



Application of the NFTE Model in Evaluating Entrepreneurial Competencies of Technical Education Lecturers in a Nigerian University

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Abstract

This study examined the level of Entrepreneurship competencies of Technical Education lecturers at Ignatius Ajuru University of Education, Rivers State. The study employed the Network for Teaching Entrepreneurship (NFTE) model. The ten (10) dimensions of entrepreneurship competencies were simplified into three core competencies: personal, cognitive, and social entrepreneurship competencies. The study was guided by three research objectives, three research questions, and three hypotheses. The study population was made up of all 54 Academic Staff in the Department of Technical Education, IAUE, Rivers State. The study adopted a descriptive survey design. The instrument for data collection was a structured questionnaire which used a four-point Likert scale of frequency. The instrument was validated for face and content validity by experts from Rivers State University. A Cronbach's Alpha of 0.85 demonstrated that the instrument was reliable. The study established that Technical Education lecturers possessed a low level of personal entrepreneurial competencies, indicating limited demonstration of entrepreneurial attributes such as risk-taking propensity. In contrast, the lecturers demonstrated moderate levels of both cognitive and social entrepreneurial competencies, suggesting an appreciable capacity for entrepreneurial thinking, problem-solving, communication, collaboration, creativity, and adaptability. The study concludes that Technical Education lecturers possess a moderate entrepreneurial competency profile within the NFTE framework, characterised by relatively stronger cognitive and social competencies but weaker personal entrepreneurial attributes. Based on the findings, the study recommended that Universities should facilitate participation in entrepreneurship conferences, innovation boot camps, design-thinking workshops, and collaborative research projects with industry partners.

Keywords: Entrepreneurial Competencies, Technical Education, NFTE Model, Cognitive Entrepreneurship, Social Entrepreneurship

Introduction

Entrepreneurship education has been recognised as a key means to foster innovation, entrepreneurship, and economic growth in both developed and developing countries. The level of unemployment among graduates and the transformation of the global labour market have driven higher education institutions to seek to accommodate entrepreneurship in their programs (Koko & Owen, 2022; Cyril-Nwuche, 2025). Andah et al. (2019) and Tahan (2025) noted that entrepreneurial education positively impacts learners' entrepreneurial intentions, entrepreneurial opportunity recognition, and entrepreneurial venture creation. However, Mico and Cungu (2023) argued that the effectiveness of entrepreneurship education is not only in the contents of the program, but also in the entrepreneurial experience of the persons delivering the program. In this context, lecturers of technical education are expected to play a critical role as they are supposed to provide technical skills to students as well as their entrepreneurial skills. Thus, it is important to understand the entrepreneurial competencies of technical education lecturers to know if they are equipped to develop entrepreneurial mindsets of students.

Entrepreneurial competency has been the subject of widespread research in entrepreneurship because of its influence on one's ability to spot opportunities, address problems, handle uncertainty, and develop value. Research has indicated that people with entrepreneurial orientations are more likely to exhibit initiative, creativity, adaptability, and persistence with challenges (AlQhaiwi & Abukaraki, 2021; Imaobong & Brownson, 2024; Ayeni, 2025). Lecturers with entrepreneurial competencies are more likely to be able to create innovative learning experiences, amplify experiential learning, and motivate students to participate in entrepreneurial activities in the educational environment (David, 2024; Rodrigues, 2023; Ekoh-Nweke et al., 2020). Although the entrepreneurial mindset has been identified as essential for students' learning and for the success of entrepreneurs, previous studies have mainly been centered around students and entrepreneurs (Kolajo et al., 2026), however, relatively few studies have been conducted on lecturers, especially lecturers in Technical Education programmes. This discrepancy raises problems in terms of how much lecturers are equipped with the entrepreneurial skills needed in implementing entrepreneurship-oriented education. The importance of the challenge increases with Technical Education, as it focuses on practice and is closely related to industry, innovation, and technological advancement. Technical Education programmes are expected to produce graduates who are employable and can create jobs through entrepreneurial activities. The findings from the higher education sector in Nigeria suggest that a significant number of graduates or students are still struggling to apply technical skills to create sustainable economic opportunities to support their activities (Olojuoluwa et al., 2022; Ofor-Douglas, 2024; Ahmadu & Orisaremi, 2025). This challenge may be because teaching entrepreneurship may not be sufficiently supported by lecturers, in addition to emphasizing the acquisition of technical skills. Thus, it is important to study the entrepreneurial attitude of the Technical Education lecturers to ascertain if they have the competencies to develop entrepreneurial skills among the technical education students.

The Network for Teaching Entrepreneurship (NFTE) model is one of the most widely recognised models used to evaluate entrepreneurial mindset. The NFTE model of entrepreneurial mindset is a set of attitudes, behaviours, and competencies that can help people recognize opportunities, take initiative, problem solve, manage risks, work collaboratively, and adapt to changing situations (Onasanya, 2025). The NFTE framework is beneficial in measuring entrepreneurial skills in various settings through empirical studies. The model offers a multi-dimensional view that goes beyond business creation to cognitive, personal, social, and innovative skills (Onasanya, 2025). It could thus provide a feasible basis for evaluating the entrepreneurial orientation of Technical Education lecturers who have to do technical work, innovate, and be entrepreneurial.

The review of the entrepreneurship literature showed that entrepreneurial competencies are frequently divided into three areas: personal competencies, cognitive competencies, and social competencies (Onasanya, 2025; Almeida & Buzady, 2019; Venesaar et al., 2022). According to Pepple and Enuoh (2020), Personal entrepreneurial competencies encompass characteristics that affect a person's readiness to act and to try to move forward with an opportunity in the face of uncertainty, such as being willing to take risks, being self-reliant, and being very entrepreneurial. Ndeti et al. (2022) explained that cognitive competencies include opportunity recognition, problem solving, and critical thinking, which allow people to examine a circumstance and come up with solutions and opportunities to create value. Social competencies are related to communication, collaboration, creativity, and adaptability, enabling effective communication, teamwork, innovation, and responding to environmental change (Sandrotto et al., 2024). While these skills have been extensively described both in the literature and among students and entrepreneurs, their performance by Technical Education lecturers is not fully documented, especially in a university setting in Nigeria.

The present study makes a valuable theoretical contribution by generalizing the application of the NFTE model to the Higher Education context of Technical Education. The previous studies mainly concentrated on entrepreneurial thinking of students, entrepreneurs, and business people, but this study goes in the direction of the entrepreneurial thinking of the lecturers as facilitators of entrepreneurial learning. The study is relevant to educational administrators, curriculum planners, policy makers, and providers of professional development. The profile of the Entrepreneurial competency of the Technical Education lecturers can help in determining the required staff development programme, entrepreneurship training programme, and curriculum improvement programme. Thus, this could become vital to enhancing the quality of entrepreneurship education and enhancing the capacity of Technical Education programmes to produce innovative and self-reliant graduates. This study has a general aim of implementing the Network for Teaching Entrepreneurship (NFTE) model in determining the entrepreneurial competency of the Technical Education Lecturers of Ignatius Ajuru University of Education, Rivers State. In particular, the study aims to evaluate, for lecturers, the personal entrepreneurial competencies (initiative, self-reliance, comfort with risk); cognitive entrepreneurial competencies (critical thinking, problem solving, opportunity recognition); and social and innovative

entrepreneurial competencies (communication, collaboration, creativity, flexibility/adaptability). What is the level of personal Entrepreneurial competencies of Technical Education lecturers? How high are the cognitive entrepreneurial competencies of Technical Education lecturers? How much social and innovative entrepreneurial competence do the Technical Education lecturers have? The following null hypotheses are also tested in the study: There is no significant difference between the mean rating of male and female Technical Education lecturers with respect to their personal entrepreneurial competencies, cognitive entrepreneurial competencies, and social and innovative entrepreneurial competencies.

Methodology

The study adopted a descriptive survey design with the Network for Teaching Entrepreneurship (NFTE) framework to assess the entrepreneurial competencies of Technical Education lecturers of Ignatius Ajuru University of Education, Rivers State. The survey design was found to be suitable as it allowed data to be collected on the entrepreneurial competencies of the lecturers in the three aspects, namely personal, cognitive, and social-innovative. The study population consisted of all fifty-four (54) lecturers of Technical Education in Ignatius Ajuru University of Education. The population size was relatively small, and, therefore, a census approach was taken, and every member of the population was included in the study. This method removed sampling error and allowed for an appropriate sample population representation. Data was gathered with a semi-structured questionnaire that was created based on the entrepreneurial mindset framework from the NFTE. The instrument measured three general areas of entrepreneurial skills: personal entrepreneurial skills (initiative, self-reliance, risk taking), cognitive entrepreneurial skills (critical thinking, problem solving, seeking out opportunities), and social and innovative entrepreneurial skills (communication, teamwork, creativity, flexibility/adaptability). The responses were rated on a 4-point scale from 1 to 4. The Likert scores were transformed into competency scores. Competency scores ranging from 1.00 to 2.00 were interpreted as representing low competency; competency scores of 3.00 indicated moderate competency, and competency scores of between 4.00 and 5.00 indicated high competency. The instrument was expertly validated for content relevance and clarity. The instrument was also tested for reliability through Cronbach's alpha coefficient, which proved the internal consistency of the instrument. The Cronbach Alpha Statistics was estimated to be 0.85. The questionnaire was directly administered to the respondents, and data were obtained. The descriptive statistic namely mean and standard deviation, were employed to address the research questions and to find the level of entrepreneurial competencies of the lecturers. An independent samples t-test was used to test the study hypotheses at the 0.05 level of significance. The choice of the t-test was guided because the researcher wanted to compare the mean scores of entrepreneurial competencies of two independent groups (male and female lecturers). The Statistical Package for the Social Sciences (SPSS) 27 computer software was employed for the statistical analysis.

Results

Demographic Distribution of Respondents

The figure below is the gender distribution of the respondents.

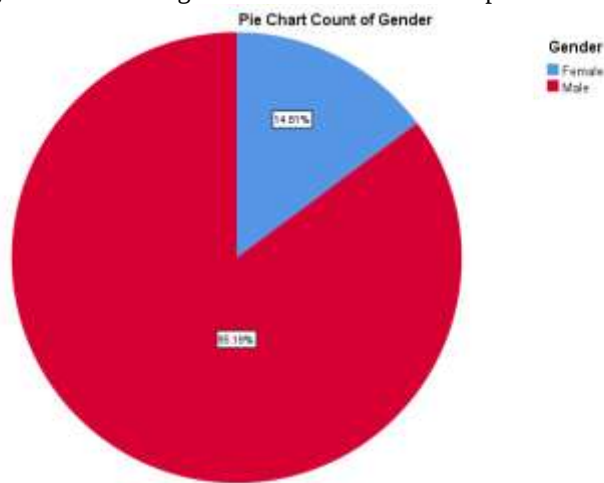


Figure 1: Gender profile of Technical Education Lecturers in IAUE

The gender distribution of the respondents is presented in Figure 1. The result shows that the majority of the Technical Education lecturers were male, accounting for 85.19% of the total respondents, while female lecturers constituted 14.81%. This finding indicates a substantial gender imbalance within the Department of Technical Education at Ignatius Ajuru University of Education, with males representing more than four-fifths of the study population. The dominance of male lecturers may reflect the traditionally male-oriented nature of technical and vocational education disciplines in many higher education institutions. Nevertheless, the presence of female lecturers demonstrates that the field is gradually becoming more inclusive and diverse. The gender distribution provides important contextual information for the study, particularly in relation to the hypothesis testing, which examines whether significant differences exist in entrepreneurial competencies based on gender.

Table 1: Level of Personal Entrepreneurship Competencies of Technical Education Lecturers in IAUE

Entrepreneurship Competencies	N	Total Score	Mean Score	Level
Personal Entrepreneurship	54	129	2.0	Low

Table 1 presents the level of personal entrepreneurial competencies of Technical Education lecturers at Ignatius Ajuru University of Education. The result shows that the respondents obtained a total score of 129, yielding a mean score of 2.0. Based on the study's rating scale, where a mean score of 2.0 indicates a low level of competency, the result suggests that the lecturers possess a low level of personal entrepreneurial competencies.

Table 2: Summary of Independent t-test on the mean score of personal Entrepreneurship competencies between Male and Female technical Education Lecturers in IAUE

Variable	Group	N	Mean	SD	t	df	p-value	Decision
Personal Entrepreneurship Competencies	Male	46	2.9347	0.2496	-0.733	52.0	0.467	Not Significant
	Female	8	3.0000	0.0000				

From Table 2, Levene's test indicated that the assumption of homogeneity of variances was met, $F(1,52) = 2.484$, $p = .121$. The results showed no statistically significant difference between the two groups, $t(52) = -0.733$, $p = .467$. Therefore, gender did not significantly influence the entrepreneurial mindset scores of Technical Education lecturers. Thus, Male and female Technical Education lecturers exhibit comparable levels of entrepreneurial competencies.

Table 3: Level of Cognitive Entrepreneurship Competencies of Technical Education Lecturers in IAUE

Entrepreneurship Competencies	N	Total Score	Mean Score	Level
Cognitive Entrepreneurship	54	175	3.0	Moderate

Table 3 presents the level of cognitive entrepreneurial competencies of Technical Education lecturers at Ignatius Ajuru University of Education. The result indicates that the respondents recorded a total score of 175, with a corresponding mean score of 3.0. Based on the study's rating scale, a mean score of 3.0 represents a moderate level of competency. This finding suggests that the lecturers possess a moderate level of cognitive entrepreneurial competencies.

Table 4: Summary of the independent t-test on the mean score of Cognitive Entrepreneurship competencies between Male and Female technical Education Lecturers in IAUE

Variable	Group	N	Mean	SD	t	df	P-value	Decision
Personal Entrepreneurship Competencies	Male	46	3.2391	0.4800	-0.059	52.0	0.953	Not Significant
	Female	8	3.2500	0.4629				

From Table 4, the result revealed no significant difference between male and female lecturers, $t(52) = -0.059$, $p = 0.953$. Therefore, the null hypothesis was retained, indicating that gender had no significant influence on the cognitive entrepreneurial competencies of the respondents. Therefore, both male and female lecturers demonstrate similar capacities in the cognitive dimensions of entrepreneurship as measured by the NFTE framework.

Table 5: Level of Social Entrepreneurship Competencies of Technical Education Lecturers in IAUE

Entrepreneurship Competencies	N	Total Score	Mean Score	Level
Social Entrepreneurship	54	172	3.0	Moderate

Table 5 presents the level of social entrepreneurial competencies of Technical Education lecturers at Ignatius Ajuru University of Education. The result shows that the respondents obtained a total score of 172, with a corresponding mean score of 3.0. Based on the study's rating scale, a mean score of 3.0 indicates a **moderate level of competency**. This finding suggests that the lecturers possess a moderate level of social entrepreneurial competencies.

Table 6: Summary of Independent t-test on the mean score of Social Entrepreneurship competencies between Male and Female technical Education Lecturers in IAUE

Variable	Group	N	Mean	SD	t	df	P-value	Decision
Personal Entrepreneurship Competencies	Male	46	3.2173	0.4170	3.536	45	0.001	Significant
	Female	8	3.0000	0.0000				

From Table 6, since Levene's test indicated unequal variances, $F(1,52) = 16.410$, $p < .001$, the Welch t-test result was interpreted. The analysis revealed a statistically significant difference between male and female lecturers, $t(45) = 3.536$, $p = .001$. Therefore, the null hypothesis was rejected, indicating that gender significantly influenced the social entrepreneurial competencies of the respondents. The result indicates that gender significantly influences the social entrepreneurial competencies of Technical Education lecturers. It further revealed that male lecturers exhibit higher social entrepreneurship than their female counterparts.

Discussion

Personal Entrepreneurship of Technical Education Lecturer in IAUE

The results indicated that the personal level of entrepreneurial competencies of Technical Education lecturers was low, with a mean score of 2.0. This trend indicates that lecturers lack entrepreneurial skills like initiative, self-confidence, self-reliance, persistence, and risk-taking ability. In the context of the NFTE model, Personal Competencies are the underlying behavioural traits that inspire people to seek out entrepreneurial opportunities and face challenges. The low rating noted could be because of the traditional nature of university lecturers, whose work is focused on teaching, research, and administration, and not on the creation of ventures or entrepreneurial practice. As a result, many lecturers might have limited experience with entrepreneurial experiences that would build their entrepreneurial mindsets. This is in contrast to the findings of Adegboye and Lebri (2026), who observed adequate personal entrepreneurship competencies for university lecturers in Kwara State, Nigeria. The difference could be attributed to the fact that universities in Kwara State may have stronger exposure to entrepreneurship development programmes, industry partnerships, or internally funded innovation initiatives that encourage lecturers to engage in entrepreneurial activities. Also, Adegboye and Lebri (2026) drew participants from a broader range of faculties or institutions where entrepreneurship exposure may be more embedded, whereas this study focused specifically on Technical Education lecturers in a single university. The hypothesis test also revealed that there was no significant difference between male and female lecturers for personal entrepreneurial competencies, which means that gender does not affect the personal entrepreneurial competencies of developing entrepreneurial dispositions in the study environment. This finding implies that Technical Education lecturers may have difficulties in successfully modelling entrepreneurial behaviours to students, which will then limit the development of entrepreneurial culture in the university setting. As facilitators of entrepreneurship education and role models, it is crucial that lecturers have a strong entrepreneurial competence in order to improve entrepreneurial outcomes among students and graduates, which can be strengthened through specific capacity-building workshops, mentoring programmes, participation in business incubation programmes, and experiential entrepreneurship training.

Cognitive Entrepreneurship of Technical Education Lecturer in IAUE

The results indicated that Technical Education lecturers had a moderate level of cognitive entrepreneurial skills with a mean score of 3.0. The development points to a medium average level of entrepreneurial thinking skills, including opportunity recognition, critical thinking, problem solving, decision making, and strategic analysis skills. Cognitive

skills are vital to the NFTE model as they help persons recognize market opportunities, assess options, come up with creative ideas, and make the right business choices. Moderate: Lecturers have developed a good entrepreneurial knowledge and entrepreneurial analysis through their studies and experiences. The competency level is, however, not sufficiently high for highly effective entrepreneurial leadership and teaching based on innovation. This is because, over the years, entrepreneurship education has been included in the curriculum of the Higher Education Institutions in Nigeria, exposing lecturers to the concepts and methodologies of entrepreneurship. This is in contrast to the findings of Chinda and Etokeren (2023), who observed low display of cognitive entrepreneurial competency among chemistry Education Lecturers in Ignatius Ajuru University of Education. The difference could be attributed to disciplinary differences. Technical Education is inherently more skill-based, application-driven, and practice-oriented compared to Chemistry Education, which is traditionally more concept-heavy and abstract. This can limit lecturers' exposure to entrepreneurial thinking contexts, resulting in weaker cognitive entrepreneurial development as observed by Chinda and Etokeren (2023). The hypothesis test did not show any significant difference between the male and female lecturers in cognitive entrepreneurial competencies, thus suggesting that both male and female lecturers have their own entrepreneurial reasoning and problem-solving skills. This study implies that although concepts of entrepreneurship can be successfully taught to students and entrepreneurial thinking can be facilitated by lecturers, there is ample scope to improve. It is, therefore, imperative for universities to put efforts into ongoing professional development programs to master and learn innovation management, opportunity recognition, design thinking, business modelling, and entrepreneurial problem solving. Improving these capabilities would allow lecturers to be better equipped to act as facilitators of entrepreneurial learning and/or innovation, which may help to improve the quality and effectiveness of entrepreneurship education in Technical Education programmes.

Social Entrepreneurship of Technical Education Lecturer in IAUE

The results showed that Technical Education lecturers had moderate social entrepreneurial competencies with a mean score of 3.0. This trend indicates that lecturers have a fair level of skills in communication, interaction, creativity, reacting to changes, and good working relationships. In the context of NFTE, social competencies are extremely important because entrepreneurship is a social process that involves networking, teamwork, negotiation, leadership, and engagement of stakeholders. The moderate grade might be explained by the collaborative nature of university work, with lecturers having frequent contacts on the teaching, research, supervision, committee, and professional levels. These activities, of course, help foster and enhance communication and interpersonal skills. This is in contrast to the findings of Chinda and Etokeren (2023), who observed low display of collaborative entrepreneurial competency of chemistry Education Lecturers in Ignatius Ajuru University of Education. The hypothesis test results showed that there is a gender difference in social entrepreneurial competency, which is statistically significant, where the male lecturers have more competencies than female lecturers. This result could be attributed to access to professional networks, opportunities for involvement in industry, professional leadership, and sociocultural differences that impact professional interactions in technical education settings. This suggests that institutional actions should be directed towards facilitating greater opportunities for collaboration, networking, mentorship, and entrepreneurial leadership development for women lecturers, in particular. Improving the social entrepreneurial skills of every lecturer would not only reinforce industry-academy linkages, increase entrepreneurial mentorship, promote entrepreneurial culture and increase the capacity of graduates to be more successful entrepreneurs in the current economic climate.

Conclusion

Entrepreneurial competencies of Technical Education lecturers were examined in this study using the model of the Network for Teaching Entrepreneurship (NFTE), which divides the entrepreneurial competencies into personal, cognitive, and social competencies. The results indicated different levels of competence in the three competency areas, which gave valuable insights into the entrepreneurial competencies of lecturers who develop entrepreneurial skills among students. The study found that the personal entrepreneurial competencies of Technical Education lecturers were low, which meant that the lecturers exhibited low levels of the entrepreneurial attributes demonstrated through initiative, self-confidence, self-reliance, and risk-taking. The lecturers had moderate entrepreneurial competencies in both cognitive and social aspects, indicating a significant entrepreneurial thinking capacity, problem solving, as well as communication and collaboration, creativity, and adaptability. The findings suggest that lecturers have the intellectual and interpersonal skills and competencies required for entrepreneurship education, but need to strengthen their personal entrepreneurial disposition in order to become more effective entrepreneurial role models and facilitators. Moreover, the study revealed that there was no significant difference between genders about personal and cognitive entrepreneurial competencies, meaning that male and female lecturers were found to have similar entrepreneurial competencies of personal and cognitive dimensions. However, there was a significant gender gap with

regard to the social entrepreneurial competencies, with male lecturers having higher scores on social entrepreneurial competence than female lecturers. This is due to the gender imbalance within the staff strength, thus there is need of equal opportunities for professional networking, cooperation, and development of entrepreneurial skills for all lecturers. The overall study findings indicate that the cognitive and social competencies of Technical Education lecturers in terms of the NFTE scale are relatively high, while the personal competencies of the lecturers are relatively low. The study believes that opportunities for entrepreneurial competency development will make a huge impact in developing an entrepreneurial atmosphere in Technical Education and in achieving national targets for innovation, self-employment, and sustainable economic growth.

Recommendations

Based on the findings of the study, the following recommendations were made.

1. Workshops, business incubation programmes, and entrepreneurial mentorship schemes should be integrated into staff development programmes to enhance lecturers' entrepreneurial mindset and ability to model entrepreneurial behaviour for students.
2. Universities should promote participation of staff in entrepreneurship conferences, innovation boot camps, design-thinking workshops, and collaborative research projects with industry partners.
3. Institutions should create mentorship networks, leadership training programs, interdisciplinary collaboration projects, and initiatives with industry partners that actively engage female lecturers.

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