing these areas will help ensure that UAE TVET programs continue to evolve and effectively prepare students for future entrepreneurial challenges and opportunities.

## DISCUSSION

This study aimed to answer two primary research questions: (1) How does the integration of EE in UAE TVET programs influence students' ESE and their confidence in performing entrepreneurial tasks such as identifying business opportunities, developing business plans, and executing projects? (2) What are the perspectives of TVET educators, administrators, and industry representatives on the current state of EE in UAE TVET programs, and what actionable strategies can be implemented to enhance its effectiveness?

Concerning RQ1, the findings indicate that integrating EE in UAE TVET programs significantly positively impacts students' ESE. Students showed high confidence in identifying business opportunities, with 82% feeling capable of identifying market gaps and new product needs. This suggests that the curriculum effectively cultivates critical thinking and market research skills essential for aspiring entrepreneurs. The additional insights on CESE further emphasize the pivotal role of self-efficacy in fostering entrepreneurial intentions, even in the absence of educational support, highlighting the critical influence of self-efficacy alone (Khalil, 2024). Furthermore, a substantial majority demonstrated competence in developing comprehensive business plans, including detailed market and financial analyses, indicating that the curriculum imparts theoretical knowledge and ensures practical application (Xu et al., 2023).

However, the study also highlighted areas needing improvement. While students exhibited strategic solid planning and theoretical skills, their confidence in practical aspects like securing funding and managing digital marketing was required to be higher. Only 65% felt confident in securing investment, and there was a notable gap in digital marketing skills, with an average confidence score of 3.6. These results suggest that while EE programs effectively build foundational knowledge and strategic thinking, they could benefit from more practical, hands-on learning experiences. This could include simulated business environments, real-world project work, and more comprehensive modules on financial management and digital marketing—skills crucial in today's technology-driven market landscape (Hamdan, 2019). The findings align with observations from Oman, where the quality of OJT significantly impacted student satisfaction and work competence, highlighting the importance of practical, skill-based training in enhancing employability (Turrohmah & Wahyuni, 2023).

About RQ2, stakeholders, including TVET educators, administrators, and industry representatives, generally viewed the current state of EE in UAE TVET programs positively, acknowledging significant progress in fostering critical entrepreneurial skills. However, they also pointed out several areas needing improvement. There was a consensus that the curriculum should be more closely aligned with the UAE's specific economic and industrial needs, particularly as the country transitions to a knowledge-based economy. A key concern was the variability in the quality of OJT experiences. While OJT is valued for providing practical exposure, the lack of standardization and alignment with students' career goals can limit its effectiveness. This inconsistency suggests a need for more structured and carefully designed OJT experiences closely integrated with the academic curriculum (Authors, 2023).

Industry engagement emerged as another critical area for improvement. Although existing partnerships provide valuable mentorship and networking opportunities, there is potential for these relationships to be expanded and deepened. Enhanced collaboration with industry professionals could offer students more direct insights into the challenges and realities of the business world, better preparing them for entrepreneurial ventures. Focus group participants suggested that strengthening industry partnerships could help bridge the gap between theoretical knowledge and practical application, especially in emerging areas like digital entrepreneurship and sustainability (Forcher-Mayr & Mahlknecht, 2020).

In conclusion, this study highlights the positive influence of EE on the entrepreneurial self-efficacy of students in UAE TVET programs. While students show strong confidence in theoretical skills like market analysis and business planning, there remains a need for more hands-on training, particularly in areas such as securing investment and mastering digital marketing. Educators, administrators, and industry representatives agree on the curriculum's strengths but emphasize the need for better alignment with industry demands and more consistent OJT experiences. Expanding industry collaborations and incorporating new areas of study into the curriculum is crucial for better preparing students for the changing business environment. These findings suggest a clear path for improving EE in UAE TVET programs to develop a more innovative and entrepreneurial workforce.

## LIMITATIONS

This study has several limitations that should be considered. The reliance on self-reported data from surveys and focus groups introduces potential biases, such as social desirability bias, where participants may present themselves more favorably. While substantial, the study's sample size and demographic diversity may only partially represent part of the spectrum of perspectives within the UAE TVET student population. Additionally, the cross-sectional design limits the ability to assess changes in ESE and educational outcomes over time. Moreover, the qualitative data from focus groups, although detailed, may need to be more generalizable due to the specific contexts and experiences of the participants. Future research could address these limitations by employing longitudinal studies, expanding the demographic and geographic scope, and using mixed-methods approaches to triangulate data from multiple sources.

## Recommendations

Several key steps are recommended to enhance the integration and effectiveness of EE within UAE TVET programs. First, OJT must expand its structure to provide consistent and meaningful student experiences alongside increasing internships and live projects. Strengthening industry partnerships by collaborating with professionals to offer mentorship, guest lectures, and workshops is essential. Additionally, organizing networking events and competitions can further connect students with potential mentors and investors.

Updating the curriculum to include digital skills and emerging fields like digital entrepreneurship, e-commerce, and digital marketing is crucial. This should be complemented by more comprehensive training in financial management, investment strategies, and the legal aspects of entrepreneurship. Ensuring these updates are responsive to market demands and technological advancements will keep the curriculum relevant. Improving access to resources and support systems, such as seed funding, incubator programs, and innovation labs, is also necessary. Expanding mentorship programs can give all students the guidance needed to succeed, regardless of their field of study. Lastly, fostering a global perspective by integrating international business practices and cross-cultural competencies into the curriculum will prepare students for a global business environment. Regular feedback mechanisms involving students and industry stakeholders will help align the curriculum with evolving industry needs and student aspirations. By implementing these recommendations, UAE TVET programs can better prepare students for entrepreneurial careers, supporting the nation's economic development and fostering a dynamic, innovative workforce.



## CONCLUSION

This study provides an in-depth examination of the current state of EE within the UAE's TVET programs, highlighting strengths and areas needing improvement. The incorporation of EE has notably enhanced students' entrepreneurial self-efficacy, fostering essential skills like identifying business opportunities, developing business plans, and managing entrepreneurial projects. The research points to a generally positive perception of EE among students and stakeholders, emphasizing a curriculum that effectively blends theoretical knowledge with practical applications. However, it also identifies gaps in financial management, digital marketing, and industry engagement, indicating a need for more robust support systems and resources to fully prepare TVET graduates as future entrepreneurs.

Looking ahead, the insights from both quantitative and qualitative data suggest several critical strategies for advancing EE in UAE TVET programs. Recommendations include deepening industry partnerships, expanding practical training opportunities, and updating curricula to cover emerging fields like digital entrepreneurship and sustainability. These steps are crucial for aligning educational outcomes with the evolving job market demands and fostering a more entrepreneurial mindset among students. As the UAE transitions towards a knowledge-based economy, TVET programs must develop, equipping students with the skills and confidence necessary to innovate and excel in a competitive global landscape. This study provides a valuable foundation for future research and policy-making to improve EE's effectiveness in TVET settings, ultimately supporting the nation's economic growth and diversification objectives.

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