



## Partnership between Colleges of Education and Industries as a Panacea for Developing Metalwork Technology Education (MTE) Students' Entrepreneurial Skills in North-East Nigeria

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### ABSTRACT

The study aimed at fostering Partnership Between Colleges of Education (Technical) and Industries for Developing Entrepreneurial Skills among Metalwork Technology Education Students (MTES) in North-East Nigeria. The research design was cross-sectional survey. The area of the study was North East Nigeria. The study population was 175 respondents, which included 25 Lecturers, 10 Technologies, and 80 NCE III students of Metalwork Technology Education Department from 5 colleges of education in North east Nigeria, in 2022/2023 academic session, and 60 industrial base supervisors. Multi stage sampling technique was used in the study. Firstly, convenient sampling technique was used to select North-East out of the three geo political zones of the study, purposive sampling technique was used to select 5 colleges of educations that offer Metalwork as a course in the study area. Also, the study stratified the participants according to their group (stratum) and 152 participants from population of the study were sampled by using simple random sampling. The instrument used for data collection was questionnaire and validated by two experts in Entrepreneurship and Technology Education. The Cronbach Alpha reliability coefficient of the instrument was 0.80. The data collected was analyzed Mean and standard deviation and Analysis of Variance (ANOVA). The findings of the study revealed among others that, there was high extent in developing practical skills when there is partnership between Educational Institution (EI) & Mechanical Engineering Industries (MEI). The findings also revealed that there was a statistically significant difference (at the  $p < .05$  level) on the extent to which Partnership between EI and MEI develop practical skills among the MTES. It was recommended that, in response to the positive impact on practical skills, educational institutions and mechanical engineering industries should further integrate a joint training program into the curriculum. Such programs could focus on measurement, metal cutting, and drilling operations, aligning education with industry needs.

### ARTICLE INFO

Article History

Received: September, 2023

Received in revised form: November, 2023

Accepted: May, 2024

Published online: June, 2024

### KEYWORDS

Partnership, Colleges of Education,  
Industries, Entrepreneurial Skills,  
Metalwork Technology Education

### INTRODUCTION

Mahadappa (2019), stated that the relevance of colleges of education for developing students' entrepreneurial skills has become an

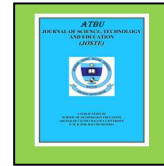
issue in the past decades. The issue such as: are the colleges of education really playing the roles which they are expected to? are the graduates from the colleges of education really useful for

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shaping the future of business and society? will the colleges of education graduate become developed and empowered? Mahadappa, further answered, that the above questions are partially true, as the present colleges of educations have been performing their role partially as the relevance and quality of the educational institutions especially colleges of education are being debated by intellectuals from local to national level (Mahadappa, 2019). Therefore, to fully improve the quality of educational institutions in colleges of education in Nigeria, the government introduced entrepreneurship education as a mandatory course for all student in the year 2002 (Muhammad, 2023). It is in line with the contribution of entrepreneurship in the growth and development of economy in several countries, that the Federal Ministry of Education through the National Commission for Colleges of Education (NCCE) mandated the Colleges of education to include Entrepreneurship education in their curriculum, (NCCE, 2020; Jing, 2022).

Entrepreneurship is regarded as a key to the fast-changing economic demands worldwide and has been recognized as a corridor to the sustainable economic development of any country in the world. Entrepreneurship has become a fundamental matter in almost all developed, developing and emerging nations for enhancing the economic well-being of the nations (Henao et al., 2022). Additionally, Apostu, et al., (2022) revealed that entrepreneurship stimulates the economic growth of many countries. De Esteban et al., (2022) also stated that entrepreneurship has long been seen as a tool for stimulating economic growth even in severe times of economic depression. Faria, et al., (2023) suggested entrepreneurship as an alternative means of stimulating economic growth that may hold greater appeal for policy makers. This implies that an enhancement of individual towards entrepreneurship in a country will derive to the better of the society's welfare and poverty alleviation.

Similarly, Soomro and Shah (2022) also stated that entrepreneurship education is the process of providing individuals with the skill to recognize commercial opportunities and the

insight, self-esteem, knowledge and skills to act on them. Munawar et al., (2023) advocated entrepreneurship education for job creation or venture through orientation, skill development, career development, and opportunities. Studies have shown a significant influence of entrepreneurship education toward building an entrepreneur, in developed countries of the world (Amofah & Saladrigues, 2022).

Soomro and Shah, (2022) has highlighted the following objectives of entrepreneurship education as: to acquire knowledge appropriate to entrepreneurship, to acquire skills in the use of techniques, in the analysis of business situations, and in the synthesis of action plans; to identify and stimulate entrepreneurial initiative, talent and skills; to undo the risk-adverse bias of many analytical techniques; to develop understanding and support for all unique aspects of entrepreneurship; to devise attitudes towards change; to encourage new start-ups and other entrepreneurial ventures. Moreover, de Waal, and Maritz (2022) stated that the objectives of entrepreneurship education are mainly focused on starting a business and subsequent sustainability of the business. Similarly, Al-Mamary and Alshallaqi, (2022) submitted that entrepreneurs are characterized by innovative behavior and employ strategic skills and management practices with the aim of making profit and growth and above all be self-reliant.

Undiyaundeye and Otu, (2022) stated that, despite the government efforts towards entrepreneurship education especially at the tertiary institutions, the level of entrepreneurial skills development among graduates from colleges of education is not encouraging because the percentage of those that decided to be entrepreneurs after graduation is very low. This means students normally graduated from educational institutions without having the expected skills that would enable them established businesses.

Olotuase, et al., (2023) stated that there is strong relationship between entrepreneurship education and entrepreneurial skills development. This implies that student who acquired entrepreneurship education as well as the quality



entrepreneurial skills from institutions through classroom teaching and learning, and exposure to industries might easily be an entrepreneur, compared to those only attended entrepreneurship education in institution alone. Therefore, at this juncture the call for partnering between educational institutions and industries is of paramount importance to address this shortage of entrepreneurial skills development (Mhlanga, et al., 2022).

Partnership between educational institutions and industries have yielded positive result in many countries, as most of the developing and developed nations gave emphasis on dual education system which give numerous skills to the students (Mhlanga, et al., 2022). Kathleen (2022) stated that Germany is a country with dual education system in such a way that students go to school two or three days a week and two days they go to industry for skills acquisition. Kathleen (2022) further stated that Spain is also one of the countries which boosts and initiates programs to encourage educational institution–industry research and development partnerships. Hägg, (2022) submitted that, despite the recognition of entrepreneurship on the way to global economic development, a large body of research on institutions-industries partnership in Nigeria remains unresolved.

### **Purpose of the Study**

The main purpose of this study is to integrate partnership between educational institutions and industries for developing entrepreneurial skills among technical education students in North-east Nigeria. Specifically, the objectives of the study are;

1. To determine how integration of partnership between colleges of education and industries can develop practical entrepreneurial skills among metalwork technology education (MTE) students in north-east Nigeria.
2. To determine how integration of partnership between colleges of education and industries can develop managerial entrepreneurial skills among metalwork

technology education (MTE) students in north-east Nigeria.

### **METHODOLOGY**

The research design used for this study was cross-sectional survey research design. Anas, et al., (2022) opined that survey research design is a procedure in quantitative research in which investigators administer a survey to a sample or to the entire population of people to describe the attitudes, opinions, behaviors, or characteristics of the population. In this procedure, survey researchers collect quantitative, numbered data using questionnaires. The total population for the study was 175 respondents; which comprised 25 lecturers, 10 technicians, 60 industrial staff and 80 NCE III Students from colleges of education in North East Nigeria offering metalwork (Mechanical) technology education.

#### ***Instrument for Data Collection***

The instrument for data collection was structured questionnaire, Lecturers, Technicians, Industries staff and Students Questionnaire for developing entrepreneurial skills among technical education students. The instrument was trial tested outside the study area, and the main purpose is to confirm the suitability, adequacy and effectiveness of the instrument.

#### ***Reliability of the Instrument***

The data was subjected to the Cronbach Alpha reliability coefficient which was found the index value of 0.803. Then the researcher and research assistants directly administered the questionnaires to the respondents. Thereafter the instruments were retrieved, the same way it was administered, with the help of all research assistants. The data collected was analyzed using descriptive and inferential statistics. Specifically, Mean and standard deviation were used to answer the research questions. While Analysis of Variance (ANOVA) was used to analyze and test the Null Hypotheses at 0.05 level of significance.



## RESULTS

**Research question one:** To What extent does the partnership between educational institutions (EI) and mechanical engineering industries (MEI)

develop practical entrepreneurial skills among metalwork technology education (MTE) students in North-east Nigeria?

**Table 1:** The Mean Responses of Respondents on the Extent to which Partnership between (EI) and (MEI) Develop Practical Entrepreneurial Skills among Metalwork Technology Education (MTE) Students in North-east Nigeria.

S/N	Items	$\bar{X}_L$ NL= 24	SD <sub>L</sub>	$\bar{X}_T$ NT= 10	SD <sub>T</sub>	$\bar{X}_I$ NI= 52	SD <sub>I</sub>	$\bar{X}_S$ NS= 66	SD <sub>S</sub>	GM	Rem
1.	To what extent does Partnership between EI & MEI develop the students' ability of transferring measurement and marking out on work piece	3.38	0.8	4.10	0.6	3.98	0.8	3.61	1.0	3.77	HE
2.	To what extent does Partnership between EI & MEI develop students' ability to cut metal using hand hacksaw	3.08	1.2	3.90	0.3	3.79	0.6	3.59	1.0	3.59	HE
3.	To what extent does Partnership between EI & MEI develop the students' ability in starting Gas welding?	3.04	1.0	4.20	0.9	3.81	0.8	3.42	0.9	3.62	HE
4.	To what extent does Partnership between EI & MEI develop the students' ability in holding Gas welding nozzle?	3.21	1.1	4.20	0.4	3.87	0.8	3.67	1.1	3.74	HE
5.	To what extent does Partnership between EI & MEI develop the students' ability in cutting metal using Gas welding (Oxygen)	3.63	0.8	4.10	0.7	3.92	0.7	3.64	1.0	3.82	HE
6.	To what extent does Partnership between EI & MEI develop the students' ability in joining metal edges using Gas welding Equipment	3.17	1.2	3.50	1.2	3.98	0.9	3.59	1.1	3.56	HE
7.	To what extent does Partnership between EI & MEI develop the students' ability in using arc welding	3.54	1.0	3.80	1.2	3.92	1.0	3.59	0.9	3.71	HE

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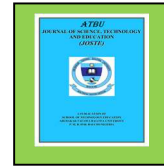
S/N	Items	$\bar{X}_L$ NL= 24	SD <sub>L</sub>	$\bar{X}_T$ NT= 10	SD <sub>T</sub>	$\bar{X}_I$ NI= 52	SD <sub>I</sub>	$\bar{X}_S$ NS= 66	SD <sub>S</sub>	GM	Rem
8.	electrode for performing operation correctly To what extent does Partnership between EI & MEI develop the students' ability in Joining metal edges using Arc welding machine	3.25	1.2	3.90	1.4	3.63	1.0	3.52	1.2	3.57	HE
9.	To what extent does Partnership between EI & MEI develop the students' ability in filing/grinding surface using filing machine	3.38	1.1	3.80	1.5	3.44	1.1	3.53	0.9	3.54	HE
10.	To what extent does Partnership between EI & MEI develop the students' ability in painting completed object?	3.58	0.8	3.80	0.8	3.81	0.8	3.68	1.0	3.72	HE
11.	To what extent does Partnership between EI & MEI develop the students' ability in using modern technology such as tools, equipment and machines in production Technology	3.04	1.0	3.90	0.6	3.83	0.8	3.61	0.9	3.59	HE
12.	To what extent does Partnership between EI & MEI develop the students' ability in performing drilling operation on drilling Machine	3.13	1.1	4.20	0.6	3.83	0.7	3.76	0.9	3.73	HE
13.	To what extent does Partnership between EI & MEI develop the students' ability in cutting sheet metal on sharing machine	2.83	0.9	4.00	0.8	3.73	0.8	3.49	0.9	3.51	HE
14.	To what extent does Partnership between EI & MEI develop the students' ability in tie work piece on lathe chuck	3.33	1.0	3.90	0.9	3.85	0.8	3.68	1.0	3.69	HE
15.	To what extent does Partnership between EI & MEI develop the students'	2.96	1.0	3.80	0.9	4.00	0.9	3.61	1.0	3.59	HE

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S/N	Items	$\bar{X}_L$ NL= 24	SD <sub>L</sub>	$\bar{X}_T$ NT= 10	SD <sub>T</sub>	$\bar{X}_I$ NI= 52	SD <sub>I</sub>	$\bar{X}_S$ NS= 66	SD <sub>S</sub>	GM	Rem
	ability in mounting a cutting tool on lathe tool post										
16.	To what extent does Partnership between EI & MEI develop the students' ability in performing facing operation on lathe machine	3.29	1.0	3.80	1.2	3.81	0.8	3.80	1.0	3.68	HE
17.	To what extent does Partnership between EI & MEI develop the students' ability in performing turning operations, such as parallel and tapered on lathe machine	3.13	0.7	3.80	0.4	3.79	0.8	3.74	1.1	3.61	HE
18.	To what extent does Partnership between EI & MEI develop the students' ability in performing boring operation on lathe machine	3.08	1.0	4.10	0.7	3.94	0.8	3.59	0.9	3.68	HE
19.	To what extent does Partnership between EI & MEI develop the students' ability in performing thread cutting operation on lathe machine	3.38	1.1	4.00	0.8	3.96	0.7	3.50	1.1	3.71	HE
20.	To what extent does Partnership between EI & MEI develop the students' ability in performing grooving operation on lathe machine	3.00	1.0	3.70	0.8	3.81	0.8	3.65	0.9	3.54	HE
21.	To what extent does Partnership between EI & MEI develop the students' ability in performing knurling operation on lathe machine	3.42	1.0	4.30	0.7	3.83	0.7	3.52	0.9	3.76	HE
22.	To what extent does Partnership between EI & MEI develop the students' ability in performing	3.21	1.1	4.30	0.7	4.08	0.8	3.74	0.8	3.83	HE

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S/N	Items	$\bar{X}_L$ NL= 24	SD <sub>L</sub>	$\bar{X}_T$ NT= 10	SD <sub>T</sub>	$\bar{X}_I$ NI= 52	SD <sub>I</sub>	$\bar{X}_S$ NS= 66	SD <sub>S</sub>	GM	Rem
	drilling operation on lathe machine										
23.	Extent to which Partnership between EI & MEI develop the ability in using new technology for enhancing product reliability and efficiency in production technology	3.13	1.2	4.10	0.7	4.04	0.8	3.64	0.9	3.72	HE
24.	To what extent does Partnership between EI & MEI develop the students' ability in using new technology for attracting prospective customers of production technology products	3.00	1.3	4.20	0.8	3.88	0.9	3.73	1.0	3.70	HE
25.	To what extent does Partnership between EI & MEI develop the students' ability in using new technology for the repair and fixing of problems in production technology.	3.08	1.1	3.90	1.1	3.81	0.8	3.77	0.9	3.64	HE
	<b>Grand Mean</b>	<b>3.21</b>		<b>3.97</b>		<b>3.79</b>		<b>3.63</b>		<b>3.66</b>	<b>HE</b>

**Key:-**

$\bar{X}_L$  = Mean of Lecturers,  $\bar{X}_T$  = Mean of Technicians,  $\bar{X}_I$  = Mean of Industrial Staff,  $\bar{X}_S$  = Mean of Students, SD<sub>L</sub> = Standard Deviation of Lecturers, SD<sub>T</sub> = Standard Deviation of Technologist, SD<sub>I</sub> = Standard Deviation of Industrial Staff, SD<sub>S</sub> = Standard Deviation of Students

Table 1 revealed the result of research question 1, which indicated the extent to which partnership between EI and MEI does develop practical skills among MTEs, the table revealed that all the items were of high extent, with item 1,5 and 22 having the highest mean of 3.77, 3.82 and 3.82, respectively. This indicated that there is high extent in Partnership between EI & MEI in developing the students' ability of transferring measurement and marking out on work piece, there is high extent in partnership between EI & MEI in the development of the students' ability in cutting metal using Gas welding (Oxy-acetylene) and high extent in Partnership between EI & MEI

in developing the students' ability in performing drilling operation on lathe machine. This implies, Partnership between EI & MEI will develop practical entrepreneurial skills of students among MTE students at a high extent, mean = 3.66

**Research Question Two**

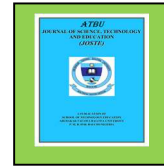
To What extent does the partnership between educational institutions (EI) and mechanical engineering industries (MEI) develop managerial entrepreneurial skills among metalwork technology education (MTE) students in North-east Nigeria?

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**Table 2:** The Mean Responses of Respondents on the Extent to which Partnership Between (EI) and (MEI) Develop Managerial Entrepreneurial Skills among Metalwork Technology Education (MTE) Students in North-east Nigeria

S/N	Items	$\bar{X}_L$ NL= 24	SD <sub>L</sub>	$\bar{X}_T$ NT= 10	SD <sub>T</sub>	$\bar{X}_I$ NI= 52	SD <sub>I</sub>	$\bar{X}_s$ NS= 66	SD <sub>s</sub>	GM	Rem
1.	Extent to which Partnership between EI & MEI develop the ability to compel and encourage students in managing human and material resources in production technology	3.96	1.0	3.60	1.0	3.60	1.0	4.00	0.8	3.79	HE
2.	Extent to which Partnership between EI & MEI develop the ability for students to clarify and solve problems for others in production technology	3.79	1.1	4.00	1.2	3.54	1.1	3.76	0.7	3.77	HE
3.	Extent to which Partnership between EI & MEI develop the students' ability to coordinate effectively in production technology	4.17	0.7	3.90	1.0	3.52	1.1	3.77	0.8	3.84	HE
4.	Extent to which Partnership between EI & MEI develop the students' ability to use and manage natural resources in production technology	4.04	0.7	4.10	0.9	3.60	1.1	3.86	0.9	3.90	HE
5.	Extent to which Partnership between EI & MEI develop the ability to perform and manage daily activities of the business	4.21	0.7	4.10	1.0	3.87	0.7	3.92	0.8	4.02	HE
6.	Extent to which Partnership between EI & MEI develop the students' ability to enforce written rules and procedures in production technology	4.13	0.9	4.00	0.7	3.54	1.2	3.85	0.9	3.88	HE
7.	Extent to which Students Partnership between EI & MEI develop the ability to manage multiple business	4.08	0.7	4.20	1.0	3.67	1.2	3.74	1.0	3.92	HE

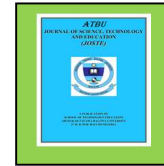
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S/N	Items	$\bar{X}_L$	SD <sub>L</sub>	$\bar{X}_T$	SD <sub>T</sub>	$\bar{X}_I$	SD <sub>I</sub>	$\bar{X}_s$	SD <sub>s</sub>	GM	Rem
		NL=		NT=		NI=		NS=			
		24		10		52		66			
8.	and operations in production technology Extent to which Partnership between EI & MEI develop the ability to take strong decisions in production, and procurement process in production technology	4.13	0.6	4.00	0.9	3.63	1.2	3.61	1.1	3.84	HE
9.	Extent to which Partnership between EI & MEI develop the ability to delegate positions of authority when assigning duties and responsibilities in production technology.	3.96	0.9	4.10	0.7	3.67	1.2	3.41	1.0	3.79	HE
10.	Extent to which Partnership between EI & MEI develop the ability to get people to perform operations Willingly in mechanical industries	4.00	0.7	3.60	1.1	3.77	0.9	3.74	0.9	3.78	HE
11.	Extent to which Partnership between EI & MEI develop the ability to maintain resources for optimum Production in production technology.	3.79	0.7	3.60	1.1	3.42	1.0	3.79	0.9	3.65	HE
	<b>Grand Mean</b>	<b>4.02</b>		<b>3.93</b>		<b>3.62</b>		<b>3.77</b>		<b>3.83</b>	<b>HE</b>

Table 2 revealed the result of research question 2, which indicated the extent to which partnership between educational institutions (EI) and mechanical engineering industries (MEI) develop managerial skills among MTEs. The table revealed that all the items were of high extent, with item 4, 5, and 7 having the highest mean of 3.90, 4.02 and 3.92 respectively. This indicated that there is high extent in Partnership between EI & MEI in developing students' ability to use and manage natural resources in production technology, there is high extent in Partnership between EI & MEI in developing students' ability to perform and manage daily activities of the business and high extent in Partnership between

EI & MEI in developing students' ability to manage multiple business and operations in production technology. This implies that Partnership between EI & MEI will develop managerial entrepreneurial skills of students among MTE students at a high extent, mean = 3.83.

#### **Hypothesis One**

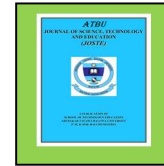
**H<sub>01</sub>:** There is no significant difference among the mean score of Lecturers, Technicians, Industrial Based Supervisors (IBS), and Students on the Extent to which partnership between EI and MEI develop practical entrepreneurial skills among MTE students in North-east Nigeria. The data that were used in

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testing this hypothesis were analyzed using ANOVA and presented in table 3

**Table 3:** Summary of Analysis of Variance (ANOVA) on sig. Diff. Amon Mean Responses of Lecturers, Technicians, Industrial Based Supervisors and Students on the Extent to Which Partnership Between EI and MEI Develop Practical Entrepreneurial Skills of students.

	Sum of Squares	df	Mean Square	F	Sig.
<b>Between Groups</b>	7.840	3	2.613	7.606	.000
<b>Within Groups</b>	50.851	148	.344		
<b>Total</b>	58.691	151			

One-way analysis of variance was conducted to determine the significant difference among the mean scores of Lecturers, Technicians, Industrial staff and Students on the Extent to which Partnership between EI and MEI develop practical skills. The result in table 3 indicated that there was a statistically significant difference in the mean responses of the respondents on the extent to which partnership between EI and MEI developed practical skills among MTE students in North east Nigeria  $F(3, 148) = 7.606, p=.000$ . Therefore, the result provides evidence to reject the null hypothesis since significant difference existed and also call

for the need to conduct post-hoc test to determined specifically where the significant difference lies.

#### **Hypothesis Two**

**H<sub>02</sub>:** There is no significant difference among the mean scores of Lecturers, Technicians, Industrial based Supervisors and Students on the Extent to which partnership between EI and MEI develop managerial entrepreneurial skills among MTE students in North east Nigeria. The data that were used in testing this hypothesis were analyzed using ANOVA and presented in table 4

**Table 4:** Summary of Analysis of Variance (ANOVA) on sig. Diff. Amon Mean Responses of Lecturers, Technicians, Industrial Based Supervisors and Students on the Extent to Which Partnership Between EI and MEI Develop Managerial Entrepreneurial Skills of students.

	Sum of Squares	Df	Mean Square	F	Sig.
<b>Between Groups</b>	12.437	3	4.146	10.939	.000
<b>Within Groups</b>	56.086	148	.379		
<b>Total</b>	68.523	151			

One-way analysis of variance was conducted to determine the significant difference among the mean rating of Lecturers, Technicians, Industrial staff and Students on the Extent to which Partnership between EI and MEI develop managerial entrepreneurial skills. The result in table 4 indicated that there was a statistically significant difference in the mean responses of the respondents on the extent to which partnership between EI and MEI developed managerial skills among MTE students in North east Nigeria  $F(3,$

$148) = 10.939, p=.000$ . However, the result fails to support the hypothesis 2 as statistically significant difference exist, hence the hypothesis was rejected and this calls for the test of post-hoc.

#### **FINDINGS OF THE STUDY**

Based on the data analyzed and the results presented the following are the findings of the study

1. Partnership between EI and MEI will develop practical entrepreneurial skills

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to a high extent among MTE students and there was a statistically significant difference at the  $p < .05$  level in their responses on the extent to which Partnership between EI and MEI develop practical entrepreneurial skills among the MTES.

2. Partnership between EI and MEI will develop managerial entrepreneurial skills to a high extent among MTE students and there was a statistically significant difference at the  $p < .05$  level in their responses on the extent to which Partnership between EI and MEI develop managerial entrepreneurial skills among the MTES.

### DISCUSSION OF FINDINGS

The findings of study which was supported with the test of its null hypothesis revealed to a high extent that Partnership between EI & MEI will develop practical entrepreneurial skills among metalwork technology education (MTE) students in north-east Nigeria (Mean = 3.66) and significant difference existed in the mean response of Technicians, Industrial staff and Students. The findings of this study is in agreement with the findings of Adesanya (2017), which indicated a positive effect on school-industry collaboration for improving students entrepreneurial practical skills in Nigerian universities. The findings of this study also, is in line with the findings of Adewusi and Adisa (2018) on skill acquisition and entrepreneurship development programme among technical college students in ibadan who found out that despite several entrepreneurship development programmes in the country, youth unemployment still stand as a result of inadequate practical skills as well as lack partnership with industries.

This finding is related to the findings of Wilfred-Bonse and Sam-Ngwu (2022), which revealed that School-industry link is one of the pedagogy practices that enhances students learning of entrepreneurial skills in the classroom. They further indicated that the Linkages between institutions and industries allow students to explore the opportunities of self-employment

through the practical and direct involvement of local businesses. Their findings also show the relevancies of school-industry links in imparting entrepreneurial skills to students in the classroom, and examined different strategies for inculcating entrepreneurship practical skills. The findings of the study also go in line with the studies of Cui, Sun & Bell (2021) where they revealed that entrepreneurship education at all level of education, promotes two prominent entrepreneurial mindset roles. Firstly, it enables students to pick interest and widen their horizon to establish themselves through entrepreneurship on graduation. Secondly, entrepreneurship education promotes and equipped students with saleable skills to become entrepreneurs after graduation. The studies are related to this study as they were aimed at finding the students practical skills to be entrepreneurs after graduation.

The findings of study which was supported with the test of its null hypothesis revealed to a high extent that Partnership between EI & MEI will develop managerial entrepreneurial skills among metalwork technology education (MTE) students in north-east Nigeria (Mean = 3.83) and indicated that there was a significant difference in the mean responses of Lecturers, Technician, Industrial staff and students in favour Technicians, Industrial staff and Students, again, a significant difference existed in the mean responses of Industrial staff and Students in favour of Industrial staff while non-significant difference existed in the mean response of Technicians, and Industrial staff.

This finding is in relation to findings of Matt (2020), where he stated that companies with talented managers mostly have strategies for developing managerial skills which is very important for all professions. Matt (2020), revealed that people management is one of the top 10 skills needed to succeed in today's industry greater success, increased levels of productivity, and higher employee engagement scores. Similarly, this finding is in conformity with the study of Nsanzumuhire & Groot, (2020) which revealed that, educational institution – industry partnerships share resources and build commitment which can

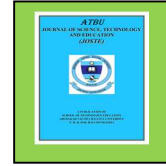
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improve students' managerial skills and operationalize innovative educational ideas, directly relevant to their respective workforces. Also, Tunde, K., Papula, J., Stacho, Z., & Kohnová, L. (2019), revealed that, educational institution – industry partnerships equip individuals with managerial skills to manage both human and material resources that create a genuine and direct value for both the schools (students as the ultimate beneficiaries) and for industry. They also stated, educational institution – industry partnerships potentially provide access to resources that are beyond the financial capacity of schools. These resources include equipment that is industry standard, which is in contrast to simple options available in school laboratories and workshops, as well as personnel who are experts in their respective fields.

## CONCLUSION

In conclusion, the findings of this study revealed the substantial positive impact of partnerships between Educational Institutions (EI) and mechanical engineering industries (MEI) on the development of a wide range of skills among students. The study highlights statistically significant differences at a significance level of  $p < .05$ , demonstrating the efficacy of such partnerships in fostering various skills across four distinct groups. The partnership between EI and MEI will significantly enhance students' practical skills, particularly in the areas of measurement and marking on work pieces, metal cutting through gas welding, and drilling operations on lathe machines. The partnership between EI and MEI is shown to be highly effective in developing students' managerial skills, including their ability to manage natural resources, daily business activities, and multiple business operations within the field of production technology.

## RECOMMENDATIONS

Based on the findings of the study, the following recommendations were proffered:

1. Educational institutions and industries should further integrate partnership programs into the curriculum.

2. Educational institutions should consider offering courses and workshops that specifically address entrepreneurship development among the students.

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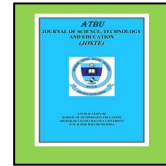
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