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DEPARTMENT OF ENTREPRENEURSHIP AND INNOVATION IN EDUCATION

PERSPECTIVES OF HIGHER EDUCATION STUDENTS AND TEACHERS ON THE BENEFITS AND CHALLENGES OF ARTIFICIAL INTELLIGENCE AND ENTREPRENEURSHIP

MASTER'S THESIS

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APPROVAL

We certify that we have read the thesis submitted by Jameela Saleh AL Harbi, "Perspectives Of Higher Education Students And Teachers On The Benefits And Challenges Of Artificial Intelligence And Entrepreneurship," and that, in our combined opinion, it is fully adequate, in scope and quality, as a thesis for the degree of Master of Entrepreneurship and Innovation in Education.

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I confirm that all data, materials, analyses, and findings in this thesis were collected and presented according to the academic standards and ethical guidelines of the Graduate School of Educational Sciences at Near East University. Additionally, I assert that I have properly attributed and cited any information and data that are not original to this work, as mandated by these conduct rules.

Jameela Saleh ALHarbi

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ABSTRACT

PERSPECTIVES OF HIGHER EDUCATION STUDENTS AND TEACHERS ON THE BENEFITS AND CHALLENGES OF ARTIFICIAL INTELLIGENCE AND ENTREPRENEURSHIP

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Artificial Intelligence (AI) is a broad field of computing that focuses on developing machines capable of intelligent behavior. It is crucial for decision-making, especially as the volume and speed of available data increases. Industries such as finance heavily rely on AI to identify trends and insights that are impossible for the human brain to process. The global market for AI is expected to keep growing.

AI-powered education offers significant benefits, especially in a knowledge-based economy. AI can speed up labor-intensive tasks and help bridge knowledge gaps. However, ethical concerns about using student data to power AI are also essential to consider.

AI is seen as a tool that can support entrepreneurs in various ways. So, how AI can support entrepreneurship education (EE). The changing business environment and technological advancements have influenced the development of entrepreneurship education (EE).

The researcher utilized a qualitative method involving collecting views and thoughts from all participants to understand the research topic. The study involved 40 students and 10 lecturers from three colleges at Aden University: Information Technology (IT) College, Science College, and Business College-Year 4 that apply the entrepreneurship (ENP) approach. An interview was developed to explore how AI enhances the students' entrepreneurial skills in Entrepreneurship courses.

This research examines the possible applications of AI in higher education, specifically within entrepreneurship programs, and discusses its associated advantages and challenges. The study concentrated on students' knowledge and utilization of AI

tools (chatbots) such as Chatgpt, Gemni, copilot, Paper Digest, Research Rabbit, Canvas, and Data Wrapper, perceived advantages and drawbacks, and methods for incorporating these tools into entrepreneurship classes.

In conclusion, the study's findings suggest that AI has the potential to streamline processes, enhance students' efficiency, and foster certain types of creativity. Collaboration between educators and students within the educational system is essential to identifying gaps between implementing AI technologies and pedagogical approaches at Aden University.

Keywords: Education, Higher education Students, Artificial Intelligence, Entrepreneurship

ÖZET

ÜNİVERSİTE ÖĞRENCİLERİ VE ÖĞRETMENLERİN YAPAY ZEKA VE GİRİŞİMCİLİĞİN FAYDALARI VE ZORLUKLARI İLE İLGİLİ GÖRÜŞLERİ

JAMEELA SALEH NAJI AL HARBI

EĞİTİMDE GİRİŞİMCİLİK VE LİDERLİK BÖLÜMÜ

TEZ DANIŞMANI: DOÇ. DR. FATMA KÖPRÜLÜ

Ocak, 2025

(85 sayfa)

Yapay Zeka (YZ) yapay davranışlar konusunda becerili gençlere yönelik geniş bir bilgisayar alanıdır. Özellikle alan ve hızla ilgili veri arttıkça karar verme konusunda çok önemli bir yer tutmaktadır. Finans gibi endüstriyel alanlar, insan beyninin başaramayacağı eğilimler ve kavramlar konusunda Yapay Zekaya güvenmektedirler. Global pazarın Yapay Zeka nedeniyle daha da büyümesi beklenmektedir.

Yapay Zeka destekli eğitimin, özellikle bilgiye dayanan ekonomi alanında önemli katkıları görülmektedir. Yapay Zeka yoğun işgücünü destekleyip bilgi eksikliklerinin tamamlanmasını hızlandırmaktadır. Bu arada, Yapay Zekayı kullanan öğrenci verileriyle ilgili etkin konualar üzerinde durulması bir gerekliliktir.

Bu çalışmada, tüm katılımcıların konuyla ilgili düşüncelerini belirlemek için nitel bir yöntem uygulanmıştır. Bu çalışmaya, Aden Üniversitesi bünyeside üç kolejden – Bilgi Teknolojileri (IT), Fen Koleji, ve 4 yıllık Girişimcilik Uygulama İşletme Koleji (ENP) - 40 öğrenci ve 10 öğretim görevlisi katılmıştır. Uygulamada, Yapay Zekanın öğrencilerin girişimcilikteki becerilerini nasıl etkilediğini belirlemek için mülakatlar yapılmıştır.

Bu çalışma ayrıca Yapay Zekanın yüksek öğretimde özellikle girişimcilik programlarındaki olası uygulamalar ve buna bağlı avantaj ve zorlukları da incelemektedir. Bunun yanısıra bu çalışma öğrencilerin konuyla ilgili bilgilerini ve Yapay Zeka uygulamalarını (chatbots), örneğin Chatgpt, Gemni, Copilot, Paper Digest, Research Rabbit, Canvas ve Data Wrapper gibi Yapay Zeka (Chatbots) ve algılanan

avantaj ve eksikliklerin ve bu konuların girişimcilik sınıflarında uygulama programlarına ele almaktadır.

Sonuç olarak, çalışmada elde edilen bulgular, Yapay Zekanın uygulamaları kolaylaştırıp düzene koyduğu ve öğrencilerin birtakım belli yaratıcılık yeteneklerini geliştirdiğini göstermiştir. Eğitmenler ve öğrencilerin eğitim sistemi çerçevesindeki işbirliği Aden Üniversitesinde Yapay Zeka uygulamaları teknolojisiyle pedagojik yaklaşımlar arasındaki boşlukların giderilmesi konusunda çok önemli bir yere sahiptir.

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ABBREVIATIONS

AI – Artificial Intelligence

ENP- Entrepreneurship

RQ – Research Questions

EE –Entrepreneurship Education

AIEE- Artificial Intelligence Entrepreneurship Education

CHAPTER I

Introduction

1.1. Background of the study

The 21st century has introduced extraordinary transformations in our personal and professional spheres. Artificial Intelligence (AI), which pertains to computational systems and toolsets that can think and act logically or, in certain situations, similarly to humans, has rapidly expanded across various fields. Haenlein and Kaplan (2019) expressed that AI is essential in helping individuals accomplish complex tasks by leveraging digital technologies.

AI is poised to transform our lives, revolutionize economic activities, and create significant economic opportunities and social prospects. In the study "Fourth Industrial Revolution: An Overview of Uses, Future Opportunities, and Obstacles for Artificial Intelligence, Robotics, and Blockchain in Tertiary Education" by Chaka (2023). It is noted that many businesses across various industries are investigating the application of AI in their production facilities and service offerings. The goal is to reduce costs, improve services, penetrate new markets, streamline logistics and delivery operations, and enhance various local and global processes (IBM, 2019).

Artificial Intelligence (AI) includes diverse technologies that enable machines to carry out tasks traditionally associated with human thought processes. AI-powered programs and devices can make choices, resolve complicated problems, understand and generate natural language, and learn from unstructured data. According to Chen (2024), these AI tools are essential in changing various aspects of higher education, including teaching, learning, research, and administrative activities.

Higher education institutions are ideally situated to enhance students' skills and understanding of AI. To remain pertinent, higher education needs to adapt to meet the demands of this swiftly changing world. AI has moved beyond the scope of science fiction; (Cantú-Ortiz et al., 2020; Dai et al., 2020) noted that AI is becoming increasingly embedded in our everyday lives and changing how we interact with our environment. Gupta, M., & Singh, M. (2024, September) mentioned that incorporating Artificial Intelligence into educational curricula has been identified as a significant evolution of this decade.

The rapid growth in massive data and processing capacity drives the transformation of industries and societies through AI. To effectively integrate AI education into classrooms, teachers must participate in professional development and create age-appropriate materials for their students, thereby building the necessary human infrastructure (Lee, I., & Zhang, 2022).

Artificial Intelligence (AI) significantly aids young people in developing essential

entrepreneurial skills and mindsets for successful businesses. Entrepreneurship education (EE) inspires future graduates to adopt an entrepreneurial perspective and better tackle challenges. Through entrepreneurship education (EE), new entrepreneurs can launch their own companies and apply creative concepts, offerings, solutions, and advancements to enterprises' core.

According to (Chen et al. (2024), entrepreneurs have the power to reduce the unemployment rate and boost economic growth. Gofman, M., & Jin, Z. (2024) emphasized that startups and entrepreneurship drive innovation, create jobs, and foster economic growth.".

Entrepreneurship (ENP) and Businesses play an integral role in fostering economic development and creating job opportunities and innovation (e.g., Schumpeter (1942). The World Economic Forum emphasizes that (AI) has rapidly appeared as a critical driver of the Fourth Industrial Revolution.

In general, AI assists in cultivating entrepreneurial skills by shaping attitudes, values, and intentions, thereby preparing individuals for success.

1.2. Statement of the Problem

Through their research Mu, Q., & Zhao, Y. (2024) emphasized that the swift advancement of technology has dramatically influenced different facets of society, such as education, healthcare, the economy, and the environment. The use of technology has become essential in both professional and academic settings. Entrepreneurship is widely recognized as pivotal in addressing the wide-ranging challenges that individuals, organizations, and society encounter. Therefore, students must acquire entrepreneurship education through artificial intelligence (EEAI) knowledge to foster

their innovative, creative, and entrepreneurial abilities and keep them abreast of current developments.

The age of artificial intelligence (AI) brings remarkable prospects and obstacles for EE within higher education. Universities must adapt and revamp their entrepreneurship education (EE) frameworks to effectively cater to the needs of students and society in cultivating successful entrepreneurs. (Mu, Q., & Zhao, Y. (2024)) .

This article primarily discusses harnessing technology to improve entrepreneurial skills in Higher Education at Aden University. The transformation of entrepreneurship education in higher learning during the age of AI necessitates an all-encompassing strategy that focuses on the fusion of cutting-edge technologies, promotes cross-disciplinary cooperation, and values practical, hands-

on learning experiences. Moreover, adopting a worldwide viewpoint is crucial to equip students for the growing interconnectedness of the business landscape.

Enhancing students' ethical sensitivity and social responsibility is vital in addition to these technical competencies. By integrating these aspects into entrepreneurial education, universities can successfully cultivate a new wave of entrepreneurs skilled in utilizing AI technologies while remaining cognizant of the ethical and social consequences. This comprehensive strategy is critical for revitalizing future innovation and economic growth.

Colleges and universities need to update their curricula to focus more on the combination of entrepreneurship and technology. Additionally, it is essential to create efficient strategies to enhance entrepreneurial and creative skills using artificial intelligence (AI) while proactively tackling potential challenges that may impede educational advancement.

The main objective is to nurture a new wave of entrepreneurs who possess the creativity and problem-solving abilities essential for generating sustainable employment opportunities in every part of society, thus addressing the prevalent issues related to unemployment.

Our observations with higher education students at the University of Aden have identified discrepancies between the curriculum's theoretical framework and the

practical skills required for their future professions. Upon graduation, students do not possess the essential skills and knowledge in artificial intelligence (AI) and ENP, as the existing curriculum does not adequately address these fields.

More thorough and effective educational approaches are necessary to help students grasp the opportunities and challenges that artificial intelligence presents in entrepreneurship courses.

As illustrated by Mu et al. Y. (2024), the primary factors contributing to this issue include an obsolete curriculum, inadequate practical learning experiences, and a deficiency in resources to enhance students' entrepreneurial abilities.

This study emphasizes the necessity of revising the curriculum and improving educational resources for AI work settings and offers suggestions for future research.

1.3. Aim and Objectives

This research investigates the critical role of AI in developing entrepreneurial skills and fostering creativity and innovation in higher education. It emphasizes the need for collaboration between educators and students within the educational system to bridge gaps between implementing AI technologies and pedagogical approaches at Aden University.

1.4. Research Questions

This study will address the subsequent questions based on the outlined objectives.

RQ 1 Does AI play a significant role in developing entrepreneurial skills?

RQ 2 What are the effective strategies for teachers to build entrepreneurial skills in highly educated students at Aden University?

RQ 3 What are the possible disadvantages of incorporating AI into the education of highly educated students and its negative impact on their entrepreneurial abilities?

RQ 4 How can the educators and the students overcome these drawbacks?

1.5. Significance of the Study

This study is significant for higher education as it focuses on integrating technology into learning and teaching processes in entrepreneurship (ENP) courses. The study has highlighted that AI and ENP are leading the way in bringing about

changes in higher education. As a result, these trends in the academic sector are paving the way for a new generation that can adapt to the technological and entrepreneurial landscape.

The study focused on interviewing educators and higher education students. As a result, it revealed the mindsets and perspectives of academic staff, helping readers understand how AI can enhance the entrepreneurial skills of higher education students. The research identifies obstacles, examines existing methods, and suggests viable solutions. These solutions should be repetitive, reliable, and adaptable to educational institutions. The outcomes of this study will challenge institutions to rethink how they leverage technology, recommend guides for policy development, make informed decisions, and adapt to workforce changes. Adhering keenly to the outcomes of this study is expected to enhance the standard of education. The findings also spearhead a paradigm shift that will prompt educational leaders to innovate educational approaches and learning methods aligned with the technological era's demands, thereby enhancing the overall quality of learning. Finally, the significant effects of this study are not just locally applicable but also global demand capable of revolutionizing the sector.

Engaging in research projects enables learners to drive technological advancements, investigate novel concepts, and suggest solutions. Courses in research and innovation also provide opportunities for students to work alongside professionals and fellow researchers to promote academic and practical knowledge sharing.

To achieve this objective, universities can invite experts or entrepreneurs to be guest lecturers for courses. These professionals can share real-life application examples and integrate cognitive comprehension with hands-on entrepreneurial experiences.

This collaboration aids in translating academic research findings into real-world applications, giving entrepreneurs a broader perspective. Combining entrepreneurial education, higher education research, and centers for innovation is essential for fostering AI entrepreneurs, as it equips students with numerous resources and chances to drive innovation and develop industries. Collaboration between universities and enterprises allows students to work alongside businesses and jointly tackle practical challenges.

1.6. Limitations and Delimitations of the Study

The following restrictions on the research should be considered:

The researcher interviews the respondents by phone, email, messaging, and Google Meetings.

The responders took the time to respond to the structured interview questions and offer their opinions.

This may occur because they can complete it whenever convenient and then provide the researcher with their feedback.

On the other hand, this study's delimitation lies around the number of colleges. Three colleges were selected for the study, smaller than Aden University's extensive population and size. Due to the research only covering three colleges within the university, the findings may not apply to the whole university, as many students are pursuing higher education. Additionally, this study was conducted exclusively with students in grade 4 from these colleges studying entrepreneurship. However, the results are appropriate for this study. The research occurs in the following sections, from Aug 1st, 2024, to Oct 15th, 2024.

1.7 Definition of Terms

AI: Artificial Intelligence (AI), is machine intelligence, especially that displayed by computer systems.

ENP: (Entrepreneurship) the ability and desire to establish, design, and oversee a business venture and its associated risks to generate profit. The most recognized example of entrepreneurship is the initiation of new companies.

RQ: (Research Question) This section states the specific issue or problem your research will focus on.

EE: Entrepreneurship Education.

AIEE: AI in Entrepreneurship Education.

CHAPTER II

Literature Review

2.1. Education

Education is vital in transforming youth into adaptable and creative individuals. According to Ahmad, M. I. S., Idrus, (2023), it equips them with pertinent entrepreneurial skills and creates a nurturing environment. Additionally, education should promote ethical principles and social responsibility while incorporating technology to improve learning effectiveness.

Educational stages represent the various levels and phases of formal learning, which are essential for a structured approach to education. These stages typically encompass Early Education, Primary Education following early childhood education, and Secondary Education becoming more specialized. Students can choose subjects that align with their interests and future career paths. Tertiary Education is known as higher education. This stage follows the completion of secondary education, including undergraduate and postgraduate studies. This level of education emphasizes in-depth knowledge and advanced skills in a specific field of study, equipping students for professional jobs or continued academic endeavors.

Learning plays a crucial role in transforming young individuals into competitive and innovative members of society, especially in today's complex and rapidly changing global economy. It helps cultivate the skills and attitudes these young individuals need to thrive as capable and forward-thinking members of society. (Said Ahmad. (2023).

Kingkaew and Ikeda,M. (2023) demonstrated that fostering reflective thinking is becoming more important for assisting learners in forming strategies to utilize new information in unpredictable everyday scenarios.

Education is crucial in equipping individuals with essential entrepreneurial skills, fostering a conducive environment, and eliminating the negative belief of failure. Additionally, it should emphasize ethical principles and social responsibility while incorporating technology to improve learning effectiveness. Furthermore, integrating social entrepreneurship and inclusiveness into education is vital to promote positive social impacts.

Several positive changes have occurred in education, improving its quality and efficiency. However, utilizing the conditions and opportunities created within this system remains a pressing issue today. Mechanisms enhancing young people's motivation to learn must be developed and implemented. Abulova and M. K. (2023) also stated that we must improve knowledge, educational processes, and quality control systems by incorporating new and non-traditional teaching methods.

These factors necessitate improvements in the continuous education system to elevate the effectiveness of education to a higher quality standard. (Abulova, M. K. (2023).

2.2. Higher Education

Educational stages are crucial for personal development and societal advancement, empowering individuals with the knowledge and skills required to navigate the complexities of contemporary life effectively. While primary, elementary, and secondary education are mandatory, higher education is optional. Pursuing higher education allows individuals to study subjects they are passionate about, which can enhance their career prospects and earning potential.

Higher education institutions are undergoing significant shifts in their educational approaches and operations. Several factors are driving these transformations. These academic institutions must restructure their educational and organizational accountability models to thrive. Through their research, Alenezi and M. (2023) emphasized that this restructuring will enable them to respond quickly and effectively to new challenges while fostering innovative ideas.

Today's students face various degree programs, subjects, and courses, mainly due to multiple reforms implemented at higher education institutions (König, C. M., Karrenbauer, C., & Breitner, M. H. 2023). Higher education worldwide is experiencing a noteworthy shift as a result of swift technological progress and ongoing disruptions over the past few decades. The traditional model of higher education, which primarily relied on in-person lectures, passive learning, and theoretical knowledge, is becoming increasingly misaligned with the needs and realities of the 21st century.

2.2.1. The Role of Higher Education in Modern Society

Roos, N., Sassen, R., & Guenther, E. (2023) indicated that higher education institutions are vital in promoting social responsibility and sustainable practices. The

revolution offers considerable benefits, such as improved productivity, sustainable development, and increased resilience. Colleges and universities play a crucial role in preparing upcoming professionals, which requires updating curricula and improving infrastructure.

According to Zheng, L., and Umar, N. (2024), higher education enhances knowledge and skills. It is more than just academic learning; it also provides students with opportunities to build personal and professional networks, which can offer essential social support throughout their lives.

Higher education institutions equip students to play significant university roles, including research, teaching, community service, and administrative responsibilities. They are also responsible for mentoring and cultivating their peers to shape the nation's future leaders through tertiary education (Adewale & Abdulsalam, 2017). Through their research, (Aloka and P. Omare (2024)) emphasized that higher education students are encouraged to expand their networks and communities within business, government, and social organizations. They can achieve this by participating in institutions and organizations that address social issues.

2.2.2. Challenges in Higher Education

Choosing the right higher education institution is crucial for shaping a student's academic journey and future career prospects. Several essential factors to decide include the institution's location, size, available majors, and overall reputation. Additionally, gaining experience in the field of interest benefits students' future careers and can help them discover passions while expanding their professional network.

However, today's university students are well-acquainted with AI technologies, such as ChatGPT and other tools (Chan, C. K. Y., & Hu, W. (2023)). There are challenges related to AI's limitations, ethical issues, plagiarism, and academic integrity concerns.

Diverse perspectives exist on how universities can foster student success, a key factor for long-term retention. Crawford and Tice, D. (2024) highlighted the importance of academic achievement, critical thinking, and student well-being for the success of first-year students.

The growing demand for a skilled workforce knowledgeable in information technology and data analytics complicates the integration of industry into educational programs. At the same time, global initiatives such as the Sustainable Development Goals emphasize the significance of education for sustainable development. Abulibdeh, A., and Zaidan (2024) stated that education cultivates a sense of accountability toward economic, environmental, and social welfare.

2.3. Artificial Intelligence

2.3.1. The History of AI

The beginning of artificial intelligence dates back to the mid-20th century, with prominent early thinkers like Alan Turing and John McCarthy establishing the foundation for modern progressive science.

In 1950, Alan Turing posed the question, "Can machines think?" in his renowned paper "Computing Machinery and Intelligence." He proposed the Turing Test to identify a procedure for this. John McCarthy then used the term "Artificial Intelligence" for the first time in 1956, marking the official start of AI as an academic field.

During the 1960s and 1970s, work based on symbolic processing contributed significantly to advancements in Artificial Intelligence (AI) technology. At the beginning of the 1980s, this progress led to the creation of expert systems, computer programs designed to solve problems similar to those of an expert professional in a particular field.

Nonetheless, the limitations of these early systems, particularly their heavy dependence on rule-based programming, resulted in a slowdown in AI known as the "AI winter." An AI winter refers to a phase in the development of AI research characterized by reduced funding and diminished interest.

In 1996, the team behind Deep Blue achieved a historic milestone by creating a computer that won against world chess champion Garry Kasparov. This represented a breakthrough, as the computer triumphed over the top chess player in the world at the time. The team's accomplishment was featured in the magazine Machine Intelligence Beats Human Intelligence, which highlighted the advancements in machine intelligence, now referred to as artificial intelligence (AI).

The revival of artificial intelligence started in the late 1990s and early 2000s, fueled by the rise of learning by machine, a subset of AI that concentrates on training machines with data. This transition was enabled by advancements in computational power and the accessibility of large datasets. As a result, enhancements in neural networks and deep learning further accelerated the growth of AI, allowing for the creation of models that can execute intricate tasks like image and speech recognition.

During the early 2000s, artificial intelligence saw considerable progress with the emergence of machine learning methods, including support vector machines and deep learning, which contributed to the evolution of algorithms (Russell & Norvig, 2016). Furthermore, there were significant advancements in robotics and automation, illustrated by products like the iRobot Roomba, as well as progress in programming autonomous vehicles, highlighted by initiatives such as DARPA's Grand Challenge (Lin & Goodrich, 2009; Thrun et al., 2006).

Between 2016 and 2020, AI experienced numerous surprises, including a rise in natural language processing driven by transformer models like BERT and GPT-3, as well as enhanced AI's ability to understand and produce human language (Devlin et al., 2018; Brown et al., 2020). By 2023, the capabilities of AI and its potential to create value for enterprises were profoundly transformed by the advancements in large language models, or LLMs, such as Chatbot.

2.3.2. AI in Education

Integrating Artificial Intelligence (AI) into education has led to a revolutionary period, altering conventional teaching and learning approaches. The fusion of AI and education seeks to meet individual requirements, improve student involvement, and elevate educational results. Personalized learning, facilitated by AI algorithms, customizes educational experiences to fit each student's needs, preferences, and learning pace.

AI-driven educational technology extends far beyond the limits of traditional classrooms. It encompasses a range of innovative online platforms that support personalized learning journeys, allowing students to advance at their own pace. Furthermore, virtual reality (VR) provides immersive experiences where learners can participate in interactive simulations, deepening their comprehension of intricate concepts in subjects like science and history. Interactive resources, such as intelligent

tutoring systems and gamified learning applications, enhance the educational experience by offering immediate feedback and promoting engagement. Ayeni and Al Hamad (2024) noted that collectively, these technologies establish a dynamic and adaptable learning environment that caters to each student's needs, equipping them for a fast-changing world.

2.3.2.1. AI in Higher Education

AI technologies have become integral to our daily activities, with education being a key sector that leverages these advancements. Contemporary teaching methods that integrate AI greatly improve the learning experience, encouraging students to engage in independent thinking and fostering their passion for acquiring knowledge.

These advancements are crucial in developing essential competencies and skills, facilitating a deep comprehension of knowledge and its practical applications. Furthermore, contemporary methods significantly improve educational efficiency, align seamlessly with state academic standards, and ensure high-quality education. Sultanova, O., & Sadullayev, S. (2024) indicated that the widespread adoption of these modern technologies in education highlights their transformative impact on learning around the globe.

2.3.2.2. AI Impacts on Higher Education Students

Artificial Intelligence (AI)—systems that identify and gather information from their surroundings and analyze it to address calculations or intricate issues—constitutes a crucial area for economic growth and an essential element of the Digital Agenda. Nevertheless, the EU's High-Level Expert Group on Artificial Intelligence (AI HLEG) acknowledges that while presenting significant benefits, AI systems also pose specific risks that need to be managed effectively and proportionately (European Commission, 2019). Consequently, it is vital to invest in education to foster technological advancement and ensure that new generations of professionals can develop technology that aligns with societal values. Therefore, Aler Tubella, Cantallops, M., & Nieves, J. C. (2024) emphasize that higher education should be responsible for equipping young individuals with advanced skills for program applications, preparing all students to comprehend the impact of AI, and promoting its ethical application.

2.3.2.3. AI Impacts on Higher Education Teachers

Artificial intelligence quickly transforms many fields of society, especially education. Uygun and D. (2024) indicated that, given AI's potential to alter teaching methods fundamentally, it is essential to understand educators' perspectives on this innovative technology. The arrangement of education in today's world demands that educators possess extensive knowledge and strong teaching skills, be familiar with diverse instructional methods, and continuously strive for self-improvement.

Technology can impact pedagogy, teaching methods, and evaluation. This has sparked worries and inquiries in the educational field regarding how teachers can provide students with abilities to utilize the newest technology to prepare them for the future while addressing possible shifts in teaching practices. (Bell, R., & Bell, H. (2023).

Nevertheless, several educators have voiced apprehensions about integrating AI into the educational sphere, particularly regarding the possibility of fostering an emotionally sterile environment, concerns about security and privacy risks, and the chance of making individuals complacent. Furthermore, there are doubts about how AI might affect the roles of teachers, ethical ramifications, and the risk of hindering the cultivation of a curious mindset**. (**Uygun, D. (2024)).

It has been noted that when new technologies challenge traditional educational practices, discussions and debates frequently occur, as educators must assess and adjust their teaching methods (Rasheed, A., & Qadir, J. (2022)). Despite ongoing requests for increased integration and the incorporation of artificial intelligence into the curriculum, scholarly conversations surrounding this issue are still in their preliminary stages, and educators have not yet fully tapped into the possibilities that artificial intelligence offers in teaching and learning environments. (Bell, R., & Bell, H. (2023).

2.4. Entrepreneurship in Higher Education (EE)

Entrepreneurship education (EE) is crucial for a successful learning journey that aligns with the needs of the workplace. It enhances students' engagement in the ever-changing business world and their understanding of strategic thinking. EE equips individuals with the knowledge and skills to seize opportunities (Li et al., 2023).

Numerous colleges and educational institutions provide foundational courses in entrepreneurship to assist students in starting their ventures, comprehending changes in uncertain environments, and seizing lucrative opportunities (Iwu et al., 2021).

Entrepreneurship is often regarded as a vital catalyst for social and economic advancement. In particular, individuals with solid background knowledge of increased entrepreneurial awareness, skills for identifying opportunities, motivation for entrepreneurship, and a definitive intention to establish businesses exhibit a higher level of entrepreneurial engagement. Specifically, students who participate in entrepreneurship education are more likely to utilize their existing knowledge and awareness to explore new business possibilities and channel their motivation towards launching new enterprises than their counterparts.

This educational approach to entrepreneurship (EE) frequently involves incorporating entrepreneurship courses into academic programs, conducting workshops, and offering resources for aspiring business owners. Additionally, numerous governments have initiated programs that provide mentorship, funding access, and business incubators, all aimed at nurturing a vibrant entrepreneurial ecosystem. These nations promote economic development, job creation, and innovation by promoting such an environment.

2.4.1. Entrepreneurial Skills in Higher Education

Education in entrepreneurship is crucial in influencing personal characteristics. Studies show that students in entrepreneurship classes cultivate improved abilities (Adeel, S., Daniel, (2023)), including creativity, innovation, and problem-solving when recognizing opportunities and utilizing their existing knowledge. Additionally, these students align their innovation, creation, communication, and motivations more effectively when initiating new business ventures.

Entrepreneurship courses give students the abilities and mindset necessary to generate value in entrepreneurial ventures. The impact of creativity skills gained by students in an entrepreneurship course on innovation results encompasses self-assessments of creativity, perceived support from their team, and the tangible innovations created by their team and organization.

2.4.2. Transformation in Entrepreneurship Education

Education that prioritizes only academic success is no longer sufficient. It must also inspire the development of entrepreneurial skills, empowering higher education students to thrive in the dynamic world of work. Recognizing the power of education in shaping an entrepreneurial mindset in youth is crucial.

M. I. S. & Rijal, S. (2023) indicated that our ultimate mission is to offer transformative educational policy guidelines that will equip future generations to navigate and conquer economic challenges ahead.

2.5. Intersection of AI, Education, and Entrepreneurship (AIEE)

Innovative developments in artificial intelligence have transformed the educational environment. AI has been smoothly incorporated into entrepreneurship education, utilizing advanced technologies such as AI-driven simulations, ChatGPT, machine learning, and big data. These robust tools are intended to assist learners and enhance students' comprehension and capabilities in entrepreneurship. Around the world, a diverse range of research methodologies, including qualitative research, quantitative studies, and systematic reviews, have been successfully utilized to investigate the effects of AI in education.

Moreover, debates about neural networks and various machine learning technologies in entrepreneurship education are attracting considerable attention.

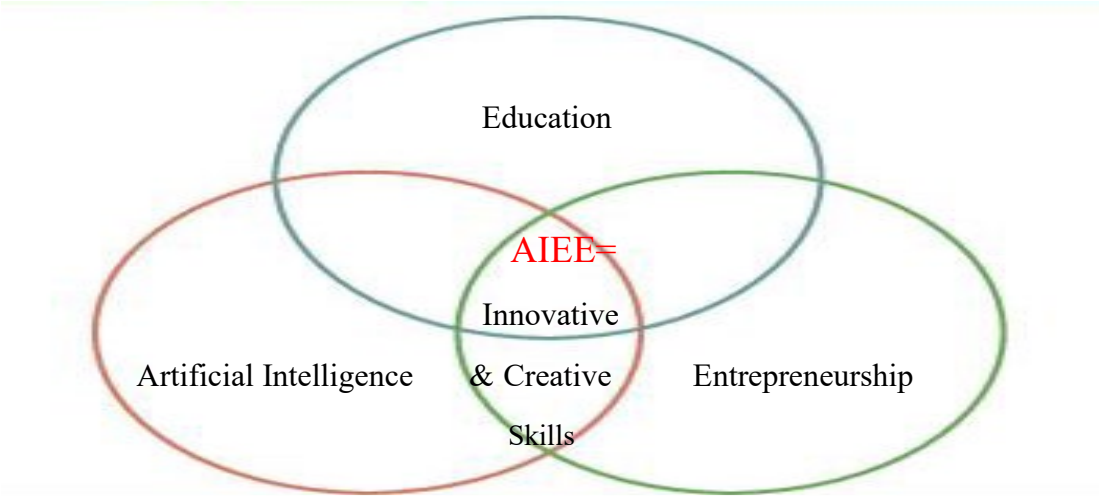


Figure 1. AIEE: Artificial Intelligence –Entrepreneurship - Education

The rise of AI in education is a positive advancement, and its ability to transform the learning experience is quite hopeful. As noted by Alnaqbi, J., & Alnaqbi, S. (2024), the ongoing evolution and deeper integration of AI in teaching can enhance the capabilities of both educators and students, creating a more engaging and enriching learning atmosphere.

2.5.1. The Role of Higher Education in Supporting AI Entrepreneurship

Universities and colleges are vital in responding to the needs of the AI age. To effectively prepare students for this rapidly evolving field, these institutions must continuously update their entrepreneurship education programs. The following points discuss ways in which higher education can modify entrepreneurship courses to better align with the needs of the AI landscape, cultivating entrepreneurs with a diverse skill set and practical abilities. This approach helps students tackle challenges in their professional development and promotes the innovative use of AI technology in society.

- Adjustments to the curriculum in higher education are essential for advancement and creativity.

- Modifying entrepreneurship courses to align with the requirements of the AI-driven landscape.

-Entrepreneurship education courses must include crucial AI concepts.

Students must profoundly comprehend the concepts and tools of AI. This understanding will empower them to utilize AI technology successfully in entrepreneurial pursuits, thereby playing a crucial role in boosting innovation and competitiveness in entrepreneurial initiatives. Consequently, higher education's capacity to maintain current and relevant course material to satisfy the AI industry's changing needs is essential to entrepreneurship education's success.

2.5.2. AI on Entrepreneurship Education (AIEE)

We explore utilizing large-scale data and artificial intelligence (AI) in higher education research to prepare graduate students for future entrepreneurship. Using AI in the classroom can be considered acceptable when it fits the curriculum, helps students reach their objectives, and improves their entrepreneurial abilities.

Through their research, Mu, Q., & Zhao, Y. (2024) stated that Learners can implement AI technology in real-world business contexts, enhancing their

comprehension of the field through active involvement in addressing real-life challenges. This hands-on learning method strengthens their theoretical understanding. It develops the necessary skills and experience for genuine entrepreneurial activities, enabling them to navigate the intricate and ever-changing business landscape more effectively.

In today's fast-changing world of technology, the incorporation of AI has become more common. As such, it has become imperative to develop educational courses specifically tailored to meet the needs of aspiring entrepreneurs in this AI-driven era.

AIEE should prioritize delivering practical and business-focused skills vital for managing the challenges and opportunities that AI brings to the business landscape. Additionally, higher education entrepreneurship programs should highlight the cultivation of innovative thinking to succeed in the AI-driven age. This involves motivating students to leverage AI technology to address real-world issues. By fostering innovative thinking, students can utilize AI technology more efficiently, enabling them to address obstacles faced during their entrepreneurial ventures. Furthermore, entrepreneurship education should assist students in devising creative business models and recognizing new opportunities through AI technology.

Figure 2. Business Innovation

Enhancing innovative thinking empowers students to comprehend the business possibilities of AI technology. It prepares them with the tools and viewpoints to uncover inventive entry points in a competitive market. Therefore, nurturing innovative thinking

is a crucial aspect of entrepreneurship education in higher education, providing vital support for learners to navigate the challenges of entrepreneurship in the age of AI.

2.6. Related Research

The growing integration of Artificial Intelligence (AI) in higher education highlights the pressing need to critically evaluate its effects on various aspects, such as ethical issues, social interactions, and educational outcomes in this field. As noted by Al-Zahrani (2024) in his exploration of AI's influence on higher education, it is crucial to examine how the rising prevalence of AI technologies in administrative roles, tailored learning experiences, and academic research affects the values and principles that guide educational institutions, along with the repercussions for student engagement, equitable access to resources, and overall educational quality. Gaining insight into the diverse impacts of AI will assist stakeholders in addressing the complexities and challenges that emerge as these technologies transform the educational landscape.

According to (Sîrghi, N. Voicu (2024), challenges of artificial intelligence in the learning process in higher education.), the adoption of artificial intelligence in higher education has grown substantially, accompanied by the creation of AI tools aimed at both students and leaders. These AI tools offer essential feedback to students regarding the next steps they should take, creating a personalized learning experience tailored to their profiles, learning goals, progress, or specific context. Other applications facilitate independent student learning through interactive games or assess student performance via computer-assisted evaluations in a completely transparent environment.

The integration of AI can significantly affect how prepared teachers are to include it in their educational practices (Neelambaram, B., Ganga, P. P., (2024). Redefining Higher Education Institutions with Artificial Intelligence). Concerns about data privacy and job security, categorized as perceived risk, shape educators' views on AI. Additionally, performance expectancy, which is the belief that AI will enhance teaching quality and student outcomes, along with effort expectancy, indicating the perceived simplicity of merging AI with current processes, are crucial factors to consider.

Numerous upcoming business ventures will necessitate those entrepreneurs to possess digital skills and a solid grasp of emerging technologies. Nevertheless, students

frequently do not have these crucial skills needed for digital entrepreneurship. (Bell, R., & Bell, H. (2023). Entrepreneurship education in the era of generative artificial intelligence) further supports this finding, suggesting that most students are unprepared for this landscape.

Using digital tools can enhance entrepreneurs' creativity and imagination, opening up new opportunities (Townsend, D. M., & Hunt, R. A. (2019). Entrepreneurial action, creativity, & judgment in the age of artificial intelligence. Journal of Business Venturing Insights, 11, e00126). Additionally, these tools can help entrepreneurs make better decisions based on more comprehensive data and informed reasoning Korzynski, P., Mazurek, G., Altmann, A., Ejdys, J., Kazlauskaite, R., Paliszkiewicz, J., ... & Ziemba, E. (2023). Generative artificial intelligence as a new context for management theories: analysis of Chatgpt. Central European Management Journal, 31(1), 3-13., making generative artificial intelligence a valuable resource for future entrepreneurs.

Entrepreneurship education is essential in promoting entrepreneurship and innovation. It develops essential skills, competencies, attitudes, behaviors, and mindsets. Such education prepares future entrepreneurs by equipping them with the knowledge and skills to initiate, build, and expand a thriving business.

According to the research conducted by (Yang, Lin, and Fan in 2022. Cultivation model of entrepreneurship from the perspective of artificial intelligence ethics), many students express those educational institutions should expand their course offerings to include a greater variety of experiential learning opportunities. These opportunities might include seminars encouraging in-depth discussions and critical thinking, internship courses providing practical work experiences, design courses fostering creativity and innovation, and experimental courses allowing for hands-on learning and exploring new ideas. Additionally, students advocate for the flexibility to choose courses across different colleges and majors within the institution. This more inclusive approach to course selection is essential for enhancing entrepreneurial skills and fostering a robust mindset among college students, ultimately preparing them for a dynamic job market and entrepreneurial ventures.

CHAPTER III

Methodology

3.1. Research Design

Qualitative research is exploratory research that seeks to understand situations based on the meanings people give them. The qualitative research approach has recently gained popularity in the social sciences. Özdemir (2010) suggested that qualitative research generates knowledge investigating the intricacies of social systems influenced by human actions and limitations. With an interdisciplinary and holistic viewpoint, qualitative research employs an interpretative method for problem analysis. The phenomena and events being examined are viewed within their context and interpreted according to their meanings. (Altunışık et al., 2010). The qualitative research approach allows researchers to modify their study's design and execution. It supports creating new methods and strategies, modifying the research structure, and adapting based on the situations faced at each stage. Additionally, a key benefit of qualitative research is its exploratory aspect, making it especially valuable for exploring and uncovering insights on subjects that have not been thoroughly investigated (Neuman, 2012).

The goal is to study things in their natural settings and explain them. This research used a qualitative method, which collected all participants' views and thoughts to understand the research topic better. The survey-based study used open-ended semi-structured questions to collect data from lecturers and students at Aden University. The participants will answer these questions through Google Forms, Whats App, Google Meet, and Zoom.

The study consists of questions divided into two sections. Section A is a demographic survey, and Section B contains 11 open-ended questions. The aim is to gather the lecturers' and students' views to gain insights into the studied topic.

3.2. Participants of the Study

The researcher employs qualitative approaches. The study involved 40 students and ten lecturers from three colleges at Aden University. An interview is developed to explore how AI enhances the students 'entrepreneurial skills.

This study conducted 11 open-ended inquiries, which consisted of semi-structured interviews, to know teachers' and students' ideas (Fidel, R. (1984))

Table 1. Participants Demography

Theme	f	%
Gender		
Male	22	44 %
Female	28	56%
Total	50	100%
Age		
20 – 25	38	76%
26 – 30	2	4%
31 – 35	0	0%
35 – 40	4	8%
Above 40	6	12 %
Total	50	100%
Nationality		
Yemenis	40	80%
Syrian	3	6%
Egyptian	2	4%
Indian	2	4%
Pakistani	1	2%
Palestinian	2	4%
Total	50	100%
Occupation		
Teacher	10	20%
Student	40	80%
Total	**50**	**100%**

The demographic analysis indicated that a thorough study was carried out across various departments. The participants were from various nations: 80% were Yemenis nationals, and the remaining 20% were from Syrian, Palestinian, Egyptian, Pakistani, and Indian backgrounds, as detailed in Table 1, along with their associated frequencies and percentages.

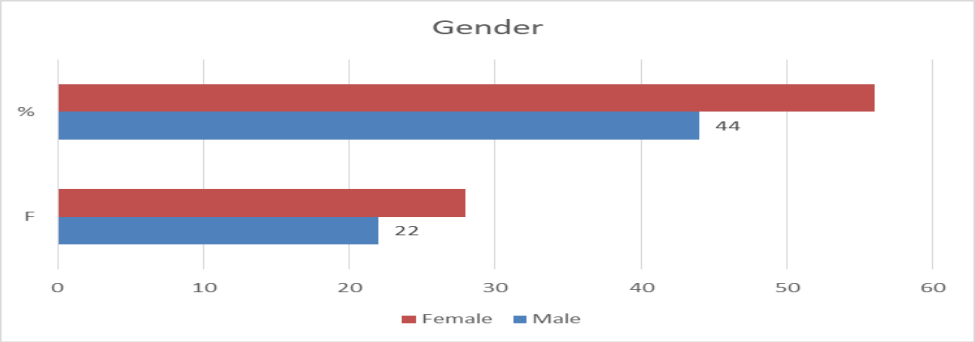


Figure 3. Gender

According to Figure 3, 10 educators and 40 students from 3 colleges were examined, with 44% identifying as male and 56% as female.

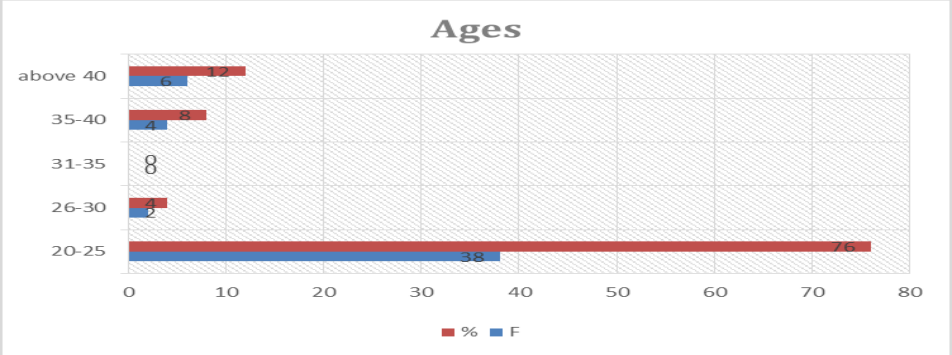


Figure 4. Ages

According to Figure 4, it was discovered that 76% of respondents were between the ages of 20 and 25, while 4% of the educators and students interviewed were aged 26 to 30. Furthermore, 8% were in the 35 to 40 age range, and 12% were older than 40.

3.3. Data Collection Tools / Materials

To collect study data via Google Meetings, one-on-one interviews were conducted between August 1st and October 15th, 2024. The interview is the most effective method to obtain information about people's perceptions.

As part of the research, students at Aden Universities will be interviewed for 20-30 minutes each to collect evidence and assess the effectiveness of utilizing artificial intelligence (AI) and entrepreneurial skills in higher education. The evidence will be how AI and entrepreneurial skills change higher education, and the ramifications for teachers and students will be discussed.

This study uses the qualitative method. The interview form's initial section asked questions to determine the participants' demographic details. The following section included 11 open-ended questions aimed at collecting the perspectives of higher education students and their instructors regarding the effects of implementing Artificial Intelligence and entrepreneurial skills.

3.4. Data Collection Procedures

To collect study data via Google Meetings and Zoom, one-on-one interviews were conducted between August 1st and October 15th, 2024. The interview is the most effective method to obtain information about people's perceptions. The qualitative data were examined using New Microsoft Excel through a content analysis approach.

As mentioned, the online interviews took place via Zoom and Google Meetings. After obtaining consent from the participants, audio recordings will ensure the accurate capture of their responses before they are transcribed. The interviews will be transcribed verbatim for further analysis. After each interview, the participants expressed gratitude for their time and were advised to email the researcher if they had any concerns regarding the process. This approach confirmed that all 50 participants felt content with the information provided on the topic under investigation.

As part of the research, students at Aden University will be interviewed for 20-30 minutes each to collect evidence and assess the effectiveness of utilizing artificial intelligence (AI) and entrepreneurial skills in higher education. The evidence will be how AI and entrepreneurial skills change higher education, and the ramifications for teachers and students will be discussed.

3.5. Data Analysis Procedures

A qualitative data analysis method called descriptive analysis is used to analyze the data. Each interview question is broken down into distinct topics, and the interview statements are directly used. Then, the opinions of the participants are categorized into associated topics.

This involves how data is displayed and processed, how the pre-and post-intervention results are accurately analyzed, and how the outcome is thoroughly described.

After collecting it, the researcher critically analyzes the data by observation and interview, noting the excellent work done and each respondent's responses.

3.6. Reliability & Validity

Qualitative research is intimately linked to human behavior and explores it dynamically rather than statically. In qualitative research, greater emphasis is placed on reliability, underscoring that consistency is influenced by external outcomes and the dependability of those who collect and interpret the data. The notion of reliability poses challenges for qualitative research.

The interview questions were sent to the experts for clarity, coherence, and grammatical correctness, and then we received approval to use these questions for

research purposes. The interview questions were also sent to the experts for fluency evaluation and were sent back to be utilized in the research.

The third section of the study, the methodology section, thoroughly describes the research framework, the demographic traits of the participants, the data-gathering process, and the steps involved in analyzing the data.

-The collected data, the methods used for gathering this data, the process of data analysis, the creation of codes, and the ways the researcher arrived at these data were all thoroughly detailed, along with the conduct of the interviews, the recording of the data, and the evaluation of the results.

It offers comprehensive information regarding the execution of the interviews, the recording of the data, and the methods used to integrate and present the results.

The interview procedures, including question preparation, are grounded in guidelines sourced from the literature on qualitative research. These procedures were formulated based on the study's primary research questions, evolving from a thorough review conducted throughout the research timeline. On the other hand, the procedures are tightly linked to the research questions that are explicitly defined in the studies being analyzed.

CHAPTER IV

4.1. Findings

This study's data was obtained through semi-structured interviews. A semi-structured interview aims to elicit individual responses regarding a particular scenario or event participants have witnessed. The semi-structured interviews involved ten lecturers and forty students. It employs a fairly comprehensive interview guide or schedule. Details about the ten lecturers and forty students are presented in the first table. The researcher reviewed the data multiple times to understand the participants' answers more deeply. The interviews were listened to and cross-referenced with other data. This section will examine the findings from all the data gathered for this study. The researcher included direct quotes from the participants to guarantee the precision of the information in this section. These quotes are italicized and tagged from S1 to S40 for students and T1 to T10 for teachers.

Table 2. Perspectives on Artificial Intelligence

Theme	f	%
A. student		
Artificial Intelligence boosts enthusiasm for acquiring knowledge.	39	37.5%
The application of AI in educational settings has steadily increased over time.	20	19.2%
AI can analyze extensive amounts of information generated by students.	35	33.6%
B. Teacher		
The shift toward digital learning in education means that teachers' roles will become less important.	4	3.8 %

Artificial Intelligence is set to transform the way teaching is approached.	8	7.6%
Total (teacher+ students)	104	100%

Table 2 presents the distribution of frequency and percentages of teachers and students in the study group regarding their views on artificial intelligence. The findings reveal that 37.5% of students believe that "Artificial Intelligence enhances enthusiasm for learning," while 19.2% claim that the use of AI in educational environments has been gradually rising. Additionally, 7.6% of instructors have noted that "Artificial Intelligence is poised to revolutionize teaching methods." Meanwhile, 3.8% indicated that "The shift towards digital education suggests that the importance of teachers will decrease."

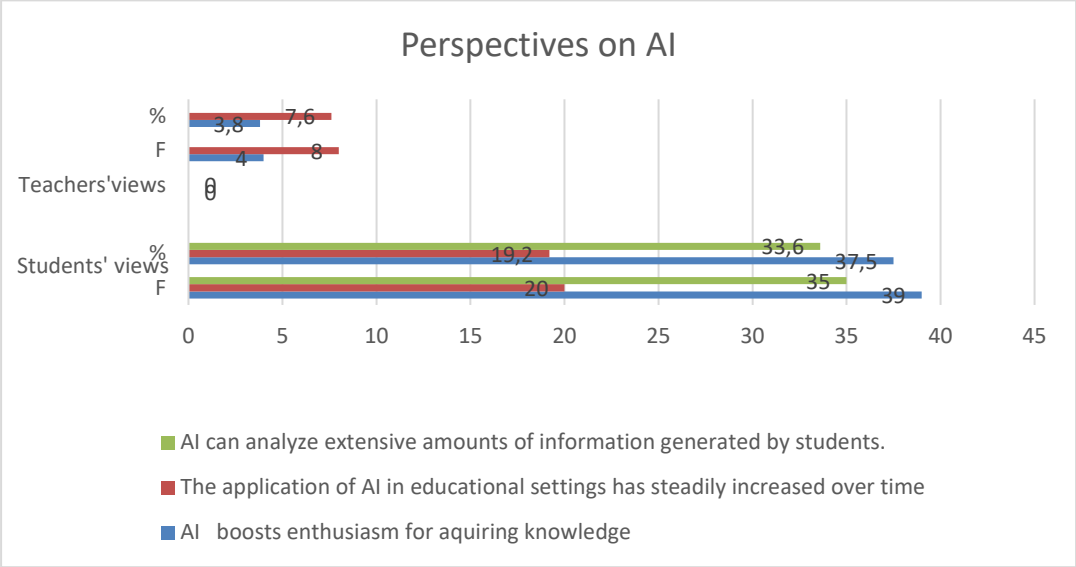


Figure 5: Perspectives on Artificial Intelligence

It shows the participants' perspectives about AI: "What do you think Artificial Intelligence is?"

As shown by these replies, interviews indicated that students and teachers have different perspectives on AI.

"Artificial Intelligence has the capability to assess large volumes of data produced by students." (S23)

".Artificial Intelligence significantly motivates the pursuit of knowledge." (S31)

"Artificial Intelligence is poised to revolutionize the methods used in education." (T10).

Table 3. AI is crucial in the learning and teaching process

Theme	f	%
A. student		
Artificial Intelligence serves as the primary solution for addressing all our challenges.	29	32.2%
AI is an assistant tool that helps us to do some of our tasks.	38	42.2%
AI is not essential to doing our assignments or tasks.	9	10%
B. Teachers		
Artificial Intelligence is the primary tool that helps our students, and we work in alignment efficiently.	9	10%
Artificial Intelligence makes our students depend totally on it and not use their abilities.	5	5.5%
Total (teacher+ students)	90	100%

Table 3 displays the frequency and percentage distribution of teachers and students within the study group concerning how crucial artificial intelligence (AI) is in the education system. The data indicates that 42.2% of students perceive AI as an assisting tool that facilitates completing various tasks, while 10% assert that AI is not essential for their assignments. Furthermore, 10% of lecturers have expressed that "artificial intelligence serves as the primary tool that supports our students, enabling us to work in alignment effectively." 5.5% of them indicated that "Artificial Intelligence makes our students depend totally on it and not use their abilities."

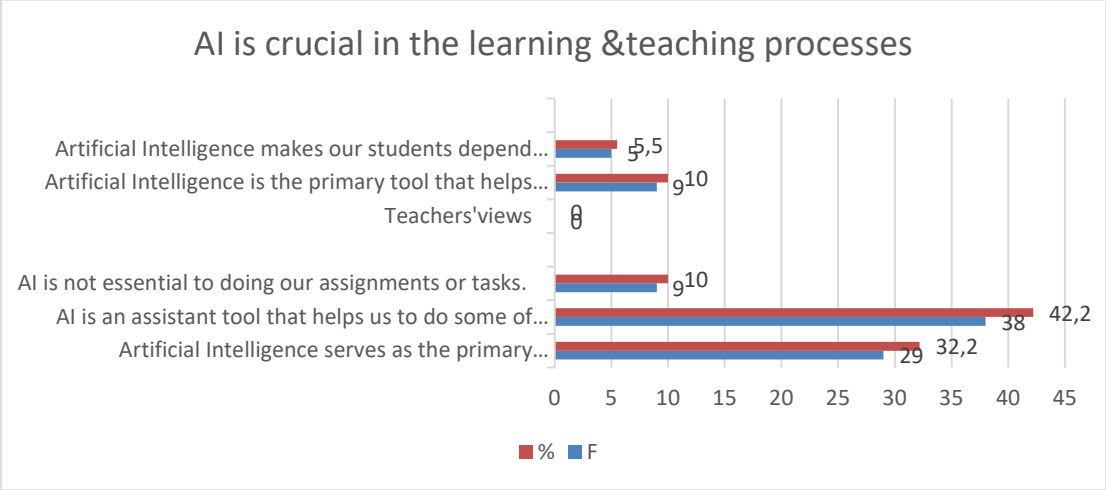


Figure 6. AI is crucial in the learning and teaching process

Discussions indicated that Artificial Intelligence is the primary resource enabling students and lecturers to collaborate effectively.

"Artificial intelligence serves as a helper that aids us in accomplishing certain tasks." S4

"Artificial Intelligence serves as the primary solution for addressing all our challenges." (S39)

"Artificial Intelligence is the primary tool that helps our students, and we work in alignment efficiently." (T3).

Table 4. AI plays a significant role in developing entrepreneurial skills

Theme	f	%
A. students		
Artificial intelligence can potentially provide students with highly accurate information about entrepreneurship.	35	43.7
AI makes learning ENP easier and more effective.	25	31.2
I do not believe that AI can improve our innovative skills.	10	12.5

B. Teachers		
I believe that AI helps educators to create successful entrepreneurs.	8	10
Teachers should not encourage students to use AI to enhance entrepreneurial skills.	2	2.5
Total (teacher+ students)	80	100

Table 4 views ".**AI plays a significant role in developing entrepreneurial skills.**" When sub-themes are examined, the sub-theme of students (43.7%) agrees with the first theme, "Artificial intelligence can potentially provide students with highly accurate information about entrepreneurship." The second theme, "Teachers should not encourage students to use AI to enhance entrepreneurial skills." is the least reported opinion (2.5%).

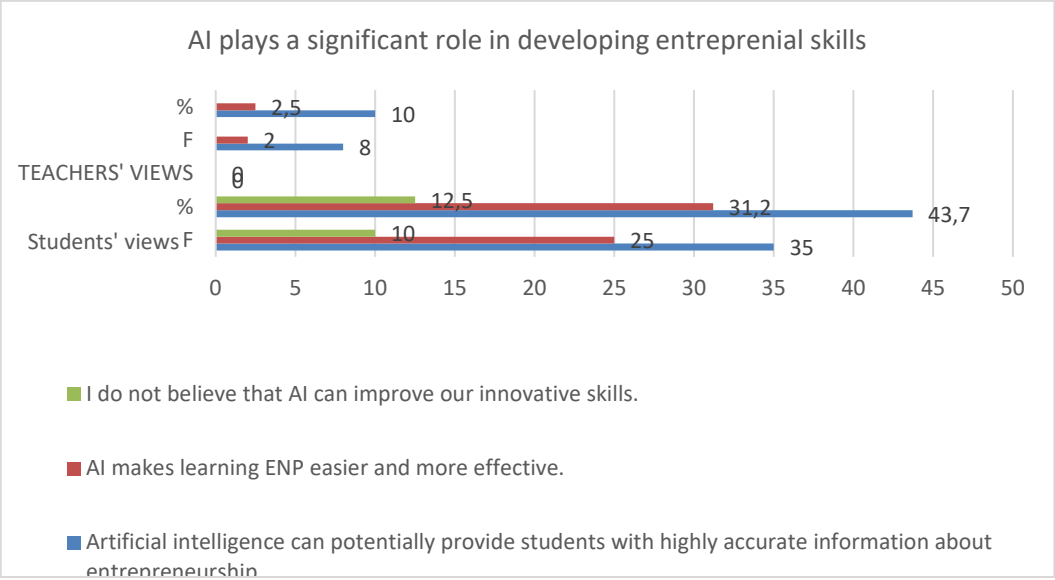


Figure 7: AI plays a significant role in developing entrepreneurial skills

The teachers and the learners are asked about the impact of artificial intelligence on improving entrepreneurial abilities.

"I contend that AI might restrict our creative potential instead of boosting our innovative abilities." (S6)

"Artificial intelligence has the potential to offer students accurate information regarding entrepreneurship." (S15)

"I assert that artificial intelligence supports educators in cultivating successful entrepreneurs." (T9)

Table 5: Educators use methods or strategies to enhance the entrepreneurial skills of highly educated students at your university

Theme	f	%
A. student		
I believe that learning ENP requires creative, specific techniques.	31	39.7%
Traditional methods adversely affect the attainment of ENP.	26	33.3%
B. Teachers		
I should use various strategies to improve students' innovative and creative skills in higher education.	10	12.8%
Solving problems, critical thinking, and brainstorming should be activated in the lectures.	9	11.5 %
Reading, writing, and research are sufficient to enhance students' entrepreneurial abilities.	2	2.5%
Total (teacher+ students)	78	100%

The research analyzed the frequency and percentage of students' views on how educators can apply methods or techniques to enhance the entrepreneurial skills of higher education students. 39.7% of the students concur that “learning ENP necessitates creative, specific techniques." In comparison, 33.3% believe that “traditional methods negatively impact the achievement of ENP.” Conversely, the sub-theme "Reading, writing, and research suffice to improve students' entrepreneurial skills" received the least responses (2.5%).

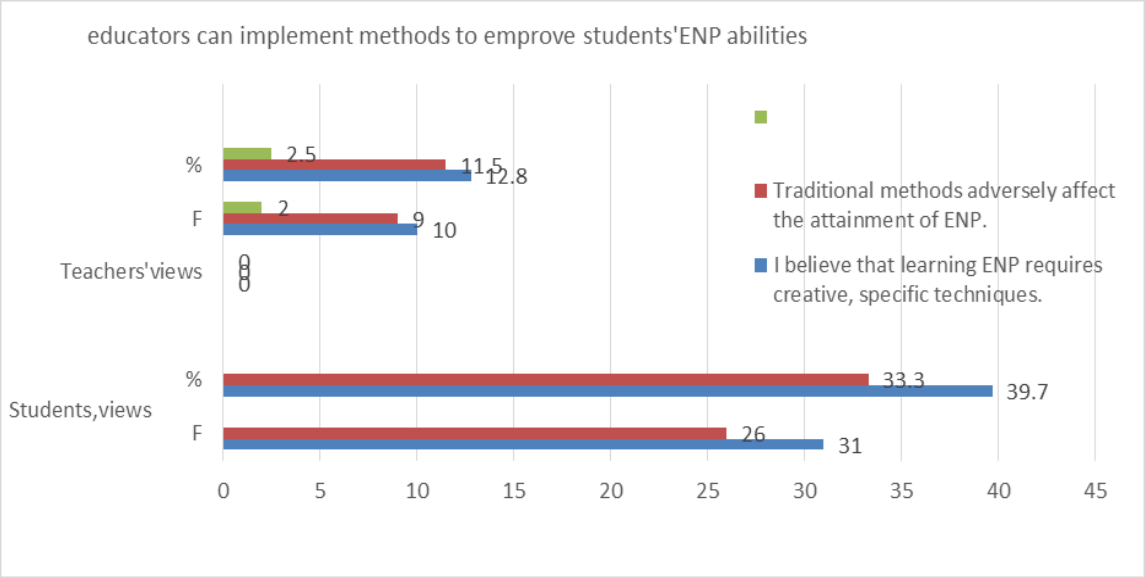


Figure 8. Educators can implement methods or techniques to improve the entrepreneurial abilities of high-education students

Interviews indicated that mastering ENP requires innovative and specific methods for teaching and learning in higher education settings.

"I think that acquiring ENP demands innovative and particular methods." (S22)

"Traditional methods adversely affect the attainment of ENP." (S17)

"Engaging in problem-solving, applying critical thinking, and encouraging brainstorming should be promoted during the lectures." (T5).

Table 6. Disadvantages of incorporating AI into the education of highly educated students and its potential negative impact on their entrepreneurial abilities

Theme	f	%
A. student		
We should be more aware of utilizing AI while performing our tasks.	31	39.2%
I am not convinced that AI can assist us in enhancing our entrepreneurial abilities.	20	25.3%
AI makes us wholly dependent on it, diminishing our capability to think and learn efficiently.	10	12.6 %

B. Teachers		
Artificial intelligence diverts students' attention away from creative learning.	8	10.1 %
We should regularly guide our students in using AI thoughtfully to improve their entrepreneurial abilities.	10	12.6 %
Total (teacher+ students)	**79**	100%

Table 6 offers a comprehensive analysis of participant perspectives regarding the potential drawbacks of incorporating artificial intelligence (AI) into the education of highly educated students, explicitly concerning its influence on their entrepreneurial capabilities. A thorough examination of the sub-themes reveals that 39.2% of students acknowledge the necessity of being more conscious about using AI tools in their academic tasks. This statistic indicates an increasing recognition of balancing technological advantages with active cognitive engagement.

On the other hand, the viewpoint that AI leads to a dependence that hinders critical thinking and effective learning received considerably less endorsement, with only 12.6% of students agreeing with this assertion. This suggests that apprehension about AI's potential to foster dependency is not a predominant concern among the student body.

In contrast, educators express distinct apprehensions regarding AI's impact on learning. Notably, a significant concern among teachers is articulated in the statement, "Artificial intelligence diverts students' attention from creative learning." This perspective garnered minimal support, with only 10.1% of teachers agreeing, indicating that they may not view AI as a significant barrier to promoting creativity in educational settings. Overall, these findings illuminate a complex landscape of perspectives on AI in education, reflecting a blend of caution and acceptance among both students and educators.

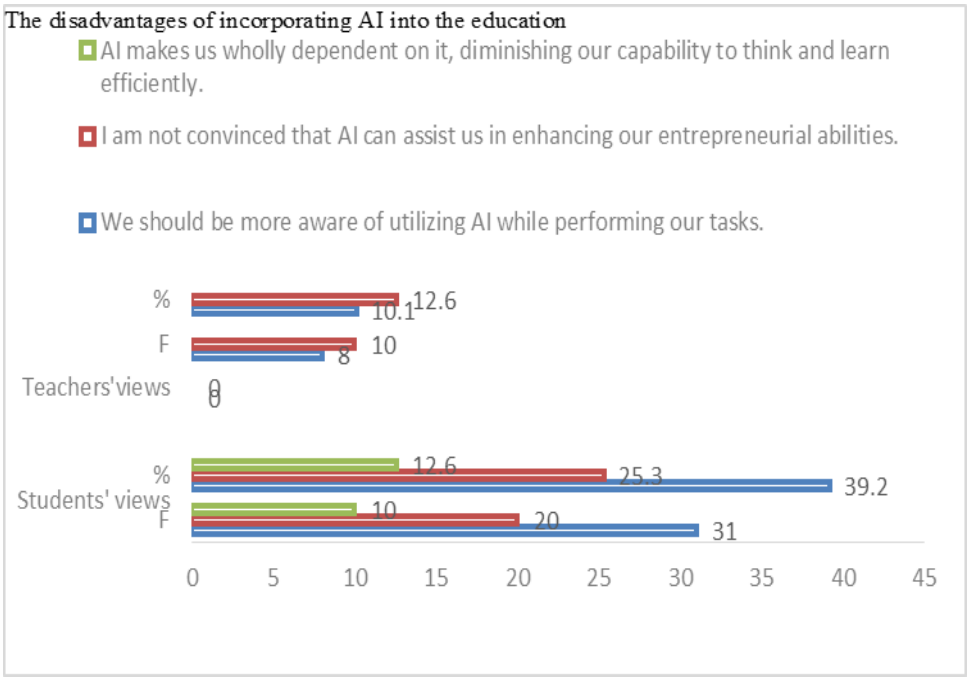


Figure 9. Incorporating AI into the education of highly educated students and its potential negative impact on their entrepreneurial abilities

Interviews revealed that students need to be more conscious of incorporating AI into their work and should receive consistent guidance on using AI effectively to enhance their entrepreneurial skills.

"I am not sure AI can help improve our entrepreneurial skills." (S1)

"Artificial intelligence leads to complete reliance on it, reducing our ability to think and learn effectively." (S5)

"We ought to consistently assist our students in using AI wisely to enhance their entrepreneurial skills." (T4).

Table 7. Learning Entrepreneurship Prepares higher education students for the workforce

Theme	f	%
students		
I believe that creativity and innovation are essential for all professions in the future.	21	23.3%

After graduation, entrepreneurial abilities require significant focus and increased practice to develop a successful entrepreneur.	32	35.5%
A successful entrepreneur must possess a distinctive personality and specific ability.	37	41.1 %
Total	**90**	**100%**

Table 7 highlights that the theme addresses the challenges and future opportunities associated with entrepreneurship research, indicating that successful entrepreneurs possess distinct personality traits and particular skills. This sub-theme garnered the largest share of responses, amounting to 41.1%. Conversely, the theme that received the fewest opinions (23.3%) from higher education students at Aden University was: 'I believe that creativity and innovation are essential for all professions in the future.

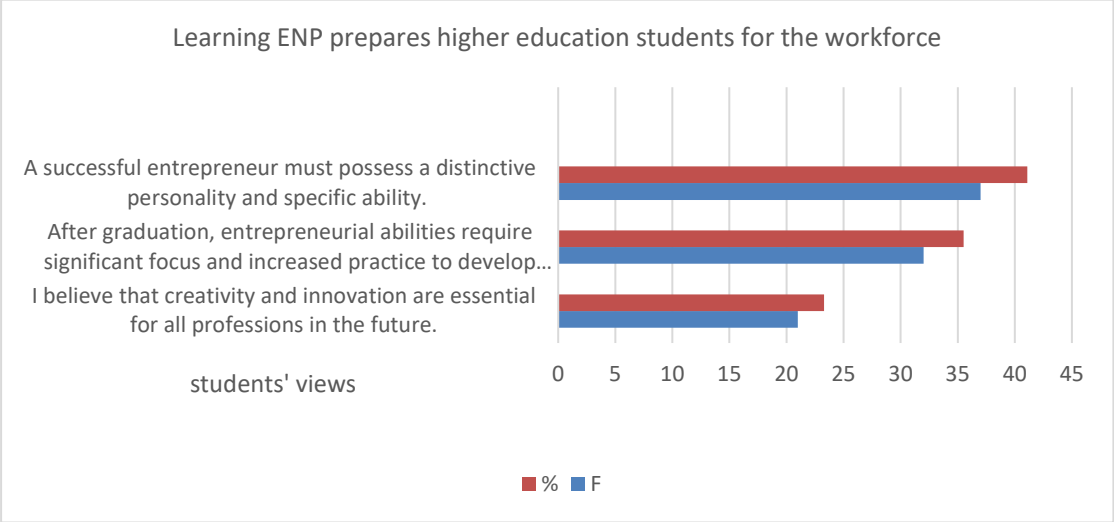


Figure 10. Learning entrepreneurship prepares higher education students for the workforce

Interviews revealed that developing entrepreneurial skills requires significant focus and regular practice to foster a successful entrepreneur. Furthermore, an effective entrepreneur must possess a distinct personality and specific abilities.

"Following graduation, one must dedicate considerable attention and engage in extensive practice to cultivate the skills necessary for becoming a successful entrepreneur." (S18)

"An effective entrepreneur must have a unique character and particular skills." (S24)

Table 8. Skills that students in higher education require and the benefits of ENP skills.

Theme	f	%
A. students		
I believe that entrepreneurship is essential for higher-educated students.	28	42.4
We do not need an entrepreneurship course. We can acquire the skills through experience."	19	28.7
Entrepreneurial skills are not required to become an entrepreneur after graduation."	7	10.6
B. Teachers		
Teaching ENP needs highly qualified teachers.	5	7.5
ENP is essential for both teachers and students.	6	9
Total (teacher+ students)	66	100

Similarly, Table 8 indicates that the second sub-theme connected to students, entrepreneurship, is crucial for students with higher education, garnering the highest percentage of responses at 42.4%. Conversely, the second sub-theme that received the fewest opinions (7.5%) among educators was that Teaching ENP requires highly qualified instructors.

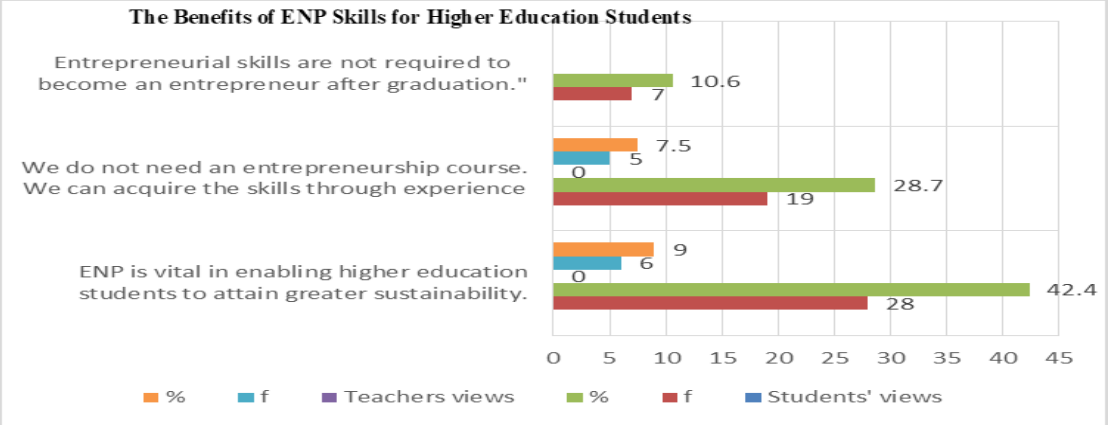


Figure 11. The Benefits of ENP Skills for Higher Educated Students

Figure 11 indicates the Benefits of Entrepreneurship Skills for Higher Educated Students. Interviews demonstrate that entrepreneurship skills provide significant benefits for higher-educated students. These skills enhance employability and equip graduates with essential innovative thinking and problem-solving abilities, ensuring they are well-prepared to tackle the challenges of the modern job market.

"We do not require a course on entrepreneurship. We can gain the skills through practical experience." (S9)

"Entrepreneurship plays a vital role in the education of students, as it equips them with essential skills and knowledge necessary for future employment. Students can better prepare themselves for the evolving job market by fostering an entrepreneurial mindset." (S21)

"The effective implementation of entrepreneurship depends on the skills of well-qualified educators." (T6)

Table 9. Teachers need to have the qualifications to train students to become successful entrepreneurs after graduation

Theme	f	%
A. student		
I think skilled educators assist their students in improving their creative skills.	38	40.8%
Entrepreneurial abilities are developed through the efforts of students rather than those of teachers.	20	21.5%
Educators in entrepreneurship classes often employ innovative techniques and imaginative teaching methods.	18	19.3 %
B. Teachers		
Educators must consistently adopt the latest teaching techniques.	10	10.7 %
Teaching ENP needs highly qualified teachers.	7	7.5 %
Total (teacher+ students)	93	100%

Table 9 presents the viewpoints on the statement, “Teachers must possess the qualifications to train students for successful entrepreneurship after graduation.” The different sub-themes indicate that a notable percentage of students—expressly, 40.8%—concur with the idea that “I believe skilled educators help their students enhance their creative abilities.” Conversely, the opinion on the second sub-theme, “Educators in entrepreneurship classes frequently utilize innovative strategies and creative teaching approaches,” received much less endorsement, with only 19.3% of students in agreement. In contrast, teachers show an apparent concern regarding the quality of instruction in entrepreneurship. The assertion that “Teaching ENP requires highly qualified educators” received the lowest degree of agreement, with merely 7.5 % of teachers supporting it.

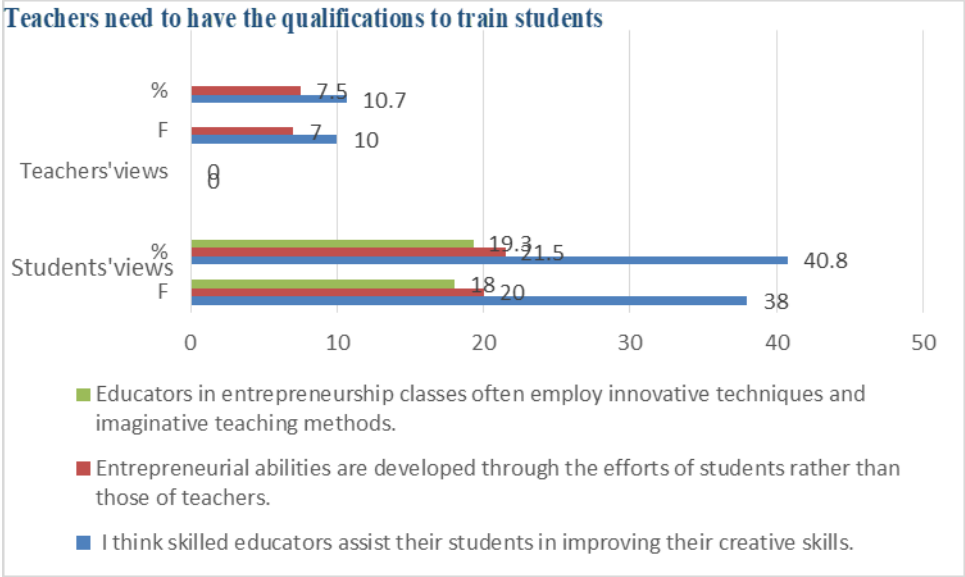


Figure 12. Teachers need to have the qualifications to train students to become successful entrepreneurs after graduation

Based on interviews, it was discovered that proficient educators help their students enhance their creative abilities, and instructors regularly utilize the most up-to-date teaching methods.

"The skills needed for entrepreneurship are cultivated by students' efforts rather than being instilled by teachers." (S12)

"I believe that talented teachers help their students enhance their creative abilities." (S35)

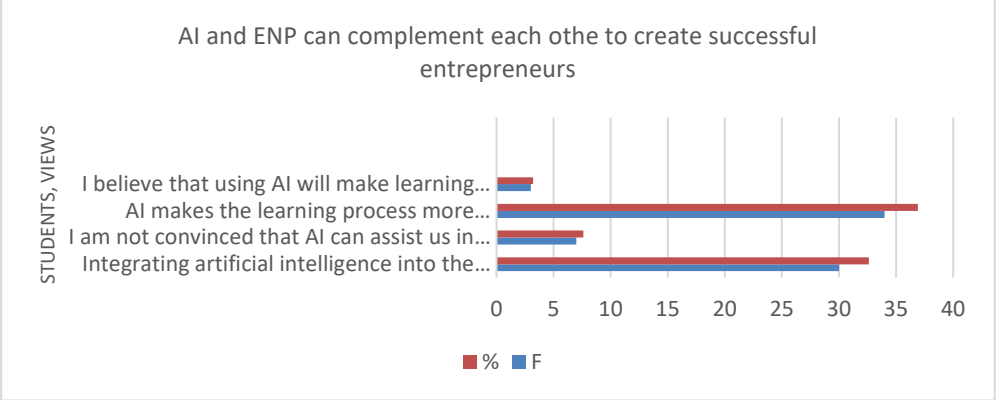
"Educators need to embrace and implement the most effective teaching strategies available continually." (T4).

Table 10. AI and entrepreneurship can complement each other to create successful entrepreneurs

Theme	f	%
A. Students		
Integrating artificial intelligence into the educational framework is essential	30	32.6
I am not convinced that AI can assist us in enhancing our	7	7.6

entrepreneurial abilities.		
AI makes the learning process more accurate and productive	34	36,9
I believe that using AI will make learning complex and distracting.	3	3.2
B. Teachers		
I believe that AI can make the teaching process smooth and more efficient	8	8.6
I am not convinced that AI enhances teaching effectiveness in entrepreneurial courses	2	2.1
I believe that AI can assist educators in achieving their goals in ENP courses.	8	8.6
Total (Students & Teachers)	92	100

Based on the data presented in table 10, four sub-themes associated with AI and entrepreneurship can complement each other to create successful entrepreneurs. The sub-theme with the most opinions recorded (36.9%) is that AI enhances the accuracy and productivity of the learning process. Conversely, the sub-theme "I am not convinced that AI enhances teaching effectiveness in entrepreneurial courses" had the lowest frequency of responses (2.1%).



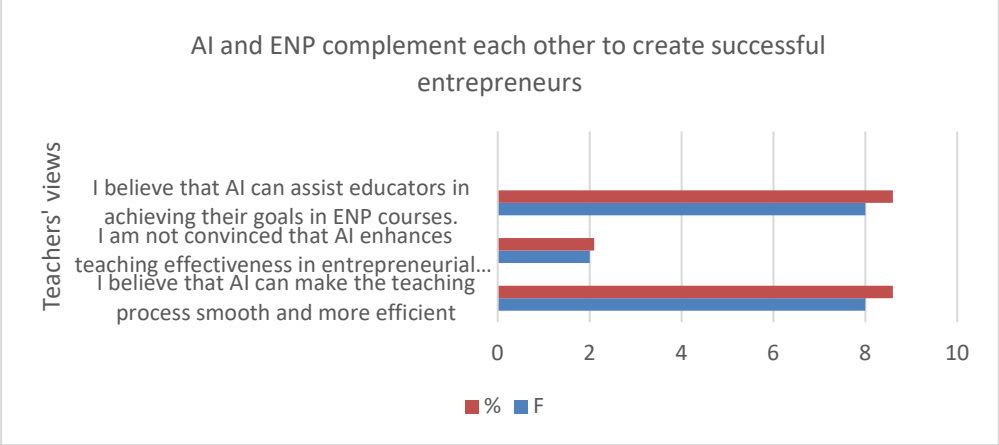


Figure 13. AI and entrepreneurship can complement each other to create successful entrepreneurs

"AI significantly enhances the learning process, ensuring it is precise and highly productive." (S3)

"Incorporating artificial intelligence into the education system is crucial." (S7)

"AI can help teachers accomplish their objectives in their classes." (T2).

Table 11. Challenges and future directions of studying entrepreneurship

Theme	f	%
A. student		
The curriculums and practical entrepreneurship are not related.	39	36.1%
I believe that all students in higher education should study entrepreneurship.	25	23.1%

I do not believe that the entrepreneurship course may create successful entrepreneurs in the future.	28	25.9%
B. teachers		
Teaching entrepreneurship requires well-qualified educators to identify both the strengths and weaknesses in students' abilities.	7	6.4 %
Applying various strategies according to the different levels of students is crucial.	9	8.3%
Total (teacher+ students)	108	100%

Table 11 illustrates the perspectives concerning the statement, "The challenges and future directions of studying entrepreneurship." An analysis of the various sub-themes reveals that many students—expressly, 36.1%—agree that "The curriculums and practical entrepreneurship are unrelated." This indicates a prevailing belief among students that there is a disconnect between theoretical learning and practical application in entrepreneurship.

Conversely, the sentiment regarding the second theme, which contends that "I believe that all students in higher education should study entrepreneurship," received considerably less support, with only 23.1% of students agreeing. This suggests a reluctance or lack of consensus on the necessity of universal entrepreneurship education within higher education programs.

In contrast, teachers express a distinct concern regarding the quality of entrepreneurship instruction. The notion that "Teaching entrepreneurship requires well-qualified educators to identify both the strengths and weaknesses in students' abilities" garnered the lowest level of

agreement, with just 6.4% of teachers supporting it. This finding underscores educators' importance of having skilled instructors who can effectively assess and cultivate students' entrepreneurial capabilities.

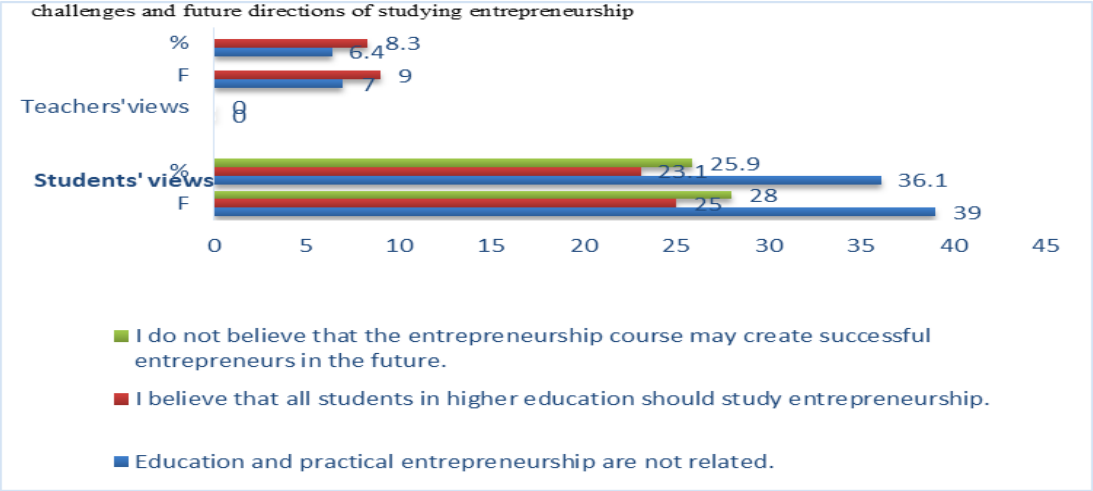


Figure 14. The challenges and future directions of studying entrepreneurship

Interviews showed there is no connection between education and real-world entrepreneurship.

"Education and practical entrepreneurship are distinct and not inherently linked." (S2)

"I think that every student in higher education ought to engage in the study of entrepreneurship." (S10)

"Teaching in entrepreneurship necessitates skilled teachers who can recognize the strengths and weaknesses in their students' capabilities." (T7)

Table 12. Creativity and Innovation Pose Pedagogical Challenges Among Students

Theme	f	%
A. student		
I can solve problems in a group not individually.	30	31.5%
I need more practice, including critical thinking and problem-solving, to enhance my entrepreneurial skills.	38	40%
I do not believe that innovative and creative skills improved by learning.	15	15.7%

B. Teachers		
Specific strategies and methods can improve students' innovative and creative skills in higher education.	8	8.4%
Some higher education students' innovative skills can be easily improved in the classroom, but others cannot.	4	4.2%
Total (teacher+ students)	95%	100%

Table 12 presents the views on the statement, "**Creativity and innovation pose pedagogical challenges and cause frustration among students**." When examining the sub-themes, 40% of students agree with the first theme: "I need more practice, including critical thinking and problem-solving skills, to enhance my entrepreneurial abilities." The second theme, "Some higher education students' innovative skills can be easily improved in the classroom, while others cannot," received the least support among the opinions expressed.

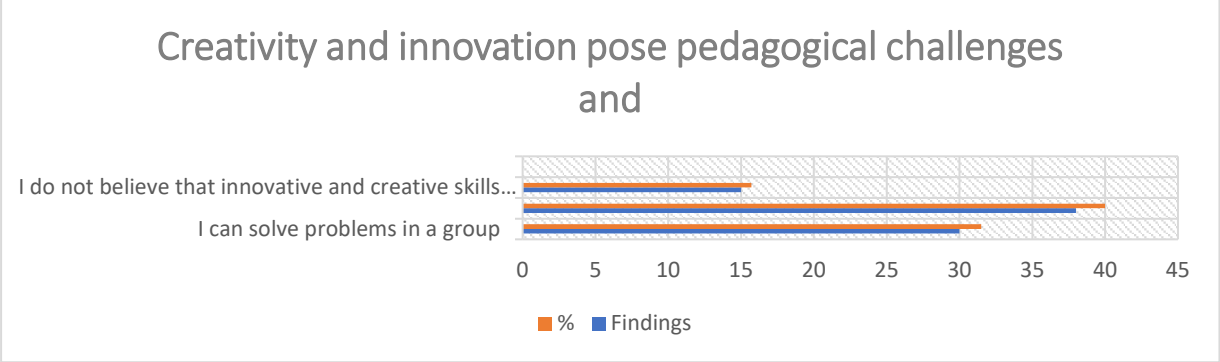


Figure 15. Creativity and innovation pose pedagogical challenges and cause frustration among students

As Figure 15 mentions, creativity and innovation pose pedagogical challenges among students**.** Interviews revealed that students require more hands-on experience, particularly in critical thinking and problem-solving, to improve their entrepreneurial abilities.

"We require additional practice, such as critical thinking and problem-solving, to improve our entrepreneurial abilities." (S37)

"I am not convinced that innovative and creative abilities can be enhanced through education." (S26)

"Targeted approaches and techniques can enhance students' abilities in innovation and creativity within higher education." (T8)

CHAPTER V

5.1. Discussion

This study explores how AI applications affect higher education students, particularly in entrepreneurship courses while addressing their benefits and challenges. The research focused on students' understanding and use of AI tools, lecturers' perspectives, and their perceived advantages and drawbacks in incorporating these tools into entrepreneurship classes.

The research is crucial in identifying the factors influencing academic success and enhancing the entrepreneurial abilities of Aden University's higher education students. The discussion is presented below, focusing on the qualitative method.

The researcher utilizes qualitative methods. The investigation included 40 students and 10 instructors from three colleges at Aden University. An interview was created to examine how AI improves students' entrepreneurial skills.

In this research, after the researcher prepared the interview form, it was finalized based on the views of teachers and higher education students. The researcher conducted the interviews one-on-one via Google Meetings and Zoom. The responses provided by the participants were recorded and analyzed using Excel software.

What do you think Artificial Intelligence is?

Based on this research investigation, 37.5% of university students feel that Artificial Intelligence increases their motivation to learn. Simultaneously, 19.2% of students in higher education acknowledge that the incorporation of AI in educational settings has gradually increased over time. Furthermore, 3.8% of educators in higher education feel that the transition to digital learning implies a diminishing significance of teachers' roles.

Artificial intelligence has the potential to serve as an educational resource that enhances teaching and boosts student performance by integrating AI systems and applications into the curriculum. This approach can heighten students' motivation to learn, fostering challenge, competition, and excitement while also considering their differences.

Furthermore, the extensive adoption of artificial intelligence, technology, and machinery has posed a danger to numerous individuals who are concerned about this swift and strong advancement. (Wardat, Y., Tashtoush, M., AlAli, R., & Saleh, S. (2024)).

How crucial is AI in the learning and teaching process?

Regarding the question, **"**How crucial is AI in the learning and teaching process?"

The response (36.9%) among higher education students is that AI enhances the accuracy and productivity of the learning process, indicating that AI is essential. Meanwhile, 8.6% of lecturers believe AI can make the teaching process smoother and more efficient.

The characteristic of AI is its widespread use of big data and deep learning. By leveraging big data, it enables more intelligent and accurate decision-making through the gathering, analyzing, and applying large datasets. (Mu, Q., & Zhao, Y. (2024).

In the education process, Artificial intelligence enhances the accuracy of evaluations while easing some instructors' responsibilities. Implementing AI in entrepreneurship education necessitates more sophisticated pedagogical frameworks for diagnosis, prediction, intervention, prevention, and recommendation. These frameworks should complement specific entrepreneurial learning materials and methods that align with entrepreneurial pedagogy. This implies that AI

has a beneficial effect on both lecturers and students within higher education institutions. The findings indicate that Artificial Intelligence is essential in the context of higher education.

Do you think AI plays a significant role in developing entrepreneurial skills?

This indicates that 43.7% of the students think that Artificial Intelligence has the potential to offer students exact information regarding entrepreneurship. On the other hand, 12.5% assert that AI cannot enhance their entrepreneurial abilities.

Digital learning can be viewed as a component of the ecosystem in modern higher education (Alenezi, M. (2023)). According to Maulida and Sudarno (2024), the effectiveness of entrepreneurship education for students can be achieved through experiential learning, tackling real-world problems, and utilizing practical skills within an entrepreneurial setting.

Digital skills include literacy, awareness, communication, creativity, and critical thinking. In today's digital age, it is essential for students, especially those aspiring to become entrepreneurs, to possess these skills. This is due to the strong connection between these competencies and entrepreneurship (Akhter et al., 2022; Mir et al., 2022; Triyono et al., 2023).

The research indicates that most students utilize AI-powered digital technologies to gather information. The study revealed that modern artificial intelligence technology can predict students' entrepreneurial behaviors and abilities to generate innovative ideas that lead to pioneering businesses.

What strategies can teachers use to enhance the entrepreneurial skills of highly educated students at your university?

The students' reply recorded 39.7% that learning ENP requires creative, specific techniques. Moreover, 12.8 % of higher education teachers believe that teachers should use various strategies to improve students' innovative and creative skills in higher education.

The arrival of information, enhancing skills and communication technologies to the educational atmosphere has led to the development of teachers' digital competence and entrepreneurial skills, which is one of the educational challenges teacher training has to face. Garzón Artacho, E., Martínez, . (2020). The use of AI technology in entrepreneurship education is widespread from a learning perspective. By utilizing various creative, innovative, and technology-driven teaching methods, instructors can enhance student engagement and enrich their learning experience. The abilities of

instructors and the quality of entrepreneurship education significantly impact students' entrepreneurial goals.

Entrepreneurship education and lecturers' competencies positively and significantly influence students' entrepreneurial intentions.

What are the disadvantages of incorporating AI into the education of highly educated students, and what is its potential negative impact on their entrepreneurial abilities?

The finding shows that 39.2%of the students agree," We should be more aware of utilizing AI while performing our tasks". Moreover, 25.3% believe" ,I am not convinced that AI can assist us in enhancing our entrepreneurial abilities ".12.6% of the lecturers agree, "We should regularly guide our students in using AI thoughtfully to improve their entrepreneurial abilities".Therefore, it can be said that AI is essential for higher education students because it assists them in the learning process.

The study also points out that it can have positive and negative effects as a double-edged sword that could result in only superficial learning if misused (Yan, W., Nakajima, T., & Sawada, R. (2024)). It highlights key risks and limitations, such as concerns about privacy, variations in culture, levels of language proficiency, and ethical considerations, which need to be appropriately managed.(Wang, T., Lund, , Z. A., & Pange, J. (2023).

Leveraging AI can have adverse effects, especially when improving entrepreneurial skills. It is essential to understand that AI is not a universal answer and must be applied to suit students' distinct needs and capability differences. (Wang, T., Lund, B. D., & Pange, J. (2023))

Moreover, it is essential to recognize that AI should not replace human teachers, intellect, or capabilities; instead, it should serve as a tool to support and improve their skills and efforts.

To what extent does learning entrepreneurship prepare higher education students for the workforce?

Based on this research question, 41.1% of students in higher education think that a successful entrepreneur must possess a particular personality and skills. Meanwhile, 23.3% of higher education students concur that they believe creativity and innovation are crucial for all future professions.

Numerous empirical studies have demonstrated the significance of entrepreneurship in creating job opportunities (Al-Alawi et al., 2022). Entrepreneurship education is a vital component of an effective learning experience that meets workplace demands (Alqahtani, M., 2023). Beyond its conceptual framework, entrepreneurship education is practically implemented by encouraging students to form entrepreneurial groups. This approach allows them to explore and evaluate the knowledge they have gained in real-world scenarios (Rafiana, N. N., 2024).

In addition, Iwu et al. (2021) asserted that entrepreneurial education is the initial step in enhancing a project's likelihood of success and competitiveness. This education also cultivates future leaders who can foster sustainable economic development.

What skills do higher education students need to become successful entrepreneurs?

The notion that enhancing critical thinking and problem-solving abilities can elevate entrepreneurial skills emerged as the sub-theme with the highest percentage of responses (42.8%). The sub-theme indicating "the imaginative nature of students is the key factor that shapes an entrepreneur" received the least number of responses (19.7%). Additionally, the sub-theme "Enhancing students' abilities in leadership and adaptability skills is sufficient" obtained the fewest replies (4.3%), reflecting the perspectives of the lecturers.

Nurturing an entrepreneurial mindset requires dedication and effort. Education plays a crucial role in developing self-confidence, critical thinking, problem-solving, brainstorming, and creative thinking, all of which are essential for shaping the attitudes and skills necessary for entrepreneurship. To improve the prospects for entrepreneurs' success and progress toward high-quality entrepreneurship, education needs to cultivate values and attitudes.

However, there are not numerous qualitative studies that investigate higher education and its impact on the development of personal traits that are crucial for achieving success in entrepreneurship.(Puerta Gómez, J. R., García, C., & -Zárate, A. (2024)).

In addition, the model for sustainable development in entrepreneurship education at universities emphasizes the significance of student contentment with entrepreneurship policies and their learning experiences. (Huang et. al., 2020)

Do you think it's important for teachers to have the qualifications to train students to become successful entrepreneurs after graduation?

According to this research question, 40.8% of students agree, “I believe skilled educators help their students enhance their creative abilities.” In contrast, only 19.3% of students supported the second sub-theme, which states that "teachers in entrepreneurship classes often employ innovative strategies and creative teaching methods." It appears that educators are concerned about the quality of entrepreneurship education. Meanwhile, the statement "Teaching ENP requires highly qualified educators" received the least endorsement, with only 7.5% of teachers in agreement.

Based on the findings, educators need to undergo more comprehensive training, develop resources that are better aligned with technology (Rudianto, R., Permana, B. R. S., Hamdan, H., & Ardiyansah, A. (2023).), and establish university policies that encourage the integration of AI and ENP in higher education.

Educators and software developers should do more to integrate technology into particular entrepreneurial education materials. However, no experimental or practical data is available to assess its use. (Chen, L., Ifenthaler, D., . (2024).)

Integrating technology into education involves more than merely training teachers on its use; it also necessitates that they comprehend how to weave it seamlessly into their curriculum. For this to happen, educators must initially acknowledge the significance of educational technology and its ability to improve learning results. Nonetheless, numerous teachers might lack experience with AI-driven learning assistance and could perceive it as a more sophisticated type of educational technology. (Wardat, Y., Tashtoush, M., AlAli, R., & Saleh, S. (2024)).

Can AI and entrepreneurship complement each other to create successful entrepreneurs?

In addressing this question, four sub-themes concerning AI and entrepreneurship can collaborate to support the success of entrepreneurs. The sub-theme with the most feedback (36.9%) indicates that AI enhances the accuracy and efficiency of the learning process. Conversely, the sub-theme expressing doubt about AI's ability to improve teaching effectiveness in entrepreneurship courses garnered the least responses (2.1%).

This study focuses on providing students with a more profound comprehension and practical use of AI technology, stressing the improvement of hands-on skills and the cultivation of comprehensive abilities, ethical viewpoints, and an awareness of social responsibility. The evolution aims to equip graduates to succeed in the entrepreneurial landscape of the AI age, fostering a new generation of entrepreneurs with creative skills, cross-disciplinary knowledge, and a robust sense of social responsibility.

The first step in transforming entrepreneurship education in higher education is to incorporate fundamental AI principles. Entrepreneurship courses should include essential topics within the AI field, including machine learning and natural language processing. By deeply comprehending these foundational concepts, students will be more equipped to utilize AI technology throughout the entrepreneurial process. (Mu, Q., & Zhao, Y. (2024).)

Conversely, the field of digital entrepreneurship has experienced significant expansion recently; however, insufficient attention has been given to its increasing educational requirements. The body of knowledge is developing in a chaotic and fragmented manner, and there has been a lack of thorough analysis of the area from an educational perspective. (Sitaridis, I., & Kitsios, F. (2024).)

What are the challenges and future directions of studying entrepreneurship?

The question highlights the viewpoints related to the assertion, “The difficulties and future avenues in the study of entrepreneurship.” The different sub-themes show that a prominent segment of students—specifically, 36.1%—concur that “Curriculum and practical entrepreneurship are not connected.” This suggests a widespread

perception among students that there is a gap between theoretical education and its practical implementation in entrepreneurship.

In contrast, educators are particularly concerned about the effectiveness of entrepreneurship education. The idea that “Effective teaching of entrepreneurship depends on skilled teachers who can recognize both the strengths and weaknesses in students' skills” received the least support, with only 6.4% of teachers in agreement. This outcome emphasizes educators' importance on competent teachers who can effectively assess and develop students' entrepreneurial abilities. Furthermore, a primary challenge of studying ENP is that the social and economic environment is constantly changing and advancing.

Regarding educational policies, the government has to enact various measures to foster entrepreneurship in higher education, such as the 'Basic Requirements of Teaching Entrepreneurship Education in Higher Education Institutions.’ These standards outline objectives for teaching and learning, concepts, curriculum, and instructional methods.

Do creativity and innovation pose pedagogical challenges and cause frustration among students?

In addressing the inquiry, "Do creativity and innovation create pedagogical challenges and lead to student frustration?" various perspectives on the assertion “Creativity and innovation create pedagogical challenges and lead to student frustration” are presented. Analyzing the sub-themes reveals that 40% of students agree with the first point: “I need more practice, including critical thinking and problem-solving skills, to improve my entrepreneurial skills.” The second point is, “I do not believe that innovative and creative skills improved by learning,” i.e. some higher-education students can easily enhance their innovative skills in the classroom. In contrast, others struggle, garnering the least agreement among the expressed opinions.

The research results indicated that the variation in students’ skills, backgrounds, interests, and personalities could pose obstacles to enhancing their entrepreneurial abilities. Therefore, educators and curricula must consider these elements to equip most students for success as entrepreneurs once they graduate. Additionally, an entrepreneurial curriculum is essential for conveying implicit knowledge through

experiential activities, as entrepreneurship education, rooted in constructivist principles, requires active engagement in real-world situations.

CHAPTER VI

Conclusion and Recommendations

6.1 Conclusion

The significant shifts in entrepreneurial education at universities during the AI era reveal various distinctive features. These shifts involve integrating core AI concepts, prioritizing hands-on projects and internship opportunities, encouraging interdisciplinary collaboration, creating courses that meet industry requirements, and educating students about ethical and societal responsibilities while promoting innovative thinking. This evolution seeks to better equip students for the entrepreneurial landscape of the AI age. It highlights the importance of technical education and the need to develop practical abilities while enhancing overall competencies. By expanding course material, building entrepreneurial ecosystems, valuing diverse teams, and ensuring ongoing updates to the curriculum, universities are dedicated to fostering entrepreneurs with diverse skill sets, creative problem-solving abilities, and a strong sense of social responsibility. This strategy is designed to effectively tackle the challenges of entrepreneurship in the AI era. The focus of this evolution includes not only advancements in technology but also the decision-making capabilities of entrepreneurs when confronted with complex ethical dilemmas. The aim is to develop well-rounded and innovative individuals while bringing fresh energy to innovation and entrepreneurship. (Mu, Q., & Zhao, Y, (2024).

This research aimed to evaluate how artificial intelligence affects entrepreneurship education as perceived by students and their instructors at higher education institutions. The data for the study consisted of responses from 40 students and 10 teachers to accurately and objectively reflect the study population. Therefore, higher education institutions are striving to effectively execute the digital transformation plan to allow students to engage constructively with the essential changes brought about by this transformation.

In contrast, entrepreneurship education in higher education institutions in Aden is low. So, by creating educational curricula that incorporate the fundamentals of entrepreneurship, these institutions can enhance their regional standing by promoting active learning principles associated with knowledge sharing. Conversely, educational institutions pursue a vision that aligns with long-term goals, including the promotion of

sustainable development through training graduates to design business models that mitigate adverse social, economic, and environmental effects.

According to the perspectives of educators and students at higher education institutions, the research revealed that artificial intelligence had a favorable impact on entrepreneurship education. Higher education institutions focus on providing software that can manage graphics and shapes to foster students' creative thinking and stimulate their mental creativity. These institutions should put resources into the potential of expert systems to reduce human bias during decision-making and encourage students to develop their skills within the local business environment. Wardana, L. W., (2020)). Furthermore, the flexibility of e-learning platforms will be enhanced, thereby enriching students' experiential learning on entrepreneurship and business startups. However, there was a challenge in applying natural language processing within the virtual reality environments in higher education institutions because of the novelty of these systems. (Alqahtani, M. (2023).

6.2 Recommendations

This research investigates the impact of AI applications on higher education students, with a specific emphasis on entrepreneurship courses, while examining the associated benefits and challenges. The study centered on students' comprehension and utilization of AI tools, lecturers' viewpoints, and their perceived pros and cons of integrating these tools into entrepreneurship classes.

This study found that artificial intelligence in entrepreneurial education is progressing and shows great potential for supporting higher education students during their academic journeys. It is crucial to consider both the drawbacks and benefits of this technology and ensure that its application is advantageous for all students while improving entrepreneurial experiences.

As a result, upcoming research should focus on improving the quality of education within the higher education system by tailoring the curriculum to incorporate AI technology and entrepreneurship courses, upgrading instructors' qualifications, and translating theoretical entrepreneurial concepts into practical experiences.

Consequently, additional research could explore the involvement of the government, educators, and students in higher education in effectively incorporating AI technology and entrepreneurship into the learning environment. This integration aims

to cultivate innovative and successful entrepreneurs who contribute to their communities' sustainable and economic development, ultimately working towards eradicating poverty, disease, and illiteracy.

What do you think Artificial Intelligence is?

Various educators and students have described AI and its technological advancements. While there is no unanimity, experts generally concur that AI includes more than just certain types of technology. Instead, AI comprises the technology, software, methodologies, and algorithms used to solve problems important to humans. The rapid growth of AI technology is swift, and the educational system must adjust to this pace to promote engaging, enthusiastic, and fulfilling learning experiences that align with the digital era.

How crucial AI is in the learning and teaching process.

Students should recognize from a young age how to leverage AI technology to enhance their skills and accomplish their tasks efficiently. Additionally, the educational system and curriculum should harmonize with the community's needs, technology, the job market, and the environment.

AI plays a significant role in developing entrepreneurial skills.

Entrepreneurship is vital for promoting sustainable development and strengthening the local economy in the unpredictable and changing economic environment. Artificial Intelligence and Entrepreneurship are related areas that both improve the skills of higher education students, which are necessary for addressing economic and community demands. Nevertheless, students must receive training and participate in entrepreneurial activities to address critical thinking challenges and take on leadership roles within a team.

Teachers use new methods to enhance the entrepreneurial skills of highly educated students.

The research indicates that digital competencies are developing among educators in the lifelong learning phase within the community. Furthermore, it recommends enhancing the curriculum and software resources to support lecturers in

utilizing approaches and strategies that align with their students' entrepreneurial requirements.

What are the disadvantages of incorporating AI into the education of highly educated students and its potential negative impact on their entrepreneurial abilities?

The field of artificial intelligence in entrepreneurial education is developing and demonstrates significant promise for aiding higher education students throughout their academic experiences. It is essential to weigh the advantages and disadvantages of this technology and ensure that its implementation benefits all students while enhancing their entrepreneurial encounters. Students should be consistently placed in various scenarios and challenges, allowing them to closely observe and engage with actual economic conditions and gain firsthand experience.

Learning entrepreneurship prepares higher education students for the workforce.

Higher education institutes must invest ample resources to improve graduates' entrepreneurial skills, thus fostering their ongoing development. Introducing cutting-edge curricula in entrepreneurship education cultivates students' creativity and behaviors, which improves their capacity to adjust to the ever-changing business landscape (Dana et al., 2021).

Entrepreneurship education can be characterized as a teaching method that aims to improve students' financial self-sufficiency and inspires them to participate in ventures that generate new employment opportunities. (Bell & Bell, 2020).

Entrepreneurial incubators provide students with essential resources and a solid basis for starting their businesses. At the same time, mentorship programs offer invaluable insights and shared experiences through engagements with industry professionals. Furthermore, entrepreneurship competitions allow students to showcase their creative abilities and collaborate in teams. This entrepreneurial environment fosters a culture of entrepreneurship within the campus. It creates connections for students to engage with businesses, investors, and industry experts, ensuring their smooth transition into the entrepreneurial community and acquiring practical industry experience and support. Therefore, nurturing an entrepreneurial ecosystem is a crucial

element of entrepreneurship education in higher education institutions, delivering students a more thorough and practical entrepreneurial experience that equips them to tackle the challenges of entrepreneurship in the age of AI. (Mu, Q., & Zhao, Y. (2024)).

Higher education students need skills to become successful entrepreneurs.

Higher education students' skills need to be activated in class. Entrepreneurship education equips students to channel their innovative skills into projects that generate extra profits and enhance their self-esteem and discipline.

The key competencies that strengthen students' entrepreneurial skills are encouraging higher education students to engage in critical thinking, tackle challenges, be innovative in their approaches, and boost their confidence.

Entrepreneurship competitions allow students to showcase their creative abilities and collaborate in teams. This entrepreneurial environment fosters a culture of entrepreneurship within the campus

It is essential for teachers to have the qualifications to train students to become successful entrepreneurs after graduation

According to the findings, higher education teachers or instructors should constantly be trained by attending workshops or courses in AI technology and entrepreneurship to help them become more qualified to make ENP courses more fruitful and effective.

AI and entrepreneurship complement each other to create successful entrepreneurs

AI and entrepreneurship are essential elements for nurturing a successful entrepreneur, which is why the education system needs to start incorporating entrepreneurship and AI early on to create substantial opportunities for recognizing uniquely gifted entrepreneurs.

The challenges and future directions of studying entrepreneurship

Continuing global advancements present a significant challenge, requiring a new approach for ENP in higher education.

An effectively structured curriculum should encompass essential knowledge, innovative activities, tools for starting a business, and chances for students to engage in entrepreneurial endeavors.

Entrepreneurial intention involves committing resources to a venture for future advancement. As a result, businesses that adopt an entrepreneurial mindset are consistently prepared to confront changes in their environment and can adapt to emerging challenges.

Creativity and innovation pose pedagogical challenges and cause frustration among students.

Develop a curriculum and ensure that educators can implement various activities, diverse approaches, and inventive strategies that foster a more imaginative and innovative learning environment. Additionally, the educational system must consider students with limited abilities as one of its challenges by providing tailored activities that ultimately boost their entrepreneurial skills.

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APPENDICES

Appendix – A: Research Information Sheet

TITLE OF STUDY: Perspectives of higher education students and teachers on the benefits and challenges of artificial intelligence and entrepreneurship

PRIMARY RESEARCHER Name: - Jameela Saleh Naji AL Harbi

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PURPOSE OF STUDY: The purpose of this study was to explore using big data and artificial intelligence (AI) in higher education research to prepare graduate students for future entrepreneurship

The study aims to analyze the impact of Artificial intelligence and entrepreneurship on higher education institutions

Examine the effectiveness of Artificial Intelligence and Entrepreneurship in Higher Educational institutions

Investigate how teachers can enhance higher education students 'entrepreneurial skills by using Artificial Intelligence.

This research will support incorporating technological tools and entrepreneurship within higher education institutions, improving students' entrepreneurial abilities.

PROCEDURES: This research used a qualitative method, which collected all participants' views and thoughts to understand the research topic better. The survey-based study used open-ended semi-structured questions to collect data from lecturers and students at Aden University. The participants will answer these questions through Google Forms, Whats App, Google Meet, and Zoom.

The study involved 40 students and ten lecturers from three colleges at Aden University. An interview is developed to explore how AI enhances the students ‘entrepreneurial skills.

This study conducted 11 open-ended inquiries, which consisted of semi-structured interviews, to understand the thoughts of both teachers and students.

To gather study data through Google Meetings and Zoom, individual interviews were conducted between August 1 and October 15, 2024. Interviews are the most efficient way to gather insights into people’s perceptions. The qualitative data were analyzed using New Microsoft Excel, employing a content analysis method.

As stated, the online interviews were conducted using Zoom and Google Meetings.

The interviews will be transcribed word-for-word for additional analysis. Following each interview, participants expressed their appreciation for the time spent and were encouraged to email the researcher if they had any concerns regarding the process. This method ensured that all 50 participants felt satisfied with the information shared on the topic being explored.

As part of the study, students at Aden University were interviewed for 20 to 30 minutes each to gather evidence and evaluate the effectiveness of integrating artificial intelligence (AI) and entrepreneurial skills in higher education. The evidence illustrates how AI and entrepreneurial skills impact higher education and the consequences for both teachers and students be addressed.

THE RISK CONTROL: No outside parties participated regarding information from the excerpts. All data was utilized exclusively for academic reasons. Confidentiality was maintained, and the data will be deleted two months following the dissertation.

BENEFITS EXPECTATION: This study aims to create opportunities for graduate students to prepare for future entrepreneurial endeavors. Courses in entrepreneurship provide students with the necessary skills and behaviors to generate value within entrepreneurial organizations. The impact of creativity skills developed

by students in an entrepreneurship class on innovation results, such as their self-assessment of creativity, perceived support from teammates, and the actual innovations created by their team and organization.

Incorporating AI into the classroom can be deemed appropriate when it aligns with the curriculum, aids students in achieving their goals, and enhances their entrepreneurial skills. Additionally, it offers essential information and data that can help educators and the broader educational system to refine their teaching methods related to the entrepreneurship curriculum through the use of technology.

It also offers a framework for developing guidelines that facilitate the integration of technology and entrepreneurial courses in higher education. Moreover, this study's outcomes can help administrators make well-informed decisions on how best to allocate resources, carry out professional development initiatives, and enhance the educational technology infrastructure.

Through entrepreneurship education, new entrepreneurs can launch their own companies and apply innovative ideas, products, services, and technologies to the foundation of ventures. Entrepreneurs have the power to reduce the unemployment rate and boost economic growth.

NEAR EAST UNIVERSITY

SCIENTIFIC RESEARCH ETHICS COMMITTEE

09.10.2024

Dear Jameela Saleh Naji AlHrbi

Your application titled **"Perspectives of Higher Education Students and Teachers on the Benefits and Challenges of Artificial Intelligence and Entrepreneurship"** with the application number NEU/ES/2024/1119 has been evaluated by the Scientific Research Ethics Committee and granted approval. You can start your research on the condition that you will abide by the information provided in your application form.

Prof. Dr. Aşkın KİRAZ

The Coordinator of the Scientific Research Ethics Committee

PERSPECTIVES OF HIGHER EDUCATION STUDENTS AND TEACHERS ON THE BENEFITS AND CHALLENGES OF ARTIFICIAL INTELLIGENCE AND ENTREPRENEURSHIP

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