



STRATEGIES FOR ESTABLISHING PARTNERSHIP BETWEEN INDUSTRIES AND TECHNICAL COLLEGES IN ENUGU STATE, NIGERIA

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ABSTRACT

The purpose of this study was to determine strategies for establishing strategic partnership between industries and technical colleges in Enugu State. Five research questions were formulated to guide the study. A structured questionnaire was the instrument employed in obtaining the data for answering the research questions. The survey research design was employed in the study. The population of the study comprised of 200 final year students; 40 technical teachers, 4 principals and 8 vice principals. The entire population of students, teachers, principals and vice principals were studied. The three technical colleges were selected by purposive sampling technique. Similarly, from each of 102 registered industrial establishments within the location of the three technical colleges, courtesy Enugu State ministry of commerce and industries, one respondent each was selected by purposive sampling. The overall population of the core- technical staff in the industries is 1220. Therefore the total population studied was 4282. A total of 354 respondents were used for the study, comprising of 4 principals and 8 vice principals; 40 technical teachers and instructors, 200 final year students from three prominent government technical colleges and 102 core-staff of industrial establishments, located within Enugu State. 30 questionnaire items were organized logically based on the objectives of the study. The draft questionnaire was subjected to face and construct validation. The validation was done by two experts from the department of Technology and Vocational Education, Enugu State University of Science and Technology (ESUT); and an expert in measurement and evaluation from department of science and computer Education of (ESUT) Enugu. The reliability of the instrument was established using the test-retest method. The computation of the reliability(r) was done applying the Pearson product moment correlation. It yielded a value of 0.85 which was high enough for the study. The questionnaire was administered to the respondents randomly selected. The data obtained were analyzed using the mean and standard deviation. The following findings were deduced: There is need for collaboration between the industries and the institutions in engaging the students in internship program in the course of their studies during vacations, while internship scheme should be immediately on graduation for a period of one year. In addition to paying the students stipends, government should grant tax rebate to collaborating industries. Exchange of industrial experts and instructors of technical colleges especially within their annual vacation period for on-the-job training. Similarly, trade and occupational committees should be collaborating with the technical college authorities with a view to bringing the latest technological/scientific innovations into the training programme of the students. Fund is of essence; captains of industries should be compelled by law to contribute a given percentage of the company's annual after tax to the Industrial Training Fund (ITF) for operating the and Internship Scheme.

Keywords: Establishing Partnership; Industries and Technical Colleges; Enugu State

Introduction

Industrial development and its resultant growth are predicated on the quality of labour available for absorption into the workforce of such industrial outfit. Productive ventures in the industry require technical/technological skills which are part of their human resource requirement. These human agents of production are trained from technical colleges especially the skilled middle level manpower. Most of the core-staff of such industries involved in the line operation are usually products of technical colleges.

Skilled and competent personnel are a panacea to effective industrial production. Similarly in the technical/technological world, jobs are disappearing while new ones are emerging which require new kinds of skills. This phenomenon calls for mutual partnership between the industries and the technical colleges so that their products will cope with the changing tides in the industries on graduation. Ehigozie (2013) posited that there is knowledge explosion in almost all fields of human endeavours and that is why Dimmock (2011) found that the common useful approaches for remaining current with the latest technological innovation involves partnering with the industry which is the end users of the products of technical colleges. If such partnership is established between the industry and technical colleges, the right caliber of personnel will be produced. This will meet the challenges required of today's changing world. It would equally help to conserve the fund expended by the industry on regular short courses for on-the-job improvement; workshops/seminars and other forms of on-the-job training and retraining.

Partnership, according to Houston (2005), refers to an association of individuals, firms or establishments that has the sole aim of achieving a common purpose. These bilateral and multilateral relationships create room for the parties to pull resources/energy together with a view to producing better result(s). In other words, a well-articulated partnership engenders more efficient output for what is deficient in one party is made up by the other except of course if both are moribund in all respects.

Government Technical Colleges are institutions empowered by government to undertake Technical Education. Technical education, according to Nigeria Policy on Education (Federal Republic of Nigeria, 2013) is defined as that aspect of education which leads to the acquisition of practical and applied skills as well as basic scientific knowledge. Technical and vocational education and training is used as a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical, skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life.

The goals of Technical and Vocational Education and Training (TVET) (FRN, 2013) shall be to:

- a. Provide trained manpower in the applied sciences, technology and business particularly at craft, advance craft and technical levels.
- b. Provide the technical knowledge and vocational skills necessary for agriculture commercial and economic development and
- c. Give training and impart the necessary skills to individual for self-skills to individual for self-reliance economically.

In achieving these goals, Government shall ensure that:

- i. Institutions operate in collaboration with relevant industries, professional bodies and establishments to ensure practical training and experience for students.
- ii. Institutions shall be formal and private sector driven but not precluding public/private partnership.

Government is aware that the role of industry providing technical training outside their own programmes is negligible. Their programmes are aimed mainly at the training of the products of our institutions whom they generally consider unemployable without such further training owing to lack of practical experience. This accounts for the essence of initiating strategies for partnership between the industry and government technical colleges with a view to inculcating relevant technical skills in the graduates of such technical colleges.

Purpose of the Study

The major purpose of the study was to determine strategies for establishing partnership between industries and Government Technical Colleges in Enugu State. The study specifically determined:

1. The Modalities for the training practices of technical colleges and that of the industries.
2. How to foster linkages between the technical colleges and industries
3. The problems of establishing partnership between industries and Government Technical Colleges.

Research Questions

The following research questions were formulated to guide the study:

1. What are the modalities for the training practices of technical colleges and that of the industries?
2. How can linkages between the technical colleges and the industries be fostered?
3. What are the problems militating against establishing partnership between industries and Government Technical Colleges?

Research Method

The Descriptive survey was considered the most suitable design for this study and was therefore adopted. According to Borg and Gall (1993), the survey approach to research is generally usual to explore, evaluate or elicit people’s perception, opinions, preferences and attitude towards educational issues and problems. Survey research is the type that is often engaged in self-report studies. This is the type in which a group of people or items are studied by collecting and analyzing data from only a few people or items considered to be a representation of the entire group (Nworgu, 1992). In this case the investigator infers information about a population of interest based on the responses from a randomly selected sample drawn from that population.

$$n = \frac{N}{1+N(e)^2} = \frac{3062}{1+3062(0.05)^2} = \frac{3062}{8.655} = 353.78$$

Therefore n = 354 approximately

The study covered the Government Technical Colleges within the three major education zones in Enugu State viz Enugu, Nsukka and Awgu education zones. The target population from the three Government Technical Colleges was (354) comprising (89,177, 88) respondents. Academic staff of the technical colleges involved were 4 principals, 8 vice principals and 40 technical teachers. Also 102 industrial staff were studied. A sample size of 354 was randomly selected in conformity with Yaro Yamena in Ohuche (1977).

The instrument used for data collection is a structured questionnaire. The questionnaire items were constructed to address the research questions. The instrument was divided into two parts, I and II. Part I was used to elicit information relating to the official designation of the respondents. Part II was to elicit information on the strategies for establishing partnership between technical colleges and industries. The part II is divided into three clusters A – C with each cluster addressing one of the three research questions.

Cluster A: was designed to elicit responses on the modalities for training procedures/practices of technical colleges and industries.

Cluster B: sought responses on ways of promoting cooperation between technical colleges and industries.

Cluster C: sought responses on the problems militating against establishing partnership training between industries and technical colleges.

The questionnaire was structured in the form of four-point rating scale:

Strongly Agree	(SA)	-	4 points
Agree	(A)	-	3 points
Disagree	(D)	-	2 points
Strongly Disagree	(SD)	-	1 point

Appropriate instructions on how to record their responses were provided.

The instrument was validated by three experts; two from the Department of Technology and Vocational Education, one from measurement and evaluation from Enugu State University of Science and Technology, Enugu. The

reliability of the instrument was established using the test-retest method and computed employing the Pearson product moment correlation which yielded .85 indicating high reliability.

Due process/protocol was observed with the relevant authorities prior to the distribution of the instruments. Out of 354 instruments distributed 340 were returned fully completed; out of which 22 were found mutilated, double ticked. These were disregarded. The return rate therefore was about 90%.

The data collated from the questionnaire was analyzed using the frequency distribution and mean. For the 4-point rating scale, acceptance or non-acceptance is predicated on the decision rule derived from $(4 + 3 + 2 + 1)/4 = 2.5$ relative to the mean response score on each item. Any score up to 2.5 and above was accepted but below 2.5 was rejected.

Results

Research Question 1

What are the modalities for training practices of technical colleges and industries?

Table 1: Frequency, Mean, Standard Deviation and Variance of Modalities for Training Practices of Technical Colleges and Industries in Enugu State

S/N	Item	4 SA	3 A	2 D	1 SD	F(0)	Mean	Std Dev.	Variance (Si)	Remarks
1.	By organizing seminars, workshop and conference?	45	263	9	1	318	3.11	0.41	0.17	Agree
		180	789	18	1	988				
2.	Placement of students on part time work especially during long vocations.	180	80				3.32	0.91	0.83	Agree
		720	240	38	20	318				
3.	Professionals from industry engaging in part time teaching in technical colleges.						2.92	0.75	0.56	Agree
		70	160	81	7	318				
4.	Organizing plant or field trip for students and counselors.						3.03	0.73	0.53	Agree
		85	161	68	4	318				
5.	Forming joint trade or occupational committees for harmonization of training.						3.53	0.74	0.55	Agree
		207	80	23	8	318				
6.	Joint sharing of training facilities.						2.76	0.98	0.96	Agree
		72	150	45	51	318				
		288	450	90	51	879				

From Table 1, the respondents agree with items 1 – 6 because their mean responses scores, 3.11, 3.32, 2.92, 3.03, 3.53, and 2.76 respectively are all higher than the 2.50 in decision rule.

The Standard deviations are all below one whole number which is an indication of homogenous responses. Therefore, all the respondents agree that all the items in the modalities for training practices between technical colleges and industries are desirable.

Research Questions 2

How can linkages between the technical colleges and the industries be fostered?

Table 2: Frequency, Mean, Standard Deviation and Variance of Fostering Linkages between Technical Colleges and the Industries in Enugu State.

S/N	Item	4	3	2	1	F(0)	Mean	Std Dev.	Variance (Si)	Remarks
		SA	A	D	SD					
7.	Government enacting appropriate decree to foster collaborative efforts and bilateral relationship	23	243	41	11	318	2.78	0.57	0.33	Agree
		92	729	82	11	914				
8.	Setting up a proactive coordinating board made up of professionals in technical education.	172	83	53	10	318	3.31	0.86	0.74	Agree
		688	249	106	10	1053				
9.	Involving the joint trade or occupational committees in curriculum design of technical colleges.	105	94	78	41	318	2.83	1.03	1.06	Agree
		420	282	156	41	899				
10.	Provide professionals from industries the opportunity to engage in part time teaching in technical colleges.	103	89	104	22	318	2.86	0.95	0.91	Agree
		412	267	208	22	909				
11.	Offer automatic employment to deserving graduates of technical college in industries	210	85	21	2	318	3.58	0.64	0.41	Agree
		840	255	42	2	1139				
12.	Training supervisor in technical colleges and their human resources counterparts in industries to initiate technical exchange programmes	70	168	50	30	318	2.87	0.86	0.74	Agree
		280	504	100	30	914				

From Table 2, the respondents agree with items 7 – 12 which the 2nd research Question “How can linkages between the technical colleges and the industries be fostered” addresses because the mean responses scores of 2.87, 3.31, 2.83, 2.86, 3.58 and 2.87 respectively are each higher than 2.50 in the decision rule.

The Standard deviation of item 9 is a little above a whole number. This is an indication of heterogeneity in the responses. This implies that involving the joint trade or occupational committees in curriculum design of technical colleges may not be key to fostering linkages between the industries and technical colleges.

Research Question 3

What are the problems militating against the establishment of partnership between technical colleges and industries?

Table 3: Frequency, Mean, Standard Deviation and Variance of Problems Militating Against the Establishment of Partnership between Technical Colleges and Industries in Enugu State.

<i>S/N</i>	<i>Item</i>	<i>4</i>	<i>3</i>	<i>2</i>	<i>1</i>	<i>F(0)</i>	<i>Mean</i>	<i>Std</i>	<i>Variance</i>	<i>Remarks</i>
		<i>SA</i>	<i>A</i>	<i>D</i>	<i>SD</i>			<i>Dev.</i>	<i>(Si)</i>	
13.	Lack of training facilities	92	181	30	15	318				
		368	543	60	15	986	3.10	0.75	0.56	Agree
14.	Lack of training method/techniques that meet contemporary labour market needs.	51	210	40	17	318				
		204	630	80	17	931	2.93	0.70	0.50	Agree
15.	Lack of goodwill on the part of the industries to partner with technical colleges which are service oriented rather than profit oriented.	92	93	101	32	318				
		368	279	202	32	881	2.77	0.98	0.96	Agree
16.	Insensitivity of relevant government agencies in incubating technical skills for industrial growth.	204	91	18	5	318				
		816	273	36	5	1130	3.55	0.68	0.46	Agree
17.	Inadequate and unqualified technical teachers in the technical colleges.	50	35	38	195	318				
		200	105	76	195	576	1.81	1.15	1.32	Disagree
18.	Inadequate recognition accorded technical education as a profession by both government and society.	44	47	36	191	318				
		176	141	72	191	580	1.82	1.13	1.27	Disagree

From Table 3, the respondents agree with items 13 – 16 because the mean responses scores of 3.10, 2.93, 2.77 and 3.55 respectively are higher than the 2.50 in decision rule. However, the respondents disagree with items 17 and 18 because their responses scores of 1.81 and 1.82 respectively are lower than the 2.50 in the decision rule.

The Standard deviations of items 17 and 18 are both above a whole number, indicating heterogeneity. These indicate that inadequate and unqualified technical teachers as well as inadequate recognition accorded technical education by both government and society are not prominent amongst the problems militating against the establishment of partnership between the industries and technical colleges.

Summary of Findings

Based on the data collected and analyzed the following findings were made from the study.

- A. Modalities for training procedure/practices that should be carried out between technical colleges and industries should include:**
1. Organizing seminars, workshops and conference
 2. Placement of students on part time work especially during long vacation.
 3. Professionals from industries engaging in part time teaching in technical colleges.
 4. Organizing plant or field trip for students and counselors
 5. Forming joint trade or occupational committee for harmonization of training and
 6. Joint sharing or training facilities.
- B. Strategies for promoting training linkage between technical colleges and industries**
7. Government enacting appropriate decree to foster collaborative efforts and bilateral relationship
 8. Setting up a proactive coordinating board made up of professionals in technical education.
 9. Involving the joint trade or occupational committee in curriculum design of technical colleges.
 10. Provide professionals from industries the opportunity to engage in part time teaching in technical colleges.
 11. Offer automatic employment to deserving graduates of technical college in industries
 12. Training supervisors in technical colleges and their Human Resources counterparts in industries to initiate technical exchange programmes.
- C. Problems militating against the establishment of partnership between technical colleges and industries**
13. Lack of training facilities
 14. Lack of training methods/techniques that meet contemporary labour market needs
 15. Lack of goodwill on the part of the industries to partner with technical colleges which are service oriented rather than profit oriented
 16. Insensitivity of relevant government agencies in incubating technical skills for industrial growth.

Discussion

Modalities for Training Practices of Technical Colleges and Industries in Enugu State

Research Question 1 identified the prominent modalities for training practices between industries and technical colleges. The mean responses for each of the items was more than that of the decision rule 2.50 which was an indication that the respondents agreed with the entire six (6) items reflecting the modalities for the training practices in industries and technical colleges. These responses were in agreement with the contention of Olaitan (2002), that the primary importance of vocational and technical education is that it has remained a process of handing down the accumulated skill, knowledge and wisdom of man to successive generation.

Fostering Linkages between the Technical Colleges and Industries in Enugu State

Research Question 2 was aimed at re-varying the various strategies for promoting training linkages between industries and technical colleges. Six (6) possible linkages were responded to and with mean responses greater than 2.50 on the decision rule indicating that all agreed with the items. This further corroborated the assertion of Mason and Hainess (2004), who stated that industries and technical colleges occupy an inseparable position though they play different roles. To them, technical colleges should provide instructional materials, suitable classroom and qualified teachers to impart the needed skill and knowledge, while industry should help in refurbishing the departments and commercialize their inventions, provide the staff (teachers) and students with the practical skill and collaboration with the schools in the planning curriculum.

Problems Militating Against the Establishment of Partnership between Technical Colleges and Industries in Enugu State

Research Question 3 showed that the respondents agreed with the first four items having recorded mean responses higher than 2.50 on the decision rule. However, the respondents disagreed on the last two items have recorded mean responses below 2.50 in the decision rule. From the responses therefore the last two items could not suffice as part of the problems militating against establishing partnership between industries and technical colleges; within the environment studied.

Conclusion

Partnership between technical colleges and the industries would be a worthwhile venture both on the part of the schools and the industries. Both parties stand to gain a great deal from the arrangement if properly implemented because, the industries will benefit from free labour in the course of internship of the students of technical colleges. Similarly, the technical colleges will gain tremendously as an institution through the bilateral interaction with the industries and the quality of graduates they will be producing.

With appropriate machinery put in place, exchange of professionals between the industries and the technical colleges would provide a necessary link. To be able to appropriate the benefits of this partnership, a clearly defined and coordinated synergy of all the relevant authorities involved the industries, the technical colleges, committees on trade, professional bodies and government agencies are necessary. With such institutionalized collaboration, adequate skills and competencies would be inculcated in the graduates of technical colleges. This would not only make them employable but also self-reliant thus promoting entrepreneurship quest which will give rise to growth in the economy of the catchment area, Enugu State.

Recommendations

1. Industrial and Technical Colleges should work together in training technical college students.
2. There is need for appropriate government legislation to bring to effect functional partnership between industries and technical colleges. The government should provide stipends for the externs and interns as well as consider tax rebate for corporate bodies that key into this government policy as a means of incentive to the companies.
3. There should be bilateral agreement whereby there is exchange of instructors to the industries for refresher courses within a given period of time and vice-versa while their counterparts in the industry go to the technical colleges.
4. A trade/occupational committee is recommended for the technical colleges and the industries to initiate mutual discussion on the basis of institutional arrangement pending government holistic arrangement, such formal collaboration agreement is drawn up and signed by the heads of the partnering institution. With the good fruits likely to emanate from this arrangement, it may elicit government positive responses and facilitate further interactions.
5. Fund is of essence in this arrangement. Industrial Training Fund (ITF) should be re-engineered to be more proactive in organizing a pool of fund where by all the industrial outfits would be compelled by law to contribute a given percentage of their annual profit to such fund to be managed not only by ITF but involving the joint trade and occupational committees/councils of partnering institutions.
6. The technical colleges especially in Enugu State should be made to study the findings of this study and work out the strategies and modalities for infusing and incorporating them into the technical college programme, thereby making it workable.

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