ENHANCING MANPOWER TRAINING THROUGH PARTNERSHIP BETWEEN INDUSTRIES AND TECHNICAL COLLEGES IN ENUGU STATE

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Abstract
There is always room for improvement in any human endeavour. The purpose of this study was to determine ways of enhancing manpower training through partnership between industries and technical colleges in Enugu State. Two research questions and two null hypotheses guided the study. A structured questionnaire on Manpower Training through Partnership (MTtP) was the data collecting instrument. The survey research design was used for the study. A total of 354 respondents were used for the study. This figure was made up of 4 principals, 8 vice principals, 40 technical teachers and instructors, 200 final year students from three foremost government technical colleges and 102 core staff of industries located within Enugu State. 12 questionnaire items were organized based on the purpose of the study. The respondents were randomly selected. The questionnaire was administered to the respondents. Data obtained from the study were analyzed using the mean, standard deviation and variance. The hypotheses were tested using One-way ANOVA. The following findings were made: lack of training facilities because the existing ones have become obsolete. There is also the need for the industries to donate the state of the art equipment to technical colleges to keep pace with technological innovations and make their products employable. Similarly, appropriate government legislation need to be put in place to engender functional partnership between industries and technical colleges with the industries contributing a given percentage of their annual profit after tax to a pool of fund for the enhancement of such partnership. Whereas government on her part needs to encourage industrial outfits that buy into the scheme through tax rebate and graduate internship of the graduates from technical colleges. Such incentives from government would improve skills, aptitudes and competencies of technical college graduates thus fostering growth in both the industries, and the technical colleges in Enugu state.
Keywords: Manpower, training, partnership, industries and technical colleges.

Introduction

Human resources are usually reflections of the capability of the people. These capabilities could be built over time. Relevant competencies could be inculcated in the learner(s). Competency according to Klymet (2010) in Ibe and Isiwu (2014) presents attitudes such as knowledge, ability, aptitude capability, effectiveness and skills an individual may possess for certain jobs. If such capabilities are built in the course of the training of students of Technical Colleges and properly

harnessed, they could bring about bountiful industrial growth. The National Policy on Education (FRN 2013:50) states the goals of Technical and Vocational Education and Training (TVET), shall be to:

a. Provide trained personnel particularly at craft, advance craft and technical levels.
b. Provide the technical knowledge and vocational skills necessary for agriculture, industrial, commercial and economic development.
c. Give training and impact the necessary skills to individuals for self-reliance economically.

The National Policy on Education (FRN 2013:57) gave a rudder to achieving these goals. This include among other things, that Government shall ensure that institutions operate in collaboration with relevant industries. The institutions shall also operate with professional bodies and establishments to ensure useful approaches for remaining current with the latest technological innovations. The policy equally recommended that industries which are the end users of the products of technical colleges should be involved.

Such collaboration will equip the students with the technology that is in vogue rather than operating in obsolescence. A clearly defined robust synergy amongst the various stakeholders in the running and management of the technical and vocational education would provide efficient service delivery. Therefore, a formal and private sector driven institutionalized public/private partnership training programme would produce sound and balanced graduates of technical colleges that would be employable by the industries and equally self-reliant entrepreneurs.

Statement of the Problem

There exist a lacuna in the relationship between the training programme of the technical colleges' students and the related industries. While the students are still being taught with obsolete equipments, the industries operate with more modern equipment. At the end of the training the students become unemployable. The collaboration and cooperation between the industry and technical colleges demonstrated through manpower training and funding would enhance the competencies of the graduates of the colleges.

Purpose of the Study

The major purpose of the study is to determine:

1. The expectations of the industries for functional partnership in manpower training of technical colleges' students in Enugu State.

2. Strategic actions for addressing the challenges of partnership between industries and technical colleges in Enugu State.

Research Questions

In pursuant to the purposes of the study, the following research questions guided the study:

1. What are the expectations of industries for functional partnership in respect of manpower training of the technical colleges' students in Enugu State?
2. What are the strategic actions needed to address the challenges militating against functional partnership between the industries and technical colleges in Enugu State?

Hypothesis

The following null hypotheses also guided the study:

Ho_1 – There is no significant difference in the mean responses of Students, Principals/teachers and industrial line staff on the expectations of industries for functional partnership in the manpower training of students of technical colleges in Enugu State.

Ho_2 – Significant difference does not exist in the mean responses of Students, Principals/teachers and Industrial line staff in the strategic actions needed to address the challenges militating against functional partnership between the industries and technical colleges in Enugu State.

Method

The survey design was adopted by the researcher. Nworgu (2006) opined that questionnaire, test or interview could be used to collect data in survey design. The researcher used a structured questionnaire to elicit opinion and obtain data from 200 final year students from three accredited government technical colleges, 4 principals, 8 vice principals and 40 technical teachers and instructors involved in the training of the students. Similarly, 102 core staff of industries located within Enugu State were randomly selected and administered with the questionnaire for their opinions.

The instrument used had earlier been subjected to face validation by two experts in technology and Vocational Education and one expert in measurement and Evaluation from Enugu State University of Science and Technology (ESUT), Enugu. Their observations and suggestions were utilized to improve the instrument. The instrument was further subjected to reliability test

using 30 respondents from Ebonyi State which is contiguous to Enugu state. It yielded an overall reliability coefficient of 0.85 employing the Cronbach alpha reliability coefficient formular in the computation.

The data were collected using the instrument by direct administration. 22 of the questionnaires which had double ticking and mutilations were rejected. This represents 6% of the total respondents. 332 of the 354 instrument were duly completed and returned thereby giving 94% return rate. The data collected were rated using a 4-point rating scale (Strongly Agree: SA, Agree: A, Disagree: D and Strongly Disagree: SD). This produced a cut-off of 2.50. Any mean response up to and above 2.50 was agreed while anyone below 2.50 was disagreed. The data were analyzed using mean, standard deviation and variance.

Results

The results are presented below:

Research Question 1

Table 1.1: Frequency, Mean, Standard deviation and Variance of roles expected of industries for functional partnership in manpower training of students of technical colleges in Enugu state.

N: 178

S/N	Item	SA	A	D	SD	FX	X	Std Dev.	S_i	Remarks
1.	Favourable disposition from both parties will engender progress and growth.	40 160	100 300	30 60	8 8	178 528	2.97	0.76	0.57	Agree
2.	Donating the state of the art equipment to technical colleges by the industries.	52 208	89 267	20 40	17 17	178 532	2.99	0.89	0.79	Agree
3.	Donating textbooks, printed materials and other instructional materials to facilitate teaching/learning of manipulative skills.	61 244	47 141	58 116	12 12	178 513	2.88	0.96	0.93	Agree
4.	Engage in purposeful research into the quality and quantity of manpower needs of the society where the college or industry is located	71 284	52 156	37 74	18 18	178 532	2.99	1.00	1.017	Agree
5.	The technical teachers should ensure the production of very highly skilled graduates for absorption by the industries.	76 304	54 162	40 80	8 8	178 554	3.11	0.91	0.82	Agree
6.	The industries should permit the technical colleges to fabricate/produce some components that are not too sensitive/complex for the use of the industry	74 296	55 165	39 78	10 10	178 549	3.08	0.93	0.86	Agree

Gxs = 3.00
SDs = 0.91

Table 1.2:

Frequency, Mean, Standard deviation and Variance of roles expected of industries for functional partnership in manpower training of students of technical colleges in Enugu state.

N: 52

S/N	Item	4 SA	3 A	2 D	1 SD	FX	$\bar{X}$	Std Dev.	S_i	Remarks
1.	Favourable disposition from both parties will engender progress and growth.	21 84	17 51	8 16	6 6	52 157	3.02	1.02	1.04	Agree
2.	Donating the state of the art equipment to technical colleges by the industries.	19 76	12 36	14 28	7 7	52 147	2.83	1.08	1.17	Agree
3.	Donating textbooks, printed materials and other instructional materials to facilitate teaching/learning of manipulative skills.	27 108	10 30	8 16	7 7	52 161	3.10	1.11	1.23	Agree
4.	Engage in purposeful research into the quality and quantity of manpower needs of the society where the college or industry is located	20 80	16 48	10 20	6 6	52 154	2.96	1.03	1.06	Agree
5.	The technical teachers should ensure the production of very highly skilled graduates for absorption by the industries.	22 88	12 36	10 20	8 8	52 152	2.92	1.12	1.25	Agree
6.	The industries should permit the technical colleges to fabricate/produce some components that are not too sensitive/complex for the use of the industry	13 52	20 60	10 20	9 9	52 141	2.71	1.03	1.07	Agree

G_{XT} = 2.92

SD_T = 1.07

Table 1.3:

Frequency, Mean, Standard deviation and Variance of roles expected of industries for functional partnership in manpower training of students of technical colleges in Enugu state.

N: 102

S/N	Item	4 SA	3 A	2 D	1 SD	FX	$\bar{X}$	Std Dev.	S_i	Remarks
1.	Favourable disposition from both parties will engender progress and growth.	51 204	30 90	12 24	9 9	102 327	3.21	0.97	0.93	Agree
2.	Donating the state of the art equipment to technical colleges by the industries.	53 212	31 93	9 18	9 9	102 332	3.25	0.94	0.90	Agree
3.	Donating textbooks, printed materials and other instructional materials to facilitate teaching/learning of manipulative skills.	49 196	34 102	9 18	10 10	102 326	3.20	0.97	0.93	Agree
4.	Engage in purposeful research into the quality and quantity of manpower needs of the society where the college or industry is located	47 188	40 120	10 20	5 5	102 333	3.26	0.83	0.69	Agree
5.	The technical teachers should ensure the production of very highly skilled graduates for absorption by the industries.	38 152	45 135	4 8	15 15	102 310	3.04	1.00	1.01	Agree
6.	The industries should permit the technical colleges to fabricate/produce some components that are not too sensitive/complex for the use of the industry	39 156	40 120	12 24	11 11	102 311	3.05	0.97	0.937	Agree

Gxs = 3.17

SDs = 0.95

From Table 1.1 – 1.3, the respondents agree with the item 1 – 6 addressing Research Question 1 which says "what are the roles expected of industries for functional partnership in respect of manpower training of the students of technical colleges in Enugu state? Their mean response scores are all higher than the 2.50 in the decision rule.

Research Question 2

Table 2.1:

Frequency, Mean, Standard Deviation and Variance of strategic actions needed to address the challenges militating against functional partnership between technical colleges and industries in Enugu state.

N: 178

S/N	Item	4 SA	3 A	2 D	1 SD	FX	$\bar{X}$	Std Dev.	Si	Remarks
7.	Ensuring that skills imparted to the trainees of technical colleges are applicable in contemporary industrial setting.	50 200	82 246	26 52	20 20	178 518	2.91	0.93	0.87	Agree
8.	Donate finished product of industries to serve as models and instructional materials in technical colleges.	61 244	83 249	22 44	12 12	178 549	3.08	0.86	0.73	Agree
9.	Assist technical colleges in the campaign to awaken public interest in technical education.	57 228	86 258	19 38	16 16	178 540	3.03	0.89	0.79	Agree
10.	Engender appropriate government legislation enforceable by the technical partnership coordinating board.	58 232	88 264	18 36	14 14	178 546	3.07	0.86	0.74	Agree
11	The industries should contribute a given percentage of their annual profit into a pool of fund for the enhancement of partnership.	60 240	76 228	20 40	22 22	178 530	2.98	0.97	0.95	Agree
12.	The partnership should be based on mutual cooperation/technical interest rather than being lopsided.	63 252	77 231	21 42	17 17	178 542	3.04	0.93	0.86	Agree
		Ɠxs = 3.02								
		SDs = 0.82								

Table 2.2: Frequency, Mean, Standard Deviation and Variance of strategic actions needed to address the challenges militating against functional partnership between technical colleges and industries in Enugu state.

N: 52

S/N	Item	4 SA	3 A	2 D	1 SD	FX	$\bar{X}$	Std Dev.	Si	Remarks
7.	Ensuring that skills imparted to the trainees of technical colleges are applicable in contemporary industrial setting.	22 88	18 54	5 10	7 7	52 159	3.06	1.04	1.08	Agree
8.	Donate finished product of industries to serve as models and instructional materials in technical colleges.	19 76	21 63	6 12	6 6	52 157	3.02	0.98	0.96	Agree
9.	Assist technical colleges in the campaign to awaken public interest in technical education.	19 76	20 60	10 20	3 3	52 159	3.06	0.89	0.80	Agree
10.	Engender appropriate government legislation enforceable by the technical partnership coordinating board.	16 64	24 72	7 14	5 5	52 155	2.98	0.92	0.84	Agree
11.	The industries should contribute a given percentage of their annual profit into a pool of fund for the enhancement of partnership.	14 56	22 66	10 20	6 6	52 148	2.85	0.96	0.92	Agree
12.	The partnership should be based on mutual cooperation/technical interest rather than being lopsided.	20 80	19 57	6 12	7 7	52 156	3.00	1.03	1.06	Agree

$G\bar{x}_T$ = 3.00
SD_T = 0.97

Table 2.3:

Frequency, Mean, Standard Deviation and Variance of strategic actions needed to address the challenges militating against functional partnership between technical colleges and industries in Enugu state.

N: 102

S/N	Item	4 SA	3 A	2 D	1 SD	FX	$\bar{X}$	Std Dev.	Si	Remarks
7.	Ensuring that skills imparted to the trainees of technical colleges are applicable in contemporary industrial setting.	30								
		120	52	8	12	102		0.92	0.85	
			156	16	12	304	2.98			Agree
8.	Donate finished product of industries to serve as models and instructional materials in technical colleges.	29	56	8	9	102				
		116	168	16	9	309	3.03	0.85	0.72	Agree
9.	Assist technical colleges in the campaign to awaken public interest in technical education.	31	55	9	7	102				
		124	165	18	7	314	3.08	0.82	0.67	Agree
10.	Engender appropriate government legislation enforceable by the technical partnership coordinating board.	28	54	11	9	102				
		112	162	22	9	305	2.99	0.86	0.74	Agree
11.	The industries should contribute a given percentage of their annual profit into a pool of fund for the enhancement of partnership.	20	45	20	17	102				
		80	135	80	17	312	3.06	1.06	1.11	Agree
12.	The partnership should be based on mutual cooperation/technical interest rather than being lopsided.	20	46	21	15	102				
		80	138	42	15	275	2.70	0.95	0.91	Agree

G_{XI} = 2.97
SD_I = 0.91

From Table 2.1 – 2.3, the respondents agreed with items 7 – 12 which address research question 2 "what are the strategic actions needed to be able to address the challenges militating against functional partnership between technical colleges and the industries"? Their mean response scores are all higher than the 2.50 in the decision rule.

Ho_1:

There is no significant difference in the mean responses amongst Students, Principals/teachers and industrial line staff of functional partnership between Industries and Government Technical Colleges in Enugu State.

The item by item mean of the three variables:

STUDENTS	PRINCIPALS/TEACHERS	INDUSTRIAL LINE STAFF
2.97	3.02	3.21
2.99	2.83	3.25
2.88	3.10	3.20
2.99	2.96	3.26
3.11	2.92	3.04
3.08	2.71	3.05
18.02	**17.54**	**19.01**

ANOVA TABLE FOR ONE FACTOR CLASSIFICATION

Source of Variation	Degree of freedom (D_f)	Sum of squares	Mean Square	F-Ratio
Between samples or treatment within samples	K – 1= 3 – 1 = 2	SS_B = 0.19	$\frac{SS_B}{K-1} = \frac{0.19}{2}$ = 0.095	$\frac{0.095}{0.01}$ = 9.5
	K(n – 1)			
	Kn– K = 18 – 3= 15	SS_E = 0.16	$\frac{SS_E}{K-1} = \frac{0.16}{15}$ = 0.01	
		SS_T = 0.35		

The critical F value greater for F.05, (2,9) = 4.26

Since the observed F value 9.5 is greater than the critical F value, we reject H_0 and conclude that there is no functional partnership between Industries and Technical Colleges in Enugu State.

H_{O2}:

There is no significant difference in the mean responses amongst students, principals/teachers and industrial line staff in the strategies actions needed for addressing the challenges militating against functional partnership between Industries and Government Technical Colleges in Enugu State.

The item by item mean of the three variables:

STUDENTS	PRINCIPALS/TEACHERS	INDUSTRIAL LINE STAFF
2.91	3.06	2.98
3.08	3.02	3.03
3.03	3.06	3.08
3.07	2.98	2.99
2.98	2.85	2.99
3.04	3.00	2.70
18.11	**17.97**	**17.84**

ANOVA TABLE FOR ONE FACTOR CLASSIFICATION

Source of Variation	Degree of freedom (D_f)	Sum of squares	Mean Square	F-Ratio
Between samples or treatment within samples	K – 1= 3 – 1 = 2	SS_B = 1.67	$\frac{SS_B}{K-1} = \frac{1.67}{2}$ = 0.095	$\frac{0.835}{-0.10}$ = – 8.35
	K(n – 1) Kn– 3 = 18 – 3= 15	SS_E = – 1.53	$\frac{SS_E}{K(n-1)} = \frac{-1.53}{15}$ = – 0.10	
		SS_T = 0.14		

The critical F value for F.05, (2,9) = 4.26

Since the observed F value – 8.35 is less than the critical F value, we do not reject H_0 and conclude that there are no significant differences in the mean responses of students, principals/teachers and industrial staff in respect of the strategic actions for addressing the challenges militating against the functional partnership between Industries and Government Technical Colleges in Enugu State.

Discussion of Findings

In table 1, six items scaled through the validation process as the identifiable roles expected of industries for a functional partnership to be engendered between industries and technical colleges in Enugu State. The respondents agreed with the six roles because the mean response scores are all higher than the 2.5 on the decision rule.

These findings agreed with the submission of Eneh (2015) that the time has come for institutions to partner with industries. Similarly, Ehigozie (1992) was of the opinion that concerted effort should be made to attract and retain technical teachers/instructors through the provision of industrial professionals to be encouraged to participate as part-time teachers in technical colleges. Toffler (1980) and UNESCO (1990) shared the same views that the pace of technological change makes teaching and training equipment obsolete very rapidly.

In table 2, the respondents agreed with the entire six items in the questionnaire because the mean response scores are all higher than the 2.5 on the decision rule. This result agrees with Okorie (2001) which states that the uppermost in the mind of experts in the field of vocational technical education was that the curriculum responds to labour market trends and projection of manpower requirements, in the contemporary industrial setting. These items are paramount in addressing the challenges militating against functional partnership between industries and government technical colleges in Enugu State.

Conclusion

The findings of the study affirm the essence of functional partnership between industries and technical colleges in Enugu State. The absence of a formally institutionalized technical college/industry partnership system is a serious missing link in the development of skilled manpower and competencies of graduates of technical colleges. Government and relevant agencies need to create enabling environment for a functional synergy to thrive amongst all the stakeholders in the industries and technical colleges for rapid industrialization. In addition to industrial growth, the production of knowledgeable, skillful and competent graduates of technical colleges would encourage self-reliance, self-employment ad entrepreneurial development in the society.

Recommendations

Following the findings of the study, the researcher recommends as follows:

a. The relevant government agencies e.g. National Board for Technical Education (NBTE), National Council on Education (NCE), Industrial Training Fund (ITF), National Business and Technical Examinations Board (NABTEB), Ministry of Education should liase with the industries through appropriate government legislation to bring to effect functional partnership between industries and technical colleges.
b. Industrial establishments which engage the services of the bulk of the craftsmen trained in technical colleges be made through appropriate understanding to show greater commitment in the education and training of technical college graduates.
c. Fund is of essence in this partnership arrangement. Industrial Training Fund (ITF) should be re-engineered to be more proactive in organizing a pool of funds where all the industrial outfits would be compelled to contribute a given percentage of their annual profit to such fund to be managed not only by ITF but by other stakeholders as may be constituted by the government authority.

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