



## Measures for Marketing Industrial Education and Technology in Nigeria in the 21st Century through Human and Public Relations Management

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### ABSTRACT

*The purpose of the study was to determine the measures for marketing industrial education and technology (IET) in Nigeria in the 21st century through human and public relations management. Two research questions in line with the purpose of the study were formulated while two null hypotheses were tested at the 0.05 level of significance. The study adopted a survey research design. The population for the study was 60 IET lecturers and 30 engineering lecturers from higher institutions in Rivers State. There was no sampling as the population was manageable. A twenty-item questionnaire was designed to collect data for the study. The instrument was validated by three experts. Cronbach's Alpha reliability coefficient was used to determine the internal consistency of the instrument which stood at 0.91. The data collected for the research questions which guided the study were answered using mean and standard deviation, whereas the hypotheses were tested with t-test. The result of the study showed the roles of human and public relations officers and measures to be adopted by human and public relations management in marketing industrial education and technology in Nigeria. It was recommended that budgetary provision should be set aside by school management for human and public relations units.*

**Keywords:** Industrial Education, Technology, Marketing, Management, Human and Public Relations

## 1. Introduction

The term industrial education is used here in a generic sense to include industrial arts and all phases of vocational industrial education, namely: technical, apprenticeship, in-plant training among others. Industry oriented education is an approach to learning from an industry perspective where traditional subjects such as mathematics, physics and science are taught in the context of application of that knowledge to product design, development and operation (Leavitt, 2020). Industrial education is a method of experimentation for the purpose of finding out what adjustment can be made to bring the culture of the public school into harmony with the culture of machine industry and its accompanying organization. It is a dual system learning between the industry and the school (Emesini, 2016). Industrial education helps students to know and understand industry-technology demands. In the words of Oluka and Onyebuanyi (2017), innovations in technology had contributed immensely to the development of man and few can imagine living without technology; Technology as a key component of human life, shapes the future and makes it compatible with nature through the discovery of more efficient methods and processes for the simplification of living. The authors maintained that the fields of engineering, technology and industrial education have continued to experience technological innovation in contemporary world in order to meet the challenges and demands of the society.

Technology can be defined a way of solving practical societal problem. Onah (2018) defined technology as the systematic application of knowledge to practical task in industry. Okechukwu (2014) perceived technology as any invention or innovation that affects the way we live; like the compact digital (CD) player, microwave ovens, calculator, magnetic resonance, imaging machine and forks. Okechukwu reiterated that technology is the application of knowledge to develop the tools our society requires to run. For Njoku, Ewe and Onyia (2018), it is a combination of science, art, engineering, economics and social studies that brought together the creativity and ingenuity to improve the quality of our lives. For them, it is all about making it easier, faster and efficient. The combinations of these two words form industrial education and technology.

Industrial education and technology (IET) is perceived as one of the crucial elements in enhancing economic productivity (Okwelle, 2010). IET is regarded as an integral part of education that provides a means of preparing individuals for occupational fields and for effective participation in the world of work (Yakubu, 2016). In the current economic environment, IET is expected to produce an educated, skilled and motivated workforce critical to national development. Aina in Nnaji for (2018), observed that since the introduction of IET in Nigeria educational system some years ago, enrolment in IET further has posed inherent danger to technology education and national development. In line with his view, Yakubu (2016) reported that the total enrolment figures in IET programmes in Nigeria in the 21st century was less than three percent (3%). He stated that this figure, in comparison with countries seeking to have rapid socio-economic development is negligible as those countries target about fifty percent enrolment.

Aina, Hubert, Okwori in Okwelle (2010) has identified major factors responsible for low enrolment of students especially females in IET to include among others: low societal estimation of IET as education for lowest class people; education of the last resort; for people of low intelligence quotient; low achievers and low status occupation as well as lack of career awareness in IET. The current reform of IET systems in Nigeria in the 21st century seems to have not fully addressed the impediments to technology education development in the country. The 21st century is knowledge-driven; a technologically oriented era where education involves action and skills. It is education that launches nations into global competitiveness. IET leads the way to this 21st century education. There is therefore the need to further intensify efforts geared towards repositioning and marketing industrial education and technology institutions with a view to making them attractive to prospective students.

Marketing according to Kalio and Nwala (2018) is a provision for a group of people (firms, individuals, business or even enterprises) to put their goods or services for sale, with a formulated strategy that has been set to satisfy the consumer's needs and preferences. Marketing is known as a management process whose duty is to identify, participate in, and therefore supply customers with their requirement so efficiently, as well, be profitable to the producer. Marketing being a process of planning and also the execution of a conception of pricing, promotion and also distribution of ideas, and even services, therefore creates an exchange that satisfies individuals and organizational objectives. This approach of marketing is also a human activity that is directed to the satisfaction of needs and wants which is through the exchange process, of which is seen by management as an activity whereby suitable products are therefore presented to the market of which its purpose is to maximize profits (Kalio & Nwala, 2018).

However, marketing IET requires strategic marketing. Institute of strategic management Nigeria (ISMN, 2015) defined strategic marketing as a market-driven process of strategic development that takes into account constantly changing environment and the need to achieve high level of customer satisfaction. Its focus is on organizational or institutional performance, rather than on increasing sales. It links the organization with the environment and views marketing as the responsibility of the entire organization rather than as specialized functions. Marketing IET in Nigeria in the 21st century is important because of the negative societal perception of the programme. Some consider the programme as a programme for the less privilege while others consider it as a programme for the low intelligent quotient (Njoku, Ewe & Onyia, 2018). It is based on this ground that marketing IET becomes so necessary in order to obliterate the negative societal perception thereby leading to high students' enrolment. Marketing IET in Nigerian can easily be done through human and public relations management.

Management according to Emennu (2018) refers to the act of organizing and/or controlling a thing or person to get something done. Also, management is the formulation and implementation of plans and carrying out of activities relating to the matters which are of vital pervasive or continuing importance to the total enterprise. For IET to be properly marketed, and the corresponding students' enrolment, Okwelle (2010) identified strategies of enhancing students' enrolment in IET programmes; one of which according to them is the establishment of human and public relations units in schools to liaise between the IET departments and the public. In order to understand the roles of human and public relations play in marketing IET programmes, it is first important to understand the concept of human and public relations.

Human and public relations is the practice of deliberately managing the release and spread of information between an individual or an organization (such as business, government agency, or a non-profit organization) and the public in order to affect the public perception (Uka, 2021). Okwelle (2010) defined public relations as management functions which evaluate public attitudes, identifies the policies and procedures for an organization with the public interests. Human and public relations can be also viewed as the planned and sustained effort to establish and maintain good will and mutual understanding between an organization and its public (Phoenix synergy, n.d).

Human and public relations in the context of educational process is defined as planned and systematic management function to help improve the programmes and services of an educational system (National School Public Relations Association (NSPRA), n.d)). In the same vein, Calhoun and Finch (2020), described school public relations as a two-way process, a cooperative effort for mutual understanding and effective team work between the community and the school. A critical look at the above definitions show that school public relations relies on a comprehensive two-way communication process involving both internal publics (students and staff) and external public (parents, government and general public), with a common goal of stimulating a better understanding of the roles, objectives, accomplishments and needs of the school. Okwelle (2010) identified some of the roles of human and public relations officers in marketing IET in Nigeria to include but not limited to creating awareness within and outside the school with regard to IET, sensitization of the public about the activities of IET development. He went further to state the measures to be adopted by human and public relations management in marketing IET in Nigeria to include provision of funds for human and public relations activities; motivating human/public relations officers to show interest in marketing IET, integrating human and public relations activities into the school curriculum among others.

Based in the forgoing, it is clear that both IET lecturers and engineering lecturers at all levels are important school human and public relations agents. To this end, the concern of this study is to determine the measures for marketing industrial education and technology in Nigeria in the 21st century through human and public relations management.

### **Purpose of the Study**

The main purpose of the study was to ascertain the measures for marketing industrial education and technology in Nigeria in the 21st century through human and public relations management. Specifically, the study sought to:

1. Identify the roles expected of human and public relations officers in marketing industrial education and technology in Nigeria in the 21st century.
2. Determine the measures to be adopted by human and public relations management in marketing industrial education and technology in Nigeria in the 21st century.
- 3.

## Research Questions

The following research questions guided the study:

1. What are the roles expected of human and public relations officers in marketing industrial education and technology in Nigeria in the 21st century?
2. What are the measures to be adopted by human and public relations management in marketing industrial education and technology in Nigeria in the 21st century?

## Hypotheses

Two null hypotheses were tested at 0.05 level of significance:

H<sub>01</sub>: There is no significant difference between the opinions of IET lecturers and engineering lecturers on the roles expected of human and public relations officers in marketing industrial education and technology in Nigeria in the 21st century.

H<sub>02</sub>: There is no significant difference between the opinions of IET lecturers and engineering lecturers on the measure to be adopted by human and public relations management in marketing industrial education and technology in Nigeria in the 21st century.

## Method:

The design of the study was a survey research. Survey research is a type of design concerned with specified population of persons, items or situation in a defined geographical location (Idoko, 2011). The study adopted the survey design and was carried out in three tertiary institutions in Rivers State where there are large concentration of these IET lecturers and engineering lecturers. The population for the study consisted 60 IET lecturers and 30 engineering lecturers in the three higher institutions in Rivers State, namely: Ignatius Ajuru University of Education Port Harcourt, Rivers State University, Port Harcourt and Federal College of Education (Technical) Omoku. No sampling was done as the identified population was within reach and they were all studied.

The instrument used was a twenty-item structured questionnaire developed by the researcher. The questionnaire was used to collect data from the respondent. It consisted of two parts – part A and part B. part A was designed to elicit information on the background of the respondents using such information as the status of the respondents. Part B was made up of two sections: section 1 and section 2. Section 1 contained 10 items and section 2 also contained 10 items. The instrument was face validated by three experts. The comments of the validates guided the modification of the final instrument. The reliability of the instrument was obtained using Cronbach's Alpha and the coefficient of reliability computed from result of a pilot study conducted with 30 IET lecturers and 20 engineering lecturers in Enugu State University of Science and technology (ESUT), Agbani and the reliability index of section 1 yielded 0.92 and that of reliability index of section 2 yielded 0.90. The reliability index of the two clusters stood at 0.91.

All the items were responded to by the respondents using a four-point scale of strongly agree (SA), agree (A), disagree (D) and strongly disagree (SD); the responses were weighed – 4, 3, 2 and 1 respectively. The instrument was administered and collected by the researcher. Out of the 90 copies of the questionnaire distributed, all were properly completed and collected on the spot and were used for data analysis, representing 100% return rate. Mean with standard deviation was used to answer the research questions. For decision rule, the upper and lower limits of the mean were used thus: Strongly Agree (SA) 3.50 - 4.49, Agree (A) 2.50 – 3.49, Disagree (DA) 1.50 – 2.49, Strongly Disagree (SD) 0.50 – 1.49. The null hypotheses were tested using t-test statistics. The decision rule for the hypotheses was to reject H<sub>0</sub> at the 0.05 level of significance if t-calculated is greater or equal to the t-critical but not to reject H<sub>0</sub> if t – calculated is less than the t-critical.

## Results

The results of data analysis of the study are presented in table 1 to 4 below:

### Research Questions 1:

What are the roles expected of human and public relations officers in marketing industrial education and technology in Nigeria in the 21st century?

Table 1: Mean Ratings of IET Lecturers and Engineering Lecturers on the Roles Expected of Human and Public Relations Officers in Marketing Industrial Education and Technology.

S/N	Expected Roles	IET Lecturers			Engineering Lecturer		
		N = 60			N = 30		
		$\bar{X}$	SD	DEC	$\bar{X}$	SD	DEC
1.	Creating awareness within and outside the school with regards to IET	3.50	0.50	SA	3.50	0.50	SA
2.	Sensitization of the public about the activities of IET programme	3.20	0.40	A	3.25	0.43	A
3.	Maintaining good character in & outside the school.	3.00	0.00		3.08	0.31	A
4.	Relating & perfecting the IET programme to other persons within and outside the school.	3.10	0.30	A	3.42	0.47	A
5.	Helping the school management to market the IET programme.	3.30	0.46	A	3.42	0.47	A
6.	Engaging in activities that will correct the poor image of IET programmes to the public.	3.40	0.49	A	3.00	0.00	A
7.	Supporting fund raising for IET development.	3.10	0.30	A	3.33	0.49	A
8.	Sensitization of the parents on the implications of interfering in the selection of careers for their children especially the females.	3.00	0.00	A	3.00	0.00	A
9.	Regular organization of workshops, seminars and competitions with encouraging prizes to motivate the public especially the females into IET.	3.20	0.40	A	3.33	0.49	A
10.	Presentation of successful professional technology educators, technicians, technologist and engineers as role models to young males & females.	3.30	0.46	A	3.00	0.00	A
	<b>Grand Mean/SD</b>	<b>3.21</b>	<b>0.33</b>	<b>A</b>	<b>3.23</b>	<b>0.32</b>	<b>A</b>

Result in table1 showed that 1 out of 10 items was the main expected role of human and public relations officers as respondents responded to the item as strongly agree. It is item 1 with corresponding mean of 3.50. And the remaining 9 items had mean rating ranging from 3.00 to 3.42 indicating that the respondents agreed that all the items were the roles expected by human and public relations officers. The grand mean also attests to that. The low grand standard deviation ranged from 0.00 to 0.50 indicates that their opinions are the same.

### Hypothesis 1

There is no significant difference between the opinions of IET lecturers and engineering lecturers on the roles expected of human and public relations officers in marketing industrial education and technology in Nigeria in the 21st century.

Table 2: The t – test Analysis of Mean Responses of IET Lecturers and Engineering Lecturers on the Roles Expected of Human and Public Relations Officers in Marketing IET in Nigeria in the 21st century

Respondents	N	X	SD	Df	P	t <sub>cal</sub>	t <sub>crit</sub>	Decision
IET lecturers	60	3.21	0.33	88	0.05	0.28	1.96	Do not reject
Engineering lecturers	30	3.23	0.32					

Table 2 showed that the calculate t-value of 0.28 is less than the critical t – value of 1.96; hence, the null hypothesis is not rejected. This shows that there is no significant difference between the mean responses of the IET lecturers and engineering lecturers on the expected roles of human and public relations officers in marketing IET in Nigeria in the 21st century.

**Research Question 2**

What are the measures to be adopted by human and public relations management in marketing industrial and technology in Nigeria in the 21st century?

Table 3: Mean Rating of IET Lecturers and Engineering Lecturers on the Measures to be Adopted.

S/N	Measures to be Adopted	IET Lecturers			Engineering Lecturer		
		N = 60			N = 30		
		$\bar{X}$	SD	DEC	$\bar{X}$	SD	DEC
1.	Provision of funds for human/public relations activities.	3.20	0.40	A	3.35	0.45	A
2.	Motivating human/public relations officers to show interest in marketing IET.	3.30	0.46	A	3.00	0.00	A
3.	Integrating human and public relations activities into the school curriculum.	3.10	0.30	A	3.08	0.31	A
4.	Recognizing outstanding human and public relations officers achievement through awards, commendation, news, release honour roll, among others.	3.30	0.46	A	3.17	0.34	A
5.	Organizing regular field trips for human and public relations officers.	3.00	0.00	A	3.35	0.43	A
6.	Effective IET instruction.	3.30	0.46	A	3.42	0.47	A
7.	Provision of standard facilities and material for teaching saleable skills.	3.10	0.30	A	3.42	0.47	A
8.	Supporting the establishment of human and public relations officers' IET club.	3.20	0.40	A	3.00	0.00	A
9.	Setting out time in the school calendar for human and public relations officers' exhibitions and job fairs.	3.30	0.46	A	3.17	0.34	A
10.	Effective supervision of students on industrial attachments and teaching practice exercise.	3.20	0.40	A	3.25	0.43	A
<b>Grand Mean/SD</b>		<b>3.20</b>	<b>0.36</b>	<b>A</b>	<b>3.22</b>	<b>0.32</b>	<b>A</b>

Result in table 3 shows that all the 10 items are the measures to be adopted by human and public relations management as respondents responded to all the items as agreed. The grand mean for all the items is 3.21 and the grand standard deviation is 0.34. This is an indication that the items are the measures to be adopted in marketing IET by human and public relations management. The low standard deviation indicates that the respondents were close in their responses.

**Hypothesis 2**

There is no significant difference between the opinions of IET lecturers and engineering lecturers on the measures to be adopted by human and public relations management in marketing industrial and technology in Nigeria in the 21st century.

Table 4: The t-test Analysis of Means Responses of IET Lecturers and Engineering Lecturers on the Measures to be Adopted by Human and Public Relations Management in Marketing Industrial and Technology in Nigeria in the 21st Century.

Respondents	N	X	SD	Df	P	t-cal	t-crit	Decision
IET lecturers	60	3.20	0.36	88	0.05	0.27	1.96	Do not reject
Engineering lecturers	30	3.22	0.32					

Table 4 shows that the calculated t-value of 0.27 is less than the critical t-value of 1.96; hence, the null hypothesis is not rejected. This implies that there is no significant difference between the mean responses of IET lecturers and engineering lecturers on the measures to be adopted by human and public relations management in marketing industrial education and technology in Nigeria in the 21st century.

### Major Findings:

The following findings were made in the study:

1. Ten roles of human and public relations officers were identified in marketing industrial education and technology by both IET lecturers and engineering lecturers.
2. A total of ten measures to be adopted by human and public relations management in marketing industrial education and technology in Nigeria in the 21st century were determined.
3. There was no significant difference between the opinion of both IET lecturers and engineering lecturers on the expected roles of human and public relations officers in marketing industrial education and technology in Nigeria.
4. There was no significant difference between the opinion of both IET lecturers and engineering lecturers on the measures to be adopted in marketing industrial education and technology in Nigeria in the 21st century.

### Discussion of Findings:

The findings in table 1 showed that the respondents agreed that all the items were the expected roles of industrial education and technology officers in marketing industrial education and technology in Nigeria in the 21st century. These findings are in agreement with Calhoun and Finch (2020) who noted that industrial education and technology officers are the most important public relations agents to market industrial education programme in Nigeria. Creating awareness within and outside the school with regards to IET, sensitization of the public about the activities of IET programme, maintaining good character in and outside the school among others are the roles expected of industrial education and technology officers in marketing industrial education and technology programmes in Nigeria. The study showed that there is no specific difference between the mean responses of IET lecturers and engineering lecturers on the roles of industrial education and technology officers. This is consistent with Yakubu (2016) who posited that sensitization is the key role in marketing IET programmes in Nigeria.

Results in table 3 showed that the respondents agreed with all the items as the measures to be adopted in marketing industrial education and technology programme by industrial education and technology management. The provision of funds for human and public relations activities confirms the observations of Okwelle (2010) that any school affair, if properly funded would yield better output. The findings with respect to the hypothesis agreed, with the findings of Nnajofofor (2010) who in his studies discovered that provision of standard facilities and materials for teaching saleable skill is a strong measure for marketing any product in Nigeria.

### Conclusion

Human and public relations activities in tertiary institutions offering industrial education and technology programmes are needed to effectively market the missions, goals, accomplishments, challenges and accountability to the public. This is necessary to correct the poor societal perceptions about industrial education and technology which have not encouraged enrolment into IET programmes. The effective supervision of students on industrial attachments and teaching practice exercise is already a strong marketing measure to be adopted in marketing industrial education and technology in Nigeria. It is also concluded that since the identified roles and measures in marketing industrial education and technology programme in Nigeria are true, all the agents must be rewarded accordingly.

### Recommendations

Based on the findings of this study, the researcher proffers the following recommendations:

1. Tertiary institutions with IET programme should have in place well-coordinated human and public relations units with responsibility of each officer defined.
2. Budgetary provision should be set aside by school management for human and public relations units.

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