

From Cognition to Creation: The Role of Cognitive Diversity in Developing Entrepreneurial Skills

Dr. Nasir Shaheen

Assistant Professor, Centre for Management & Commerce, University of Swat, Khyber Pakhtunkhwa Pakistan, 19120, Email: nasirshaheen@uswat.edu.pk

Akhter Hussain (Corresponding Author)

PhD Scholar, Center for Management & Commerce, University of Swat, Khyber Pakhtunkhwa Pakistan, 19120, Email: 241163@uswat.edu.pk, <https://orcid.org/0009-0008-5414-9704>,

Dr. Nasir Ahmad

Associate Professor, Center for Education and Staff Training, University of Swat, Khyber Pakhtunkhwa Pakistan, 19120, Email: nasir_cupid@uswat.edu.pk

Asif Saud Jan

PhD Scholar, Centre for Management & Commerce, University of Swat, Khyber Pakhtunkhwa Pakistan, 19120, Email: asif.saud@uswat.edu.pk

Najeeb Ullah Khan

PhD Scholar, Centre for Management & Commerce, University of Swat, Khyber Pakhtunkhwa Pakistan, 19120, Email: khannajeebullah@hotmail.com

Sheema Iqbal

PhD scholar, Centre for Management and Commerce, University of Swat, Khyber Pakhtunkhwa Pakistan, 19120, Email: sheemaiqbal99@gmail.com

Abstract

Entrepreneurship education models that are based on intelligence and innovation can benefit from such teaching strategies that nourish a broader range of cognitive abilities approaches that develop skills. This study aimed to investigate the relationship between multiple intelligences and entrepreneurial skills among university students. The objective of this study was to identify the different entrepreneurial skills and intelligences of students. The study aimed to find out the relation between entrepreneurial skills and multiple intelligences. A correlational design and a survey method was used. Multiple Intelligences Inventory based on Gardner's framework and the Entrepreneurial Skills Questionnaire (ESQ) were used for assessment. The findings of the study indicated an average scores that show a greater popularity of interpersonal and logical-mathematical intelligences among the students. Practical implications for curriculum development were ($r = 0.29$, $.31$, $r = 0.25$, $p < 0.05$). A strong positive link was noted between interpersonal, logical-mathematical, and bodily kinesthetic intelligences and entrepreneurial skills among students. This study

Author Details

Keywords: Entrepreneurship; Multiple Intelligences; Innovation Skills; Interpersonal Intelligence; Education

Received on 20 Sep 2025

Accepted on 10 Oct 2025

Published on 20 Oct 2025

Corresponding E-mail & Author*:

Akhter Hussain (Corresponding Author)

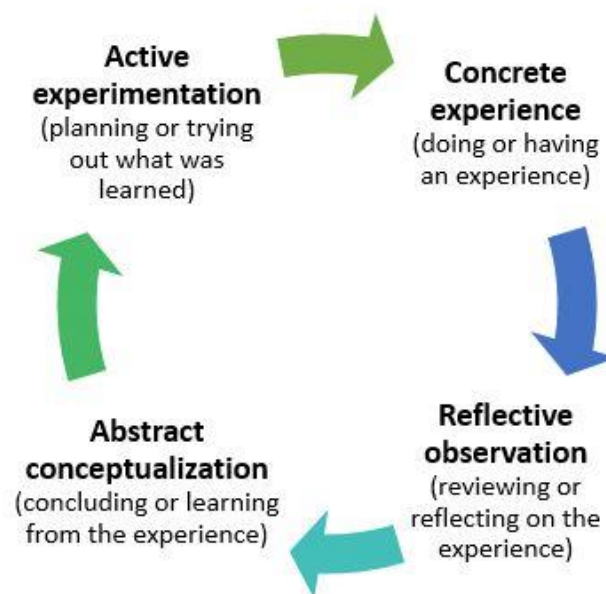
PhD Scholar, Center for Management & Commerce, University of Swat, Khyber Pakhtunkhwa Pakistan, 19120, Email: 241163@uswat.edu.pk, <https://orcid.org/0009-0008-5414-9704>,

suggests that such programs should be included with activities that involve interpersonal, logical-mathematical, and kinesthetic intelligences.

Introduction

Entrepreneurial education is defined that includes a set of elements that can be systematically delivered to improve student learning and engagement in the their relevant subjects (Chen, Ifenthaler, & Yau, 2021). Laid and Adlaon (2025) highlights the importance of these elements, this includes a well-structured curriculum; new teaching methods; innovative hands-on practice. Opportunities that can be engaging in learning environment that encourages creativity and teamwork This diverse approach mentioned in the work of Swargiary (2024) study, highlights that such approaches and methods goes beyond traditional classroom learning for the students. This creates an important emphasis on such activities if given, students will have the ability to real-world experiences and allowing them to apply knowledge.

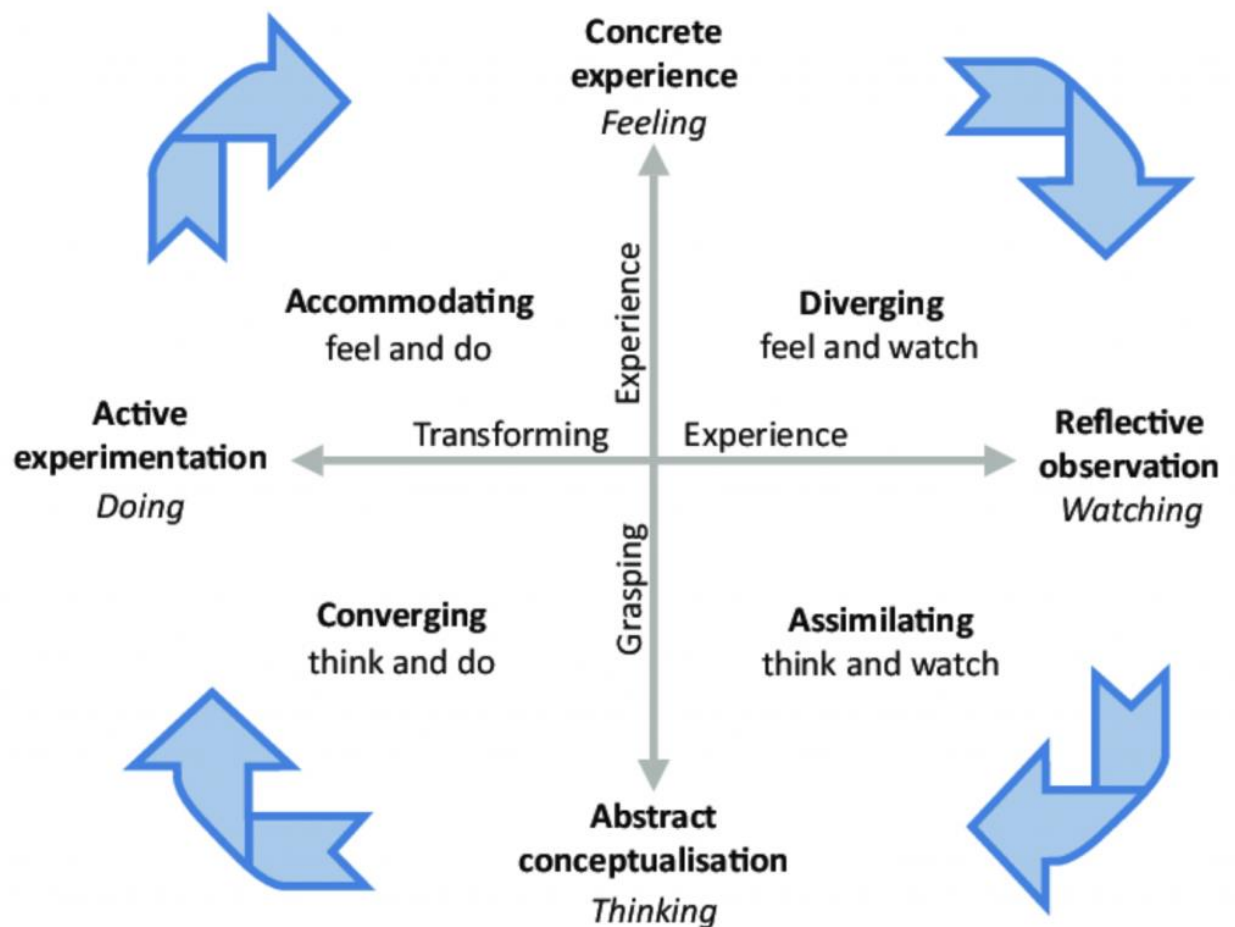
Figure 1 Kolb's Learning Cycle



Experiential Learning Activities: Does it Play a Role?

The importance of experiential activities play an important role in entrepreneurial education for learners (Ahuja,2024). Why is it so? Because, undergraduates especially, they let students dive into real-life situations and, learn situations that can truly reflect the challenges and opportunities present in business.

Figure 2 Kolb's Learning Styles

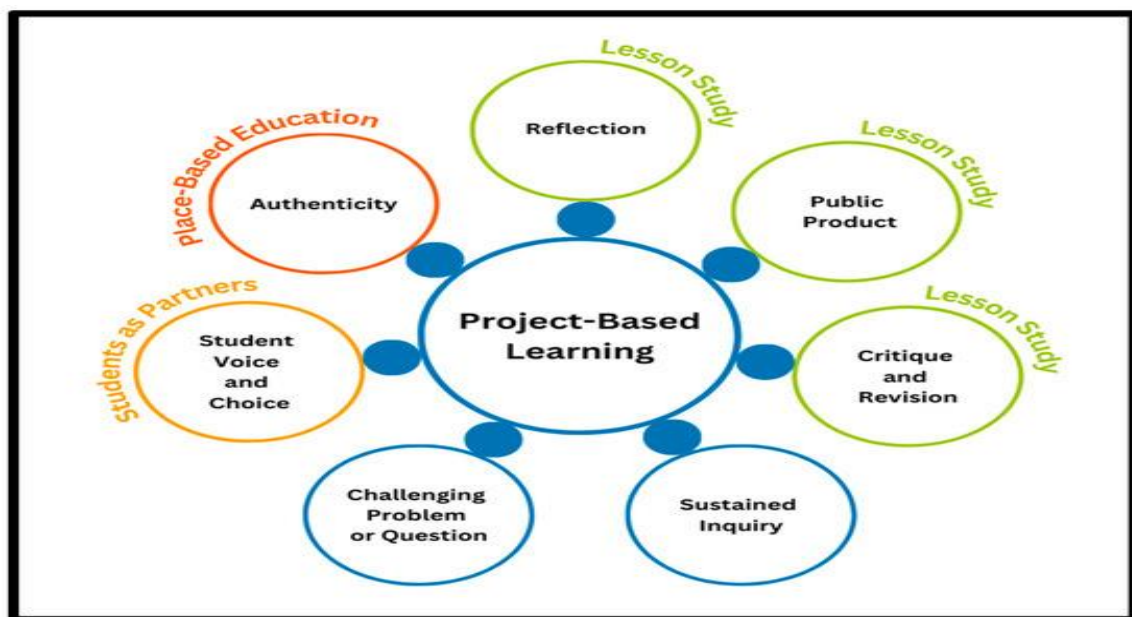


The (figure 2) activities can include 4 aspects. If followed students will be able to examine actual business cases. This also suggest realistic solutions, as well as simulations (Ahuja, 2024). Such approach provides a safe space, a practical ground for students to develop enhance decision-making skills from concrete experience to abstract conceptualization and reflective observation to active experimentation.

Project Based Learning: For Effective Management

Therefore a project-based learning is another key method. This dimension not only opens, where students take on detailed projects but also involves in planning, execution, and reflection on their work (Omelianenko & Artyukhova, 2024). In order to be practical in their journey, focus on hands-on activities in learning is important. It may help in the preparation of individuals who can adjust to changing situations and environment (Kucuksuleymanoglu, 2025).

Figure 3 Project Based Learning Model



As illustrated (Figure. 3) show how a project based model works. This has been adapted from the Buck Institute for Education's. Duchek, Geithner, and Roth (2023) highlighted in this regard, the value of a practical approach. The true spirit of this method is to allow learners to build important skills like critical thinking, problem-solving, teamwork, and resilience. These skills not just only help on theoretical side but, aslo help them succeed in uncertain economic conditions, which are increasingly necessary and demanding in today's fast-changing job market.

Entrepreneurship Education: Economical Perspective

Entrepreneurial education is not just an add-on where students just learn and theorizes the concepts of books and literature. This has become a critical component of the modern education system. Usman et al. (2024) in study have mentioned the view of economies, where economies are more intertwined and sophisticated. This ability to innovate, create, and manage enterprises is becoming increasingly valuable. Educational institutions must recognize this shift and recognize the potential, they should gradually incorporate entrepreneurial principles into their curricula, aiming to equip future leaders.

With the right process and tools needed to navigate complexities and drive economic progress. In summary, entrepreneurial education is an important mean to help foster a generation of adaptable thinkers; thinkers who are prepared to tackle challenges in an unpredictable world.

Entrepreneurship Education: A Societal Perspective

Education that helps learn, practice and develop these skills will be essential in modern education (Bauman & Lucy, 2021). As societies change, they value the skills and abilities that can drive economic growth and social innovation (Davis, 2002). The main purpose of entrepreneurial skills is not just to teach about the mere definitions entrepreneurship but, to help individual's spot opportunities, develop ideas, gather resources, and create value for stakeholders Entrepreneurial education is important because it plays a key role in today's education system..

Entrepreneurial Skills: What They Are?

The entrepreneurial skills as early discussed are one of the main characteristics required for an individual (Cohen, 2025). They let enable a person to identify and spot opportunities. To develop ideas. Gather resources, and create value for stakeholders. These skills include an analysis, critical in innovation to risk management, networking and resource management. These skills show how important they are for building the knowledge, abilities, and attitudes needed for entrepreneurial thinking. This approach is effective because entrepreneurial skills often require a combination of cognitive, interpersonal, and practical skills, or one in particular depending on the context. It is designed to help and develop creativity, innovation, and problem-solving skills in entrepreneurial process (Hadley, 2025). This may enable one to the identification of opportunities, assessment of risks, and manage resources in an effective manner. The integration of multiple intelligences in the regard provides us a comprehensive model, a model for understanding an individual's strengths and nurturing diverse talent that raises holistic development (Okada et al., 2025).

Understand of Entrepreneurial Minds: Who They Are?

Entrepreneurship skills features the also shows its importance. This skill concept around creativity and innovation This leads one to full understand their intelligences; who they are?

To furnish and prepare their understanding of mind A mindset is what intelligence domain helps the most in learning. This understanding requires a conciseness to develop their cognitive abilities. Enabling them to let think innovatively, regarding every aspect of their entrepreneurial process and builds a significance the role of intelligences in their development. This focus is vital and cannot be ignored because intelligence is not viewed as a singular capacity, but rather a collection of distinct modalities (Giuliano et al., 2025). Modern entrepreneurs benefit and values traits like adaptability, creativity, interpersonal skills, and resilience to and these methods or knowing is often not fully developed through conventional educational models.

Intelligence refers to the ability of an individual to solve problems, adapt, or achieve goal-directed behavior that can be measured across various cognitive and social domains (Dodig-Crnkovic, 2025). Likewise, various theories are present; however, Howard Gardner's theory of multiple intelligences states that intelligence is not a singular capacity to be studied, but a collection of distinct modalities through which an individual processes information and solves problems to their understanding. The types of intelligences include linguistic, logical-mathematical, spatial, musical, bodily kinesthetic, interpersonal, intrapersonal, naturalistic, and existential intelligences; each represents a unique way of learning and interacting with the world. To recognize and leverage these various intelligence types in entrepreneurial education to enhance entrepreneurial skills, the learning experience, and such approaches to multiple intelligences allow individuals to identify their strengths and develop their competencies in various domains.

Linking the relationship of Entrepreneurial Skills and Intelligences: What are the Possibilities?

The connection between entrepreneurial skills and multiple intelligences centers on nurturing different talents that support overall growth. Entrepreneurship education discussed earlier, significantly benefits from highlighting multiple intelligences. Entrepreneurial skills often require a combination of cognitive, interpersonal, and practical skills (Ou & Kim, 2025). Moreover, interpersonal intelligence helps in networking and collaboration. Logical-mathematical intelligence helps in problem solving and decision-making. This alignment of entrepreneurship skills with the

framework of multiple intelligences, educators may develop or use as inclusive and adaptive learning environments. For students that empower them to excel in entrepreneurial pursuits.

The Alignment Based Approach: An Inclusive Perspective

Inclusive and adaptive learning environments can be obtained by aligning entrepreneurial skills with the framework of multiple intelligences, educators may come up with. To develop competencies in various domains, in modern times, entrepreneurs have benefited from adaptability, creativity, interpersonal skills, and resilience. Somehow their traits that may not be fully developed through conventional educational models and approaches. Given the context of entrepreneurial skills, field of entrepreneurship is highly complex, diverse, and adaptable this complexity makes it challenging to the academicians to develop the right combination of learning tools to prepare students.

Gardner's Theory of Multiple Intelligences

Therefore in this given the research values, Gardner's theory of multiple intelligences. This theory will helps us to understand intelligence. It states that individuals have a wide range of cognitive abilities beyond their verbal-linguistic and logical-mathematical skills. The field of entrepreneurship is highly complex, diverse, and adaptable to the given context of entrepreneurial skills, making it challenging for academics to develop the right combination of learning tools to prepare students. This complexity makes it challenging to the academicians to develop the right combination of learning tools to prepare students. Gardner's framework offers a practical model for understanding an individual's strengths to understand from another perspective.

The importance is to create the entrepreneurial skills with the concept of multiple intelligences- where educators can create inclusive and flexible learning environments. This research adopted and build on the work of Shaheen et al. (2020) about entrepreneurial learning. Their study explored a new horizon into; how different learning styles affect the development of entrepreneurial skills? In this current study, the researcher used a multiple intelligences approach to examine and define entrepreneurial skills and innovative approaches among students. This research aims to explore how specific intelligences can support entrepreneurial and innovation skills, specifically but not limited to university students, especially those studying business and management sciences in Khyber Pakhtunkhwa. The use of this framework explains a clear model for understanding an individual's strengths.

The methodology of Shaheen et al. (2020) ESQ was used. It notes that the Entrepreneurial Skills Questionnaire helped to measure students' entrepreneurial skills in four areas: resilience, creativity, business planning, and risk-taking. Gardner's framework includes interpersonal; intrapersonal; bodily kinesthetic; logical-mathematical, and visual-spatial intelligences.

Research Problem

Skills like creativity, innovation, risk management, analysis, and problem-solving help individuals spot opportunities and create value for stakeholders.

Entrepreneurial education has become an important part of today's education system. It focuses on hands-on learning and practical activities to nurture essential skills. The complex and adaptable nature of entrepreneurship challenges academics to develop the right combination of learning tools. Traditional educational models may not fully cultivate these essential human traits. The complex, diverse, and flexible nature of entrepreneurship challenges educators as they try to create the right mix of learning tools for students. This study aims to investigate the relationship between multiple intelligences and entrepreneurial skills among university students. Such conventional

educational models may not fully develop the diverse traits (like adaptability and resilience) needed by modern entrepreneurs

Research Objectives

To find out the different entrepreneurial skills of the students

To find out the different intelligences of students

To determine the correlation of entrepreneurial skills and multiple intelligences

Research Questions

What are the students' different entrepreneurial skills?

What are the different intelligences of the students?

What is the correlation between entrepreneurial skills and multiple intelligences?

These questions aim and will help to contribute to the literature on entrepreneurship education by offering practical insights for educators to understand the multiple intelligences of students and their likelihood of entrepreneurship and innovation.

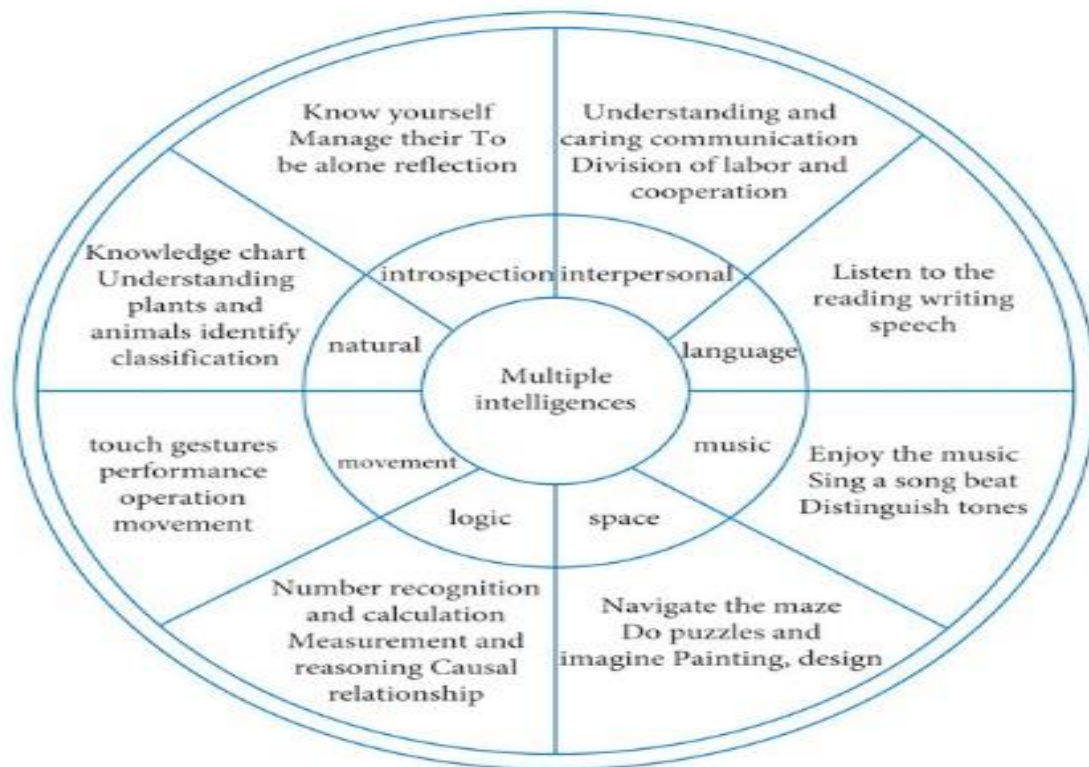
Significance of the Study

Developing entrepreneurial skills builds on earlier studies by using a multiple intelligences approach to explore the process of entrepreneurial skill and innovation in students. The study carries significant importance by making contributions to both the theoretical understanding and the practical application of entrepreneurship education. They help educators understand how multiple intelligences connect to students' inclination toward entrepreneurship and innovation. The research lays a foundation for rethinking how entrepreneurship programs are designed and delivered. It suggests moving beyond traditional models to create a more engaging learning environment. The findings provide useful insights for educators.

Literature Review

Many educators aim to find well-rounded ways to nurture different cognitive strengths. Various studies show that using multiple intelligences approaches can meet individual learning needs. This helps improve engagement in skill acquisition. Howard Gardner presented a theory of multiple intelligences in 1983. These abilities are interpersonal, intrapersonal, logical-mathematical, bodily kinesthetic, and visual-spatial. This theory suggests that human intelligence goes beyond traditional measures and includes distinct abilities. This understanding of multiple intelligences has greatly influenced education, especially in entrepreneurship..

Figure 4 Composition of Multiple Intelligences Theory



A study found that curricula using multiple intelligences and their applications help build a range of skills that prepare students for complex market environments (Shaheen et al., 2020). Researchers have included multiple intelligences in entrepreneurial education. This approach helps develop a specific mindset that includes adaptability, creativity, and resilience. Gardner's theory supports different learning styles that fit various entrepreneurial challenges, such as team leadership and business strategies (Heinonen & Poikkijoki, 2006). On the other hand, students with high intrapersonal intelligence unlock and enhance self-reflection and resilience, which enables them to assess risks and navigate and go through entrepreneurial challenges (Hamilton, 2011). Research indicates that students with high interpersonal intelligence thrive in collaborative environments. They positively impact team projects and business networks (Smith and Hendricks, 2016).

The multiple intelligence model (see Figure 1) is taken from Xie and Xu (2022). Interpersonal and intrapersonal intelligences are important in entrepreneurship education. They promote self-awareness and effective communication skills among students, which are essential for success in entrepreneurship (Rae, 2006). Logical-mathematical intelligence enables and supports strategic thinking and analytical problem-solving, which are essential competencies in entrepreneurship (Kolb, 1984). Kuratko (2005) arguments on such domain of intelligences states that students with strong logical abilities have demonstrated higher efficacy in planning and forecasting, an essential and key skills in business contexts. Gibb (1993) states that logical-mathematical intelligence plays a pivotal role in handling complex decision-making tasks that require a calculated mindset, as it is considered a necessary component of entrepreneurial education programs.

This learning style encourages adaptability, helping students effectively handle real-world challenges (Solomon, 2007). Students with high bodily kinesthetic intelligence often excel in practical tasks and learning through simulations. Gardner's perspective on bodily kinesthetic intelligence emphasizes the importance of learning through

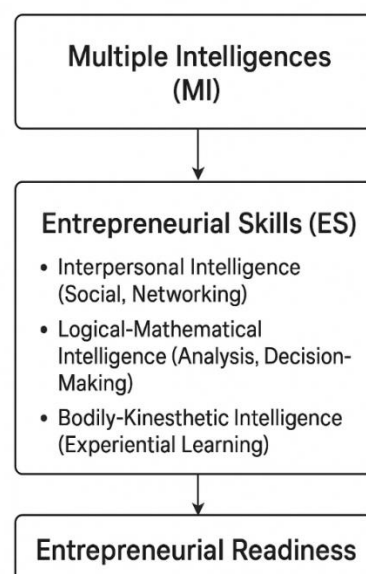
experience. Kolb (1984) argued that this type of learning is a key hands-on approach. These skills are vital in entrepreneurship for building prototypes and testing business models (Munir et al., 2018).

Heinonen and Poikkijoki (2006) pointed out that programs aimed at entrepreneurship that use multiple intelligences can help develop a wide range of skills. Solomon (2007) also stressed the importance of intelligence-specific modules and content in entrepreneurship programs. Implementing multiple intelligences in education means creating different learning modules that can cater to individual cognitive strengths. Hands-on tasks work well for bodily kinesthetic learners, while logical exercises and calculation models support students who think analytically.

These findings emphasize the lasting advantages of intelligence-based learning methods in supporting ongoing entrepreneurial success (Deakins & Freel, 2003). Similarly, exposure to multiple intelligences develops a strong entrepreneurial mindset. This helps graduates build the agility needed in dynamic business settings. Individuals with visual-spatial intelligence support innovation by visualizing and fostering imagination. This ability is key for creative visualization, an important aspect of design thinking and marketing.. Long-term studies have looked into entrepreneurship education. Students trained to use multiple intelligences methods are more likely to show resilience and adaptability (Rae & Carswell, 2000). Research indicates that students who score high in visual-spatial intelligence are better at turning ideas into concepts, which helps in product design and advertising (Nganu, 2018). While not all aspects connect directly to traditional entrepreneurial skills, visual-spatial intelligence promotes an innovative thinking style that is vital for standing out in the market (Felder & Silverman, 1988).

However, challenges persist in creating standardized curriculum models that can guide educational settings. Gibb (1993) highlighted the importance of conducting studies that confirm the effectiveness of intelligence-based education in various cultural and academic contexts.. Future research should look into the specific combinations of intelligences that best support entrepreneurial success. This will help in developing targeted programs for students (Burgoon et al., 2016).The multiple intelligences approach offers a solid framework for entrepreneurship education

Figure 5 Theoretical Framework Based on Multiple Intelligences and Entrepreneurial Skill Set



Research Methodology

Research Design

This design allows the research to expand on previous findings by exploring how specific intelligences support entrepreneurial and innovation skills in university students, particularly those in business studies. A quantitative correlational design was adopted to study and analyze the relationship between multiple intelligences and entrepreneurial skills in university students. The research by Shaheen (2020), which investigated the impact of different learning styles on acquiring entrepreneurial skills—by adopting a multiple intelligences approach in this study to investigate further the process of entrepreneurial skill and innovation among students in relation to multiple intelligences. The population of the study comprised all the students of business studies at universities of Khyber Pakhtunkhwa (or Khyber Pakhtunkhwa).

Population and Sampling

A sample of 600 business and management science students was randomly selected through a probability sampling technique. This sampling technique was specifically used to ensure diverse representation from public and private sector universities in the Khyber Pakhtunkhwa.

Data Collection and Instruments

The use of online distribution ensured wide accessibility and participation from students in multiple universities. The data for this study were collected through an online survey method. The survey included two primary instruments:

Entrepreneurial Skills Questionnaire (ESQ): The ESQ survey was previously used by Shaheen et al. (2020) and was adopted to measure and investigate the students' entrepreneurial skills across four dimensions: resilience, creativity, business planning, and risk-taking.

Multiple Intelligences Inventory: This instrument was adapted from Gardner's framework and helped in assessing interpersonal, intrapersonal, logical-mathematical, bodily-kinesthetic, and visual-spatial intelligences using a 5-point Likert scale.

Data Collection Procedure

This method was specifically chosen because online distribution ensured wide accessibility and participation from students in multiple universities. Once the data was collected via the online survey, it was analyzed using SPSS software to apply descriptive and inferential statistics. The data collection procedure employed in this study investigated the relationship between multiple intelligences and entrepreneurial skills, was primarily conducted using an online survey method.

Data Analysis

The students' self-reported entrepreneurial skills (resilience, creativity, business planning, and risk-taking) and the different types of intelligences assessed via Gardner's framework (interpersonal, intrapersonal, logical-mathematical, bodily-kinesthetic, and visual-spatial intelligences). The collected data, which was gathered through an online survey of 600 business and management science students from universities in Khyber Pakhtunkhwa. By using SPSS software for both descriptive and inferential statistics. This correlational analysis successfully established a significant positive relationship between entrepreneurial skills and three specific cognitive modalities: interpersonal, logical-mathematical, and bodily-kinesthetic intelligences. The Pearson correlation coefficient method was used to assess the relationships.

between specific intelligences and entrepreneurial skills. The α -values were set at 0.05 for statistical significance.

Results and Analysis

The table indicates a generally high level of self-reported entrepreneurial skills among the participants in the study.

Table 1: Mean Scores for Entrepreneurial and Innovation Skills

Entrepreneurial Skill	Mean Score
Resilience	4.1
Creativity	4
Business Planning	3.9
Risk-Taking	3.8

Interpretation:

With resilience scoring the highest The mean scores indicate a generally high level of self-reported entrepreneurial skills among participants,

Resilience Students possessing high intrapersonal intelligence unlock self-reflection and resilience, which helps them navigate entrepreneurial challenges. Integrating multiple intelligences into curricula is linked to fostering a mindset that includes resilience. This scored the highest among the four entrepreneurial skills assessed, with a mean score of 4.1.

Creativity (Mean Score 4.0).

While visual-spatial intelligence might aid creativity, the study noted that creativity, though essential for product development and innovation, may have a less prominent role in core entrepreneurial activities such as financial planning and risk management. Active and experiential learning methods can improve entrepreneurial competencies by encouraging adaptability and creativity.

Business Planning (Mean Score 3.9) and Risk-Taking (Mean Score 3.8)

Entrepreneurial skills encompass risk management and the ability to assess risks. These two skills are closely linked in the study to logical abilities and strategic thinking.

Table 2: Mean Scores for Multiple Intelligences

Type of Intelligence	Mean Score
Interpersonal Intelligence	4.3
Logical-Mathematical Intelligence	4.2
Bodily-Kinesthetic Intelligence	4.1
Intrapersonal Intelligence	3.9

Interpretation: Reflecting a high prevalence of these intelligence types. Interpersonal and logical-mathematical intelligences were the most common among the sample,

Table 3: Correlation between Multiple Intelligences and Entrepreneurial Skills

Type of Intelligence	Correlation Entrepreneurial Skills	with Significance(p- value)
Interpersonal Intelligence	$r = 0.29$	$p < 0.05$
Logical-Mathematical Intelligence	$r = 0.31$	$p < 0.05$
Bodily-Kinesthetic Intelligence	$r = 0.25$	$p < 0.05$
Visual-Spatial Intelligence	No significant correlation	-

Interpretation: while visual-spatial intelligence showed no significant relationship with entrepreneurial skills. Significant positive correlations were observed between interpersonal, logical-mathematical, and bodily kinesthetic intelligences and entrepreneurial skills

Logical-mathematical intelligence

Students with strong logical abilities have demonstrated higher efficacy in planning and forecasting. It supports strategic thinking, analytical problem-solving, and decision-making, which are crucial factors of entrepreneurship. Students having strong logical-mathematical abilities are adept at assessing and evaluating risks and creating structured plans, which are essential for successful entrepreneurship.

Discussion

The significant correlation found between interpersonal intelligence and entrepreneurial skills in this study supports the importance of social and emotional intelligence in business contexts, where relationship building, collaboration, teamwork, and communication are important. The findings of this study support previous research on multiple intelligences, suggesting that a range of cognitive abilities positively contributes to entrepreneurial skill development. Such emphasis is present,

Conversely, logical-mathematical intelligence has a positive correlation with business planning and risk-taking, as it aligns with analytical and decision-making skills, which are crucial factors in entrepreneurship. This finding is in alignment with the findings of Felder and Silverman (1988), who stated that analytical and logical reasoning are key instruments in problem-solving and decision-making, both of which play a critical role in entrepreneurial success. Students with strong logical-mathematical abilities are good at assessing and evaluating risks and creating structured plans, both of which are essential for successful entrepreneurship. These findings are also supported by Kolb's (1984) experiential learning theory, which focuses on the importance of analytical thinking in applied learning environments.

Bodily kinesthetic intelligence shows resilience, which suggests that hands-on learning experiences, such as practical exercises, outdoor activities, or simulations, may help students develop the adaptability needed for successful entrepreneurship. Shaheen et al. (2020) similarly found in their study that tactile learners in students benefit from experiential learning in entrepreneurship education. Gardner's (1983) theory of multiple intelligences focuses on how diverse cognitive abilities can influence individual professional competencies, including those required in entrepreneurship. Students with high interpersonal intelligence have a great tendency to excel in networking and team management, which are considered important aspects of entrepreneurship. Gibb (1993), has mentioned in his study about the similarity that emphasizes on the role of interpersonal and social skills in that can nurture entrepreneurial readiness and business success. Moreover, Rae (2006) highlights and gives importance to the fact that active and experiential learning methods for individuals can improve entrepreneurial competencies by encouraging adaptability and creativity in their learning environment.

Interestingly, visual-spatial intelligence in this study did not correlate significantly with entrepreneurial skills, which may indicate that, while visual learning aids creativity, it might not directly translate to entrepreneurial competencies. This statement is consistent with Hannon (2005), who considered creativity essential for product development and innovation, and its role is of utmost importance in entrepreneurial activities such as risk management and financial planning remains less prominent. These findings highlight and suggest the need for further research on how visual-spatial skills in students may indirectly support entrepreneurial activities, perhaps through marketing, product design, or creative problem solving.

Conclusion

The findings of this research provide a foundation for rethinking entrepreneurship programs that can be designed and delivered in education. This study contributes to the entrepreneurship education literature by demonstrating that multiple intelligences play distinct roles in developing entrepreneurial skills. Interpersonal, logical-mathematical, and bodily kinesthetic intelligences significantly correlated with entrepreneurial readiness, suggesting that entrepreneurship education could benefit from incorporating a range of intelligence-based activities. Once these practices are established in alignment with multiple intelligences, institutions will have the potential to move beyond traditional models, especially in the higher education sector. This diverse approach to multiple intelligences can enhance student's strengths and has the potential to cover the entrepreneurial readiness gaps for individuals who may not be nurtured by conventional learning methods. Moreover, the findings of the study also direct further exploration of other intelligence types, such as linguistic or spatial, in relation to entrepreneurial behavior. A dynamic learning environment can foster entrepreneurial competencies through diverse activities: role-playing (to enhance interpersonal intelligence), coding challenges (to develop logical-mathematical intelligence), and prototyping sessions (to leverage bodily kinesthetic intelligence). Studying such a broader context of intelligence can help educators effectively design programs that match diverse students in educational settings. Educational institutional can produce better and loaded entrepreneurs to meet the demand of global complex markets by adapting such multiple intelligences models. Accordingly, entrepreneurship education with an approach of multiple intelligences can help foster innovation, resilience, and adaptability, which are critical attributes for a successful and sound global economy.

Recommendations

Educational programs could adopt intelligence-specific teaching strategies, such as teamwork exercises for interpersonal skills and problem-solving activities for bodily-kinesthetic learners.

Tracking students over time would provide insight into the development of entrepreneurial skills across different stages of learning.

Further research should explore the indirect contributions of visual-spatial intelligence to entrepreneurship. By adopting a multiple intelligences approach, educational institutions can create a more inclusive and effective curriculum that fosters adaptability, creativity, and resilience—skills essential for future entrepreneurs.

References

- Ahuja, V. (2024). Simulations in business education: Unlocking experiential learning. In *Practices and implementation of gamification in higher education* (pp. 1–21).
- Bauman, A., & Lucy, C. (2021). Enhancing entrepreneurial education: Developing competencies for success. *The International Journal of Management Education*, 19(1), 100293.
- Chen, L., Ifenthaler, D., & Yau, J. Y. K. (2021). Online and blended entrepreneurship education: a systematic review of applied educational technologies. *Entrepreneurship education*, 4(2), 191-232.
- Cohen, N. (2025). Policy entrepreneurs and agenda setting. In N. Zahariadis (Ed.), *Handbook of public policy agenda setting* (pp. 170–184). Edward Elgar Publishing.
- Davis, S. M. (2002). Social entrepreneurship: Towards an entrepreneurial culture for social and economic development. *SSRN Electronic Journal*.
- Dodig-Crnkovic, G. (2025). *Cognition and intelligence*. Springer.
- Duchek, S., Geithner, S., & Roth, T. (2023). Mastering team crises: A play-oriented approach to foster resilience capabilities in student teams. *Teaching in Higher Education*, 28(8), 1937–1956.
- Giuliano, A., McCafferty-Leroux, A., Yawney, J., & Gadsden, S. A. (2025). Cognitive Internet of Things: A review of theory, applications, and recent advances. *IEEE Communications Surveys & Tutorials*. Advance online publication.
- Hadley, G. R. (2025). Embedded entrepreneurship pedagogy: Six key practices for an entrepreneurial classroom. *Thinking Skills and Creativity*, 49, 101993.
- Kucuksuleymanoglu, R. (2025). Resilience in lifelong learning for individuals. In *Resilience, adaptability, and cultural awareness within the educational landscape* (pp. 69–96). IGI Global Scientific Publishing.
- Laid, S. M. T., & Adlaon, M. S. (2025). A Systematic Review of Innovative Teaching Strategies in Science: Exploring Hands-on Learning, Technology Integration, and Student-Centered Approaches. *Acta Pedagogica Asiana*, 4(2), 101-114.
- Okada, A., Sherborne, T., Panselinas, G., & Kolionis, G. (2025). Fostering transversal skills through open schooling supported by the CARE-KNOW-DO pedagogical model and the UNESCO AI competencies framework. *International Journal of Artificial Intelligence in Education*, 1–46.
- Omelianenko, O., & Artyukhova, N. (2024). Project-based learning: Theoretical overview and practical implications for local innovation-based development. *Economics and Education*, 9(1), 35–41.
- Ou, Y., & Kim, K. (2025). Integrating psychology into entrepreneurship education: A catalyst for developing cognitive and emotional skills among college students. *Journal of the Knowledge Economy*, 16(2), 7979–8006.

- Swargiary, K. (2024). Redefining reality: My vision for an education rooted in real-world experiences. ERA, US.
- Usman, F. O., Kess-Momoh, A. J., Ibeh, C. V., Elufioye, A. E., Ilojiyanya, V. I., & Oyeyemi, O. P. (2024). Entrepreneurial innovations and trends: A global review: Examining emerging trends, challenges, and opportunities in the field of entrepreneurship, with a focus on how technology and globalization are shaping new business ventures. *International Journal of Science and Research Archive*, 11(1), 552–569.
- Xie, M., & Xu, X. (2022). Construction of a college physical education teaching model using multiple intelligences theory. *Scientific Programming*, 2022(1), 1837512.