

Teaching and Learning of Mathematics Among Secondary School Students for the Development of Entrepreneurship: Implications for Economic Diversification in Kwara State

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doi: <https://doi.org/10.37745/bje.2013/vol13n37996>

Published February 22, 2025

Citation: Yahaya M. and Awoyale O. (2025) Teaching and Learning of Mathematics Among Secondary School Students for the Development of Entrepreneurship: Implications for Economic Diversification in Kwara State, *British Journal of Education*, Vol.13, Issue 3,79-96

Abstract: *The objective of the study is to examine the roles of teaching and learning of mathematics among secondary students for development of entrepreneurship for economic development in Kwara State. Descriptive survey was employed as the research design for the study and questionnaire containing closed and open-ended questions was the instrument for data collection. Sample of the study comprised 134 teachers and 167 students from the state. The designed questionnaire items were validated by two lecturers from the Mathematics and Integrated science departments, Federal College of Education Kontagora, Niger State. To test the reliability of the items, a split-half method was adopted. Cronbach alpha-20 (α_{20}) was employed to estimate the reliability coefficient of the Likert's scale test items and was found to be 0.83. Data collected was analyzed using percentages (%) and means statistics to answer the research questions. The finding of the study revealed that teaching and learning of mathematics support the development of entrepreneurship among secondary students. Also the study revealed that teachers who incorporated entrepreneurial concepts into their mathematics lessons increased student engagement and skills, which necessary for entrepreneurship development. It is therefore recommended that there is need for an innovative and practical approach to mathematics education and teachers' training should be done at well.*

Keywords: teaching and learning, mathematics, secondary school students, development, entrepreneurship, economic diversification, Kwara state

INTRODUCTION

Entrepreneurship is a critical driver of economic diversification and sustainable development, particularly in developing economies like Nigeria. It promotes job creation, innovation, and efficient resource utilization while reducing dependence on agriculture and public sector employment. Self-employment can significantly reduce unemployment in Nigeria, necessitating a well-structured educational framework that incorporates entrepreneurship. Integrating entrepreneurship principles into mathematics education can influence students' intentions to pursue self-employment, contributing to overall economic growth (Odia, 2019).

In Kwara State, cultivating an entrepreneurial mind-set among the youth is essential for addressing unemployment and stimulating economic growth and diversification. Mathematics education plays a crucial role in this process by equipping learners with problem-solving, logical reasoning, and analytical skills that are fundamental to entrepreneurial success. Key aspects of entrepreneurship—such as financial management, risk assessment, and strategic decision-making—rely on mathematical skills. Therefore, integrating entrepreneurial concepts into mathematics curricula can empower students to identify business opportunities, allocate resources efficiently, and drive innovation.

Mathematics serves as a foundational tool for developing entrepreneurial competencies. Mastering mathematical concepts enhances critical thinking and decision-making abilities, which are essential traits for entrepreneurship. Mathematics education can transform theoretical knowledge into practical business solutions, further emphasizing its role in job creation and economic development (Odo et al., 2018). Mathematics education should emphasize experiential learning, which focuses on practical, real-world applications. Math curricula should be practical and relevant, connecting with students' real-world experiences to spark their interest in the subject. This approach not only makes math more engaging but also cultivates self-reliance and entrepreneurial skills, ultimately benefiting economic diversification in Kwara State and national development at large (Lawal et al., 2023). Incorporating entrepreneurship education within mathematics instruction for future primary school teachers in Kwara State translates into early exposure, which can create a ripple effect benefiting the state's economy (Summer, 2019). Furthermore, mathematics education has been identified as a key contributor to the development of entrepreneurial skills among secondary school students. A strong foundation in mathematics empowers students to engage in innovative entrepreneurial activities, thereby enhancing economic diversification (Sabitu, 2024). Mathematics education equips individuals with essential problem-solving and analytical skills vital for entrepreneurial success (Asika, 2019).

Entrepreneurship education also addresses security challenges and enhances economic stability in Kwara State by equipping citizens with entrepreneurial skills, thereby reducing unemployment

rates, mitigating insecurity, and fostering economic resilience and diversification. This underscores the importance of integrating entrepreneurship education across various disciplines, including mathematics, to achieve economic diversification and broader socio-economic objectives (Chimezie et al., 2022). Empirical research provides valuable insights into the practical applications of integrating entrepreneurship and mathematics education. For example, Palmér and Johansson (2018) explored the combination of entrepreneurship and mathematics in primary schools, finding that students who engaged in entrepreneurial activities alongside mathematics learning demonstrated improved problem-solving skills and a greater ability to apply mathematical concepts in real-world contexts. Their study highlights the potential of interdisciplinary approaches to enhance both mathematical and entrepreneurial competencies.

Similarly, Garcia and Patel (2021) investigated the intersection of mathematics education and entrepreneurial skills development among junior secondary school students. Their findings revealed that students who participated in mathematics-based entrepreneurial projects showed significant improvements in financial literacy, critical thinking, and innovation. These results underscore the importance of integrating practical, real-world applications into mathematics curricula to foster entrepreneurial skills.

Guberman and Hativa (2015) examined teachers' perceptions of integrating entrepreneurship education into mathematics education. Their study found that teachers who incorporated entrepreneurial concepts into their mathematics lessons reported increased student engagement and motivation. However, the study also identified challenges, such as the need for additional training and resources to effectively implement interdisciplinary approaches. These findings highlight the importance of providing educators with the support they need to successfully integrate entrepreneurship and mathematics education. Integrating mathematics education with entrepreneurship development is crucial for fostering economic diversification in Kwara State, Nigeria. By bridging the gap between theoretical mathematical knowledge and practical entrepreneurial applications, students can develop the necessary skills to drive economic growth and address socio-economic challenges. A deliberate effort from policymakers, educators, and stakeholders is essential in designing curricula that effectively incorporate entrepreneurial principles, ultimately contributing to sustainable development in Nigeria.

Concept of Entrepreneurship Education

Entrepreneurship education is a structured learning process designed to equip individuals with the knowledge, skills, attitudes, and competencies needed to identify and pursue business opportunities, launch and manage enterprises effectively. It cultivates creativity, innovation, problem-solving abilities, and self-reliance, all crucial traits for entrepreneurial success. This type of education is widely recognized as a key driver of economic growth and job creation, empowering individuals to generate wealth, combat unemployment, and contribute to the socio-

economic development of their communities (Isiaka, 2023). In the rapidly evolving landscape of modern education, entrepreneurship has emerged as a critical discipline bridging the gap between academic knowledge and practical economic diversification, especially in Kwara State.

In Nigeria, entrepreneurship education has been identified as a vital tool for addressing persistent economic challenges. Self-employment, fostered through entrepreneurship and vocational training, is a viable solution to the country's unemployment problem (Odia, 2019). The integration of entrepreneurship education into academic curricula has proven particularly significant in developing economies, where it has emerged as a strategic response to persistent graduate unemployment challenges (Ternenge et al., 2020). Furthermore, entrepreneurship education has been recognized as a potential means of addressing security challenges in Nigeria. By empowering citizens with entrepreneurial skills, individuals are better equipped to create economic opportunities, thereby potentially reducing the likelihood of their involvement in activities that threaten national security (Chimezie, 2022). This aligns with broader national goals of economic diversification and stability.

The integration of entrepreneurship education within universities has demonstrated a positive influence on venture creation among graduates. Structured entrepreneurship programs within institutions are essential for nurturing the entrepreneurial potential of young people, leading to increased venture creation and contributing to economic development (Isiaka, 2023). Entrepreneurship education contributes to sustainable national development by equipping individuals with the adaptability and resilience needed to thrive in dynamic economic environments. This adaptability is particularly relevant in an era of rapid technological change and global economic shifts (Azeez et al., 2023).

In essence, entrepreneurship education is not simply about launching new businesses; it is about fostering an entrepreneurial mind-set applicable across diverse sectors. It prepares individuals to navigate uncertainty, adapt to dynamic market conditions, and effectively utilize available resources for sustainable growth. By integrating entrepreneurial principles into education systems, Kwara State can cultivate innovative thinkers who drive technological advancements and create wealth-generating enterprises, ultimately contributing to a more diversified and resilient economy (Asika, 2021).

Roles of Entrepreneurship Education in National Development

Entrepreneurship education plays a crucial role in fostering national development by contributing to various interconnected areas.

Economic Growth and Job Creation: By equipping individuals with the necessary skills for self-employment and enterprise creation, entrepreneurship education directly addresses unemployment

challenges. This form of education goes beyond simply preparing individuals for existing jobs; it cultivates an entrepreneurial mind-set that empowers them to generate new opportunities, stimulating economic growth and alleviating poverty.

Furthermore, entrepreneurship acts as a catalyst for Rural Development by empowering individuals to establish small-scale businesses, leading to economic decentralization and regional progress in places like Kwara (Ogundele et al., 2012).

At a national level, there is a significant contribution of entrepreneurship to GDP Growth through the establishment of innovative startups that unlock untapped economic potential, particularly in developing economies (Jain, 2023).

Beyond economic impacts, entrepreneurship education is vital for Innovation and Technological Advancement. Innovation is a cornerstone of entrepreneurial activity in Kwara State, and the education process fosters creativity and critical thinking, essential ingredients for successful innovation. Responsible entrepreneurship education equips students with the skills to address complex societal problems and adapt to the rapid pace of technological advancements, ensuring a workforce prepared for the demands of Industry 4.0 (Igwe et al., 2021). It is therefore important to integrate technological skills into entrepreneurship curricula, enabling individuals to create tech-driven solutions and enhance productivity across various sectors (Azeez et al., 2023).

Entrepreneurship education also plays a key role in promoting Social and Environmental Welfare. Increasingly, the focus is on sustainability and societal impact. Entrepreneurial ventures can contribute to social and environmental well-being by tackling pressing issues such as unemployment, inequality, and environmental degradation. Entrepreneurship education can instill a strong sense of social responsibility, encouraging the development of ventures that prioritize the triple bottom line: profit, people, and the planet (Neumann, 2021).

The integration of core disciplines, especially mathematics, is fundamental to effective entrepreneurship education. Mathematics education strengthens analytical and problem-solving skills, both critical for sound decision-making in entrepreneurial contexts. High-quality mathematics instruction should be a core component of entrepreneurship programs to develop the necessary cognitive skills for business planning and financial management (Okwegye, 2024).

For entrepreneurship education to achieve its full potential, supportive policies and institutional frameworks are essential. The Kwara State Government should implement policies that actively support small business startups, such as improved access to funding, robust mentorship programs, and streamlined business registration processes. They emphasize the vital role of entrepreneurship education in reducing graduate unemployment by preparing individuals for self-employment, thereby encouraging economic diversification in Kwara State (Adeeko et al., 2022). Building a

strong partnership between educational institutions, government bodies, and the private sector to ensure that entrepreneurship education aligns seamlessly with national development goals will further help achieve economic diversification (Azeez et al., 2023).

Roles of Mathematics Education in Entrepreneurship Education

Mathematics education is a cornerstone of entrepreneurial skill development, providing individuals with the analytical tools and cognitive frameworks crucial for success in the business world. The integration of mathematical principles into entrepreneurship education goes beyond simply enhancing problem-solving abilities; it fosters innovation, cultivates financial literacy, and equips individuals with the capacity for strategic planning. Mathematics education plays the following crucial roles in entrepreneurship education:

Provision of Analytical and Problem-Solving Skills: A solid understanding of mathematics cultivates critical thinking and problem-solving skills, which are absolutely essential for identifying opportunities, rigorously assessing risks, and developing effective solutions in entrepreneurial endeavors. Mathematics education empowers individuals to dissect complex situations, analyze data, and make informed decisions in a variety of business contexts (Lawal et al., 2023). Mathematics education significantly enhances students' capacity to analyze complex scenarios, leading to more informed and strategic decision-making in the dynamic world of business. This ability to think analytically and approach problems systematically is a key differentiator for successful entrepreneurs.

Providing Financial Literacy and Budget Management: Proficiency in mathematics provides aspiring entrepreneurs with the tools they need to effectively manage their finances. This includes essential skills such as budgeting, financial forecasting, and in-depth financial analysis. A strong mathematical foundation enables entrepreneurs to understand financial statements, track cash flow, and make informed investment decisions. A practical, real-world-oriented mathematics curriculum can stimulate students' interest and creativity, leading to the generation of innovative ideas and solutions within entrepreneurial ventures (Inah et al., 2022). This connection between mathematical understanding and financial acumen is crucial for long-term business sustainability.

Innovation and Creativity: The logical and structured nature of mathematics encourages innovative thinking, empowering entrepreneurs to develop unique solutions and create novel products or services. When students engage with mathematical concepts and problem-solving, they learn to approach challenges systematically, explore a range of possibilities, and devise creative and effective strategies—traits that are invaluable in the competitive entrepreneurial world. Mathematics fosters an ability to think outside the box, to see patterns, and to apply logical reasoning to create something new. Mathematics education forms the bedrock of societal

transformations, facilitating the crucial transfer of abstract ideas into tangible reality through innovative applications.

Experiential Learning and Practical Application: Integrating experiential learning approaches into mathematics education can significantly enhance the development of entrepreneurial skills. This will help to move beyond abstract concepts to real-world scenarios and is achievable through practical, application-focused mathematics curricula that directly engage students in real-world situations, bridging the gap between theoretical knowledge and practical execution (Lawal et al., 2023). Such experiential learning opportunities, like simulations, case studies, and real business projects, prepare students to confidently navigate the inherent complexities of entrepreneurial endeavors.

Contributing to National Economic Development: The impact of mathematics education extends beyond individual empowerment and contributes significantly to state and national economic growth. By equipping young people with entrepreneurial skills, mathematics education plays a crucial role in job creation, poverty reduction, and economic diversification and development. A mathematically literate populace in Kwara State is better equipped to contribute to a thriving and diversified economy. A strong foundation in mathematics is crucial for training young people in a variety of essential skills, including entrepreneurship, which are vital for revitalizing, diversifying, and strengthening Kwara State's economy. By fostering a generation of mathematically competent entrepreneurs, nations can stimulate innovation, drive economic diversification, and build a more resilient and prosperous future (Sodangi et al., 2023).

Constraints of Entrepreneurship Education in Nigeria

Entrepreneurship education is crucial for driving economic growth and diversification, reducing unemployment, and fostering self-reliance among the people of Kwara State. However, the effective implementation of such programs faces significant obstacles, as highlighted in various studies. Some of these constraints include:

Inadequate Funding: This financial constraint hinders the acquisition of essential resources, the development of necessary infrastructure, and the organization of practical, hands-on training sessions. According to Amadi et al. (2019), the detrimental impact of limited funding on the implementation of entrepreneurship education is a situation that is mirrored across the nation.

Shortage of Qualified Educators: Many institutions struggle to find personnel with the necessary expertise to effectively deliver entrepreneurship courses. The scarcity of qualified instructors as a major obstacle further underscores the need for investment in educator development (Prince et al., 2020).

Theoretical Curriculum with Limited Practical Exposure: This often presents a problem, as this imbalance leaves graduates ill-prepared to translate entrepreneurial concepts into real-world business scenarios. Therefore, there is a critical need for integrating practical training into entrepreneurship education programs to enhance wealth creation and contribute to economic development and diversification in Kwara State and in Nigeria (Ternenge et al., 2020).

Policy and Curriculum Inconsistencies: The lack of a standardized curriculum and a coherent policy framework can lead to inconsistencies in program delivery across different institutions, creating uneven learning experiences. There is an urgent need for a well-structured curriculum and supportive policies to address these inconsistencies and ensure quality and uniformity (Azuka, 2018).

Societal Perceptions and Attitudes: Negative societal views of entrepreneurship as a viable career path can deter students from fully engaging with entrepreneurship education. Societal preferences often favor traditional white-collar jobs over entrepreneurial ventures, negatively impacting students' enthusiasm and participation in entrepreneurship-focused programs (Olanrewaju, 2024).

Inadequate Infrastructure and Learning Facilities: Many institutions lack the necessary infrastructure and facilities to support effective entrepreneurship education, limiting students' opportunities to gain hands-on experience. Inadequate facilities are a substantial impediment to the successful implementation of impactful entrepreneurship education programs in Kwara State and Nigeria as a nation (Ogwu, 2020).

To address these multifaceted challenges, several important strategies have to be adopted, including:

- Increased funding to enhance infrastructure, procure necessary learning materials, and facilitate practical training sessions.
- Capacity building for educators through targeted training and professional development to ensure they possess the skills and knowledge to effectively teach entrepreneurship.
- Comprehensive curriculum overhaul to incorporate more practical components, better preparing students for real-world entrepreneurial activities.
- Development of a standardized curriculum and a coherent policy framework to ensure consistency in program delivery across institutions in Kwara State.
- Public awareness campaigns aimed at changing societal perceptions, helping to shift attitudes toward entrepreneurship and promote it as a respectable and viable career path.

- Investing in adequate infrastructure and learning facilities to provide students with the necessary environment to gain practical, hands-on experience and develop their entrepreneurial skills.

By strategically addressing these constraints, Kwara State can significantly enhance the effectiveness of its entrepreneurship education programs, ultimately contributing to economic growth, diversification, job creation, and sustainable development within the state.

Strategies to Develop Entrepreneurship for Sustainable Self-Reliance of Nigerian Graduates

Entrepreneurship education is a vital pathway to sustainable self-reliance and economic development in Nigeria. Equipping graduates with the skills and knowledge to recognize and capitalize on business opportunities empowers individuals, fuels innovation, and contributes significantly to job creation.

Enhancing Entrepreneurial Skills: Numerous studies highlight the critical need to equip graduates with a diverse and robust set of entrepreneurial skills. Nigerian tertiary institutions should cultivate essential skills, including critical thinking, problem-solving, creativity, innovation, communication, and teamwork. These skills are fundamental for identifying and pursuing business opportunities, effectively navigating market challenges, and building sustainable and successful enterprises (Okoro, 2021).

Fostering Entrepreneurial Self-Efficacy: Entrepreneurial self-efficacy, defined as an individual's belief in their capacity to successfully launch and manage a business, is a crucial driver of entrepreneurial success (Osador et al., 2021). Entrepreneurship education programs should prioritize enhancing students' self-belief by providing ample opportunities to develop their skills, gain practical experience in real-world settings, and learn to overcome challenges. This can be effectively achieved through activities such as mentorship programs connecting students with established entrepreneurs, engaging business plan competitions, and providing access to incubation centers.

Cultivating Entrepreneurial Orientation: The importance of cultivating a strong entrepreneurial orientation among graduates cannot be overemphasized. This involves developing a proactive and innovative mindset, balanced with calculated risk-taking. Entrepreneurship education programs should actively encourage students to think creatively and outside traditional boundaries, identify and strategically pursue emerging opportunities, and develop a proactive and solution-oriented approach to problem-solving (Na-Allah et al., 2022).

Implementing Effective Pedagogical Approaches: Effective pedagogical approaches that prioritize active learning, critical thinking, and real-world application should be adopted. These

approaches can include incorporating case studies of real businesses, engaging simulations of business environments, inviting guest lecturers from successful entrepreneurs, and facilitating internships with established businesses. Experiential learning opportunities, such as business plan competitions and participation in incubation programs, offer invaluable practical experience and significantly enhance entrepreneurial skills (Igwe et al., 2022).

Addressing Curriculum Issues: There is a critical need to address existing curriculum issues to effectively integrate entrepreneurship education into tertiary programs. This may involve incorporating dedicated entrepreneurship modules into existing courses across various disciplines, developing specialized and focused entrepreneurship programs, and ensuring that the curriculum is consistently relevant to the evolving needs of the Nigerian economy and the dynamic demands of the modern job market (Wilfred-Bonse et al., 2019).

Creating a Supportive Ecosystem: Building a supportive ecosystem for entrepreneurship is essential for fostering entrepreneurial success among graduates. This includes ensuring access to crucial resources such as funding opportunities, mentorship programs, and valuable networking opportunities. Government initiatives, such as providing access to micro-credit facilities, establishing and supporting business incubators, and creating technology parks, can play a pivotal role in supporting and empowering aspiring entrepreneurs.

Addressing the Role of Educators: The success and impact of entrepreneurship education programs in Kwara State are heavily dependent on the quality of instruction. Educators must be equipped with the necessary knowledge, skills, and pedagogical expertise to effectively deliver entrepreneurship education. This requires providing teachers with ongoing professional development opportunities, such as specialized workshops, targeted training programs, and access to relevant and up-to-date resources.

Developing a robust and effective entrepreneurship education system in Nigeria demands a multi-pronged and holistic approach. By strategically focusing on enhancing entrepreneurial skills, fostering entrepreneurial self-efficacy, cultivating a strong entrepreneurial orientation, implementing effective and engaging pedagogical approaches, addressing existing curriculum issues, creating a supportive ecosystem for entrepreneurs, and empowering educators, Nigeria can effectively equip its graduates with the essential skills and knowledge needed to become successful entrepreneurs and contribute meaningfully to the nation's economic growth and sustainable development.

Statement of the Problem

Cultivating an entrepreneurial mind-set among the students in secondary schools is essential for addressing unemployment and stimulating economic growth and diversification. Mathematics

education plays a crucial role in this process by equipping learners with problem-solving, logical reasoning, and analytical skills that are fundamental to entrepreneurial success. Also teachers' strategies in developing mathematical skills in skill acquisition is very important. Therefore, integrating entrepreneurial concepts into mathematics curricula can empower students to identify skills for business opportunities and other areas.

The situation of unemployment in the Nigeria today call for attention of all stakeholders. To curb this trend and to minimize overdependence on white collar job, entrepreneurship education must continue to give priority to at all level of education in the country. Therefore, this paper examines the role of teaching and learning of mathematics for entrepreneurial skills development among secondary school students in Kwara State, Nigeria.

Objective of the Study

The purpose of this study is to investigate the role of teaching and learning mathematics for entrepreneurship development. Specifically, the study sought to investigate the following:

1. To know the role of mathematics in entrepreneurial development;
2. To identify the strategies to adopt by mathematics teachers to develop entrepreneurial skills in the students; and
3. To examine students' perceptions of relevance of mathematics based on intention to work after school;

Research methodology

The descriptive design was employed for the research. Nworgu (2006) defined descriptive survey as research that aims at gathering data on and describing in systematic manner, the characteristic features of a defined population. This design is adopted because it is not possible to randomize the subjects of the study without destructing the school setting.

Population

The population of the study was the mathematics teachers and students in secondary schools in Kwara state of Nigeria.

Sample and sampling technique

The sample consisted of 134 mathematics teachers and 167 from the selected secondary schools in Kwara state. The instrument for collection of data from respondents was questionnaire designed by the researchers for the teachers and students. This is subdivided into three parts. Part A measures demographic information such as name of school, sex, working experience and student teachers ratio while part B contains 15 items that have their primary focus on quality assurance for effective

teaching and learning of mathematics. The questionnaire is structured on four-point Likert scale of Strongly agree (SA) Agree (A), Disagree (D), Strongly Disagree (SD) with nominal value of 4, 3, 2 and 1 assigned to them respectively.

Validity of the Instrument

Teaching and learning of Mathematics for the development of entrepreneurship for economic development in Kwara state (TLMDED) questionnaire designed items were validated by two lecturers from Federal College of Education Kontagora, Niger State. One lecturer in educational Psychology/counselling and one lecturer in Mathematics Departments. They were required to ascertain whether the contents of the (TLMDED) and clarity of expression were appropriate in the instrument with respect to the level of the respondents. Based on their suggestions, the necessary corrections and modifications were made; and the validity of the test items was found to be within the ability level of the respondents.

Reliability of the Instruments

The result of the pilot study was used to determine the reliability coefficient of the instrument. To test the reliability of the questionnaire items, a split-half method was adopted. Cronbach alpha-20 (α_{20}) was employed to estimate the reliability coefficient of the Likert's scale test items and was found to be 0.83. The result shows that the test items were consistent and could be used for data collection of this study.

Procedure for Data Collection

The instrument for data collection was administered to the teachers and students in the sampled schools. The information gathered from the administration of this instrument was used to evaluate the role of teaching and learning of mathematics for the development of entrepreneurship in Kwara state

Procedures for Data Analysis

In analysis, strongly agree and agree were summed up. Similarly strongly agree and disagree were summed up before finding the percentages. After the administration of research instrument, the questionnaires were scored by the researchers for all the respondents. The data collected was analysed using descriptive statistics of mean and standard deviation to answer the research questions.

RESULTS AND DISCUSSION**Research Question 1****Does mathematics education provide entrepreneurial skills?****Table 1: Extent to which Mathematics Education Provide Entrepreneurial Skills**

Items	A (%)	D (%)	Mean	Std. Dev
The knowledge of Mathematics will help students to start their business on their own after graduating from school	82.4	17.6	3.3	1.5
Mathematics provides knowledge for logical reasoning	95.8	4.2	3.9	0.4
Mathematical skills acquisition help me in everyday situations.	81.8	18.2	3.6	0.8
It provides knowledge for estimation and approximation, that is, in estimating quantity, length, distance.	94.5	5.5	3.9	0.5
The knowledge of mathematics operations (i.e. +, -, ÷, ×) provide necessary growth in business	95.8	4.2	3.9	0.4
Students that are mathematically inclined are innovative when it comes to entrepreneurial activities	92.7	7.3	3.9	0.5
The knowledge of mathematics help students to see the relationship between mathematics and business.	95.8	4.2	3.9	0.4
Average Mean			3.8	
Decision Rule > 2.5 Agreed, < 2.5 Disagreed				

The result in table 1 shows that 82.4% (majority) of the respondents agreed that mathematics provides students with skills which enhances their self-employability after graduating from school. The result further revealed that majority (95.8%) of the students agreed that mathematics skills provide them with knowledge for reasonable thinking. Additionally the finding opined that 81.8% (majority) of the respondents declared that acquiring mathematics skills help them in their daily situations. More so it was discovered that higher percentage (94.5%) of the respondents agreed that mathematics skills provide understanding in estimating quantity, length and distance. Similarly the result revealed that 95.8% (majority) of the respondents agreed that acquiring mathematics skills enhances necessary business growth. In the same manner the result shows that majority (92.7%) of the students agreed that students who are mathematics inclined are innovative. Also it was discovered that 95.8% (majority) of the respondents agreed that mathematics skills exposes students to understand the link between mathematics and business. From the finding it is deduced that mathematics provides students with entrepreneurial skills which enhances their success in business after graduating from school, because the average mean which is 3.8 is > than 2.5 the decision rule. This result agrees with Garcia and Patel (2021) which revealed that students who participated in mathematics-based entrepreneurial projects showed significant improvements in financial literacy, critical thinking, and innovation.

Research Question 2

What are the strategies to adopt by mathematics teachers to develop entrepreneurial skills in the students?

Table 2: Strategies Adopted by Teachers to develop Entrepreneurial Skills in Students

Items	A (%)	D (%)	Mean	Std Dev
Maintaining minimum standard	71.2	28.8	3.1	1.5
Teaching for mastery	93.2	6.8	3.9	0.5
Use of appropriate teaching methods	97.0	3.0	3.9	0.7
Allow students to involve in practical activities	97.0	3.0	3.9	0.7
Give enough assignments	93.9	6.0	3.8	0.8
Strictly adhere to curriculum content	90.9	9.1	3.8	0.6
Make use of qualified teachers	97.0	3.0	3.9	0.7
Adequate preparation before going to class	97.0	3.0	3.9	0.7
Encouragement of group activities during instruction	95.5	4.5	3.9	0.4
Mental assessments	90.0	9.1	3.8	0.6
Average Mean				3.8

The result shows that 71.2% (majority) of the respondents agreed on the maintaining minimum standard by the teachers for skills development. 93.2% respondents agreed on teaching for mastery as a strategy for developing skill. Also appropriate usage of teaching methods and students involvement in practical activities was identified respectively by majority (97.0%) of the respondents to develop entrepreneurial skill in student. This agrees with Abakpa and Agbo-Egwu (2014) which stated that teaching for mastery, mental assessment, engaging students in practical activities are strategies for developing entrepreneurial skills. In the same manner, the result shows that larger number (93.9%) agreed that given enough assignments is another way of entrepreneurial skill development in students.

Furthermore the result revealed that 90.9% (majority) established that adherence to the curriculum content strictly is an approach to skilfully develop students for entrepreneurial activities. Also 97.0% of the respondents respectively identified use of qualified teachers and adequate preparation by teachers as a procedure for developing students for entrepreneurial skill. In the same way the study shows that 95.5% of the respondents approved encouragement of group activities during instruction as a way to develop business skills in students. Also 90.9% agreed on mental assessments as an approach to develop business fitness in students. From the finding it is inferred that all the approaches identified in this study were adopted by teachers to develop business skills

in students because the average mean (3.8) is greater than 2.5. These results are supported by Guberman and Hativa (2015). Their study found that teachers who incorporated entrepreneurial concepts into their mathematics lessons reported increased student engagement and motivation. Fada et al (2017) agreed that entrepreneurship education prepares students to establish career in entrepreneurship. Omokaro, B & Nwanunu, P. (2019). The study revealed that mathematics education plays a significant role in the development of entrepreneurial skills among secondary students.

CONCLUSION

This study explores the role of teaching and learning mathematics in fostering entrepreneurship and its implications for economic diversification in Kwara State, highlighting that mathematical knowledge is fundamental to entrepreneurial success, particularly in areas such as financial literacy, problem-solving, critical thinking, and decision-making. Effective mathematics education equips learners with the skills necessary to manage businesses, analyse market trends, and optimize resources efficiently.

Furthermore, the study emphasizes the need for an innovative and practical approach to mathematics education, integrating real-world business applications to make learning more relevant and impactful. Challenges such as inadequate instructional resources, outdated curricula, and poor teaching methodologies have been identified as barriers to maximizing the potential of mathematics education for entrepreneurship.

Recommendations. The following suggestions are made

1. There is need for an innovative and practical approach to mathematics education,
2. There should be curriculum adjustments to accommodate entrepreneurship education.
3. Teachers' training should be done at well due.
4. Incorporation of technology should be encourage.
5. Experiential learning methods should be adopted by the teachers.

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