

# Correlate of Selected Elements of Total Quality Management and Educational Goal Achievement of Students in Polytechnics in Rivers State

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**Abstract:** The study was conducted to ascertain the relationship between selected elements of total quality management (effective communication and Staff training) and educational goals achievement in polytechnics in Rivers State. It was guided by two specific objectives, two research questions and two hypotheses. The study adopted a correlational research design with a population of 261 top management staff from two polytechnics in the state. The sample constituted 189 top management staff selected through purposive sampling technique. Two instruments were used for data collection which included: Effective Communication and Training Scale and Educational Goals Achievement in Polytechnic Scale. The instruments were face and content validated by three experts and with an overall reliability coefficient of 0.90 for the Total Quality Management Implementation Scale and 0.63 for the Educational Goals Achievement in Polytechnic Scale. Data collected were analysed using Pearson Product Moment Correlation for the research questions and t-test transformation for r values at 0.05 level of significance. The result showed that a positive, high and significant relationship existed between effective communication and educational goals achievement in the study area. The result also showed that a positive, high and significant relationship existed between staff training and educational goals achievement in the study area. Based on the findings, it was recommended among others that Staff should be exposed to training on a regular basis. This would enhance their capacity to deliver quality service towards achievement of educational goals in the studied polytechnics.

**Keywords:** Effective Communication, Staff Training, Total Quality Management, Educational Goal Achievement.

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## Introduction

Technology education is a key to national development. Polytechnics were established in Nigeria to enhance access to technology education (Federal Republic of Nigeria, FRN, 2013). Polytechnic education plays a vital role in human resource development of a country by creating skilled manpower, enhancing industrial productivity and improving the quality of life. Polytechnic education promotes technical and vocational education and training, technology transfer as well as skills development to enhance the socio-economic advancement of the country. Polytechnic education in Nigeria prepares individual as technicians and technologists in courses leading to awards of National Diploma (ND), Higher National Diploma (HND) and Advanced Professional

Diploma relevant to the needs, aspirations and the development of the nation's diverse economy and industries (Jahun, 2017). The National Policy on Education by the Federal Republic of Nigeria (FRN, 2013) specifies that the goals of Polytechnics are to: Provide the technical knowledge and skills necessary for agricultural, industrial, commercial and economic development in Nigeria; Give training and impart the necessary skills for the production of technicians, technologists and other skilled personnel who shall be enterprising and self-reliant; Train people who can apply scientific knowledge to solve environmental problems for the convenience of man; Give exposure on professional studies in the technologies; Provide full-time or part-time courses of instruction and training in engineering, other technologies, applied science, business and management/leading to the production of trained manpower. Achievement of these goals of polytechnics requires an effective and efficient management system. Total quality management provides an opportunity for achieving effective and efficient management system.

Total Quality Management (TQM) concept focused on the adoption of an all-inclusive approach by an organization to get every employee at all levels to work meticulously toward the achievement of organisational objectives. Barrie, Ton van der & Jos van (2007) assert that TQM is the mutual cooperation of everyone in an organisation and associated business processes to produce value-for-money products and services to meet and hopefully exceed the needs and expectations of customers. TQM should be implemented into a company as a Kaizen initiative being a strategy developed by the Japanese which stands for continuous improvement. Consequently, with TQM at the core of an organization, every employee works conscientiously on a daily basis to achieve the best quality attainable within the organisation. Typical elements of Total Quality Management are management commitment, staff training, teamwork, communication, quality assurance among others (Nechi, 2017). In this study, the researcher was interested in communication and staff training.

Communication is an element in any management system which can promote success in an organization (Bucăța & Rizescu, 2017). Communication serves as a connection string between among all members of an organisation. Communication is common understanding of ideas among parties involved within a union. Achieving the aim of total quality management requires communication among all members and stakeholders of an organization. Communication will be complete and effective if when an information is communicated, from the sender, it is clear, and the receiver perceives the message in the way it was intended by the sender (Choudhary & Rathore, 2013).

Communication is defined as the transmission of information from one person to another. Communication can also be seen as a process of sharing and exchanging ideas, feelings, information, and thoughts (Oboegbulem & Onwurah, 2011). Apart from the need for effective communication and co-ordination in the management structure and process, the basic functions of education, rely almost on communication among teachers and students and co-ordination among various institutional structures and levels. In any institution where there is effective communication, there will be understanding among staff, harmony in work operation, good interpersonal relationship and easy realization of common objectives and goals. In the application of effective communication, institutional heads like vice-chancellors, rectors, provosts, principals and headmasters are expected to establish and encourage good interpersonal relationship among

the staff and students so as to maintain a continuous improvement in the quest for quality education. Communication is therefore having a common understanding of the ideas transmitted by someone. Both the sender and the receiver of such information have to understand and communicate at the same level. TQM success is conditioned by effective communication among all members of the organization, suppliers and customers. Superiors should create and maintain channels of communication through which to receive and transmit information about TQM processes. Sharing of accurate information is vital for a harmonious working environment. For credible communication, it is absolutely necessary that the message be clear and that its interpretation by the receptor should not differ from the original intent of the sender.

A business can flourish when all objectives of the organization are achieved effectively. For efficiency in an organization, all the people of the organization must be able to convey their message properly. Communication is the activity of conveying information through the exchange of thoughts, messages or information as by speech, visuals, signals, writing or behavior. Emphasis on communication came from human relation approach of management. The human relation writer conceptualized that if worker new what is expected of them, and are aware of the objectives of the organization, and there is regular feedback of their performance, they invariably will be more productive (Choudhary & Rathore, 2013).

Communication is defined as the exchange of information and understanding between two or more persons or groups. Note the emphasis on exchange and understanding. Without understanding between sender and receiver concerning the message, there is no communication. All information is encoded, and prior agreement must be reached on the meaning of the code. Quality must be carefully defined and measures agreed upon. Communication downward cannot work because it focuses on what we want to say. Communication should be up and down. Employees should be encouraged to set measurable goals (Choudhary & Rathore, 2013).

Effective communication is an indispensable instrument for organizational success, because without communication one remains isolated and stranded. Effective communication occurs when a desired effect is the result of intentional or unintentional information sharing, which is interpreted between multiple entities and acted on in a desired way. This effect also ensures the message is not distorted during the communication process. Effective communication should generate the desired effect and maintain the effect, with the potential to increase the effect of the message. Therefore, effective communication serves the purpose for which it was planned or designed. Possible purposes might be to elicit change, generate action, create understanding, inform or communicate a certain idea or point of view. When the desired effect is not achieved, factors such as barriers to communication are explored, with the intention being to discover how the communication has been ineffective (Choudhary & Rathore, 2013).

As a life-wire of an organisation communication attempts to protect and promote the corporate image of an organisation through an effective public relations system. Since communication is an act of transmitting information or a rejoinder can save an organisation a lot of embarrassment. The specific role of communication as a tool for industrial relations with respect to collective bargaining and negotiation is worth mentioning. Here communication takes the persuasive style. In areas of conflict resolutions communication does a wonderful job. There is perhaps no better method of resolving conflicts and conflict situation than through effective communication. One

other very important role of effective communication is in the area of change and relocation (Choudhary & Rathore, 2013).

**Training:** Training is very important for employees to be very productive. Supervisors are responsible for implementing TQM in their departments and to spread the philosophy of TQM among employees (Prajogo & Brown, 2004). Training programs are important in creating and maintaining an environment for quality improvement. Supervisors are solely responsible for implementing TQM within their departments, and teaching their employees the philosophies of TQM. Training of employees in the acquisition of interpersonal skills, the ability to work as a team, techniques for solving problems, the ability to make decisions, performance analysis in order to improve the work, among others are necessary for effective implementation of total quality management. You have to be trained to become more efficient and more effective as an employee of an organisation.

Achievement of educational goals required adequate provision of human, material and financial resources. It also requires effective and efficient utilization of the available resources (Usman, 2016). Effective utilization of resources for optimal achievement of organizational goals is a key objective of total quality management. It was in light of this backdrop that the present study was intended.

The educational goals of polytechnics revolve round the core concept of Technical Vocational Education and Training (TVET). Technical vocational education and training (TVET) as defined by UNESCO (2002) is a comprehensive term referring to those aspect of 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. In the words of Ayonmike and Okeke (2015), TVET is that branch of education that uses information technology and globalisation to impart technical and vocational skills to prospective industrial workers either at the foundational level or entrepreneurs. Ukula in Sofoluwe (2013) conceived TVET as a highly useful education as its occupation content is such that the trainee acquires skills, attitudes, interest and knowledge to perform socially and economically work that is beneficial to him and the society at large. TVET ensures the provision of skills and knowledge which serve as tools for the socio-economic development of any nation (Goel, 2010). Furthermore, Afeti (2010) opines that Technical vocational education and training is very crucial in the training and development of skilled entrepreneurial workforce required for the ever-changing technological work environment. In addition, one of the goals of TVET as contained in the national policy on education, NPE (2013) is to provide trained manpower in the applied sciences, technology and business particularly at craft, advanced craft and technical levels. To further buttress these views, Okoye and Okwelle (2013) submit that TVET is mainly for those who will not only acquire it but also profit at it. In essence, human capacity building in skill-based technological areas is achievable through TVET. This assertion is supported by Ezeani and Urama (2014) who report that TVET is needed for the industrial development of the nation. Hence, polytechnic graduates need to be properly trained with adequate polytechnic resources if the technological advancement of Nigeria is to be realized and this has to pursued through total quality management.

## **1.2 Statement of the Problem**

Polytechnics play significant role in technological advancement in Nigeria. Polytechnics in Nigeria were established to produce middle level manpower to meet the technological need of the country (Petinrin, Agbolade & Petinrin, 2021). As stipulated in the Nigerian National Policy on Education by the Federal Republic of Nigeria (FRN, 2013), polytechnics were established with the aim of equipping individuals with technical knowledge and skills necessary for agricultural, industrial, commercial and economic development in Nigeria. Also the polytechnics aimed at training and impacting the necessary skills for the production of technicians, technologists and other skilled personnel who shall be enterprising and self-reliant.

Unfortunately, it is observed that quite a number of students graduate from the polytechnics are yet to be gainfully employed in either a paid job or self-created job (Longe, 2017). This situation has been attributed to different causes such as very limited relevance of training in schools to industry practice, inadequate practical training, poor funding for acquisition of training facilities and infrastructure in the school, among others (Onoyase, 2019; Ugbohmeh & Ogie, 2018). The presence of these problems poses threat to achievement of educational goals in polytechnics.

## **1.3 Purpose of the Study**

The purpose of this study is to ascertain the relationship between effective communication, staff training and educational goal achievement of students in polytechnics in Rivers State. Specifically, the study intends to:

1. ascertain the relationship between effective communication and educational goals achievement of students in polytechnics in Rivers State.
2. determine the relationship between staff training and educational goal achievement of students in polytechnics in Rivers State.

## **1.4 Research Questions**

The study provided answers to the following research questions. Specifically, the study intends to:

1. What is the relationship between effective communication and educational goals achievement of students in polytechnics in Rivers State?
2. What is the relationship between staff training and educational goal achievement of students in polytechnics in Rivers State?

## **Methodology**

The study adopted a correlational research design. The population of the study was 189 top management staff from Ken Saro Wiwa Polytechnic Bori and Captain Elechi Amadi Polytechnic Port Harcourt (Source: Registry of the three Polytechnics). The number consists of 99 top management staff from Ken Saro Wiwa Polytechnic Bori, 90 top management staff from Captain Elechi Amadi Polytechnic Port Harcourt. The top management staff included: top management administrative staff such as directors as well as heads of departments and schools. The sample size for the study was 189 top management staff of two polytechnics including 99 from Ken Saro Wiwa Polytechnic Bori and 90 from Captain Elechi Amadi Polytechnic Port Harcourt. Based on the manageable size of the population, the researcher adopted census sampling technique. Two different instruments were used for data collection in this study. The first is Management Communication and Staff Training Scale (MCSTS). The second instrument is Educational Goals

Achievement in Polytechnic Scale (EGAPS). The second instrument, EGAPS has a total of 9 items used to collect data for educational goals achievement. Each of the items on the instruments are rated on four point rating scale ranging from Very High Extent (VHE) with a score of 4, High Extent (HE) with a score of 3, Low Extent (LE) with a score of 2 and Very Low Extent (VLE) with a score of 1. The instruments was validated by three experts. The reliability of the instruments were tested using Cronbach Alpha which yielded 0.76 for MCSTS and 0.63 for EGAPS.

A total of 189 copies of the instruments after validation and reliability were administered to the respondents. This was achieved with the help of a two trained research assistants with one from each of the polytechnics involved in the study. A total of 171 copies were completed and used for data analysis.

The research questions were answered using descriptive statistics of mean. Cut off mean of 2.50 was used as decision rule for the mean. Consequently, a mean response up to 2.50 and above was considered High Extent (HE) and accepted while any mean response less than 2.50 was considered Low Extent (LE) and rejected. For the hypotheses, Pearson Product Moment Correlation (PPMC) was used. The r-values were transformed to t-values to make decision for accepting or rejecting the hypotheses. This is achieved by converting calculated value of r (r-cal) to t-test statistics. The formula for converting r to t according to Udoh (2003) is:  $t = r \sqrt{\frac{n-2}{1-r^2}}$ , where r is the

calculated coefficient of correlation, n is the sample size. This becomes the calculated value of t. This value was compared with the critical value of t at 0.05 level of significance and 187 (189-2) degree of freedom. If calculated value of t (t-cal) was greater than the critical value of t (t-crit), the hypothesis was rejected otherwise, retained.

**Research Question 1:** What is the relationship between effective communication and educational goals achievement of students in polytechnics in Rivers State?

**Table 4.2: Relationship between Communication and Educational Goals Achievement**

| Variables                        | N   | $\sum X$ | $\sum Y$ | $\sum X^2$ | $\sum Y^2$ | $\sum XY$ | r     |
|----------------------------------|-----|----------|----------|------------|------------|-----------|-------|
| Communication (X)                | 171 |          |          |            |            |           |       |
| Educational Goal Achievement (Y) | 171 | 459      | 438      | 1302       | 1172       | 1202      | 0.437 |

Field Survey, 2022

Result from Table 1 shows the result for the test of hypothesis 2. The result shows a correlation coefficient (r = 0.437). This value shows that there is positive and low relationship between communication and educational goal achievement in polytechnics in Rivers State. This means that the higher the implementation of communication as an element of total quality management, the higher the achievement of educational goals in the study area.

**Research Question 2:** What is the relationship between staff training and educational goal achievement of students in polytechnics in Rivers State?

**Table 2: Relationship between Staff Training and Educational Goals Achievement**

| Variables                        |  | N   | $\sum X$ | $\sum Y$ | $\sum X^2$ | $\sum Y^2$ | $\sum XY$ | r     |
|----------------------------------|--|-----|----------|----------|------------|------------|-----------|-------|
| Staff Training (X)               |  | 171 |          |          |            |            |           |       |
|                                  |  |     | 412      | 438      | 1041       | 1172       | 1087      | 0.659 |
| Educational Goal Achievement (Y) |  | 171 |          |          |            |            |           |       |

Field Survey, 2022

Result from Table 2 shows the result for the test of hypothesis 1. The result shows a correlation coefficient ( $r = 0.659$ ). This value shows that there is positive and slightly high relationship between staff training and educational goal achievement in polytechnics in Rivers State. This means that the higher the implementation of staff training as an element of total quality management, the higher the achievement of educational goals in the study area.

**Hypothesis 1:** There is no significant relationship between communication and educational goal achievement of students in polytechnics in Rivers State.

**Table 3: Test of Significant Relationship between Management Communication and Educational Goal Achievement Skills and Employability**

| Variables                        | N   | $\sum X$ | $\sum Y$ | $\sum X^2$ | $\sum Y^2$ | $\sum XY$ | r     | t-cal | t-crit | p-value | Decision |
|----------------------------------|-----|----------|----------|------------|------------|-----------|-------|-------|--------|---------|----------|
| Communication (X)                | 171 |          |          |            |            |           |       |       |        |         |          |
|                                  |     | 459      | 438      | 1302       | 1172       | 1202      | 0.437 | 6.313 | 1.974  | 0.000   | Rejected |
| Educational Goal Achievement (Y) | 171 |          |          |            |            |           |       |       |        |         |          |

Field Survey, 2022

Table 3 shows the result for the test of hypothesis 2. The result shows a correlation coefficient ( $r = 0.437$ ). This value shows that there is positive and weak relationship between communication and educational goal achievement in polytechnics in Rivers State. This means that the higher the implementation of communication as an element of total quality management, the higher the achievement of educational goals in the study area. Transforming the correlation coefficient of 0.0.437 to t, yielded a calculated value of t (t-cal) of 6.313 against a critical t value (t-crit) of 1.974 at a degree of freedom (df) of 169. Since, t-cal is greater than t-crit, and also, p-value is less than 0.05 the hypothesis was rejected. This implies that although there existed a weak relationship between communication as an element of total quality management, the higher the achievement of educational goals, the relationship was significant.

**Hypothesis 2:** There is no significant relationship between staff training and educational goal achievement of students in polytechnics in Rivers State.

**Table 4.13: Test of Significant Relationship between Management Staff Training and Educational Goal Achievement Skills and Employability**

| Variables                        | N   | $\sum X$ | $\sum Y$ | $\sum X^2$ | $\sum Y^2$ | $\sum XY$ | r     | t-cal  | t-crit | P-value | Decision |
|----------------------------------|-----|----------|----------|------------|------------|-----------|-------|--------|--------|---------|----------|
| Staff Training (X)               | 171 | 412      | 438      | 1041       | 1172       | 1087      | 0.659 | 11.393 | 1.974  | 0.000   | Rejected |
| Educational Goal Achievement (Y) | 171 |          |          |            |            |           |       |        |        |         |          |

Field Survey, 2022

Table 4 shows the result for the test of hypothesis 1. The result shows a correlation coefficient ( $r = 0.659$ ). This value shows that there is positive and slightly high relationship between staff training and educational goal achievement in polytechnics in Rivers State. This means that the higher the implementation of staff training as an element of total quality management, the higher the achievement of educational goals in the study area. Transforming the correlation coefficient of 0.659 to t, yielded a calculated value of t (t-cal) of 11.393 against a critical t value (t-crit) of 1.974 at a degree of freedom (df) of 169. Since, t-cal is greater than t-crit, and also, p-value is less than 0.05 the hypothesis was rejected. This implies that there was a significant relationship between the extent of implementation of staff training and educational goal achievement in polytechnics in Rivers State.

**Discussion of Findings**

The result for research question one showed that there was positive and slightly high relationship between effective communication and educational goal achievement in polytechnics in Rivers State. This means that the higher the implementation of communication as an element of total quality management, the higher the achievement of educational goals in the study area. The relationship was significant at 0.05 alpha level of significance. The result agrees with that of Ejionueme and Oyoyo (2015) who found that effective communication is applied in secondary school administration in Umuahia Education zone. The result agrees with the result by Nechi (2012) who that found showed that implementation of total quality management had significant impact on organizational productivity as perceived by the respondents. The result agrees with that of Ejionueme and Oyoyo (2015) who found that effective communication is applied in secondary school administration in Umuahia Education zone. The result agrees with the result by Brinia, Selimi, Dimos and Kondea (2022) who found that effective communication and feedback had a significant positive impact on goal achievement.

The result for research question five and test of hypothesis five showed that there was positive and slightly high and statistical significant relationship between staff training and educational goal achievement in polytechnics in Rivers State. This means that the higher the implementation of staff training as an element of total quality management, the higher the achievement of educational goals in the study area. The relationship was significant at 0.05 alpha level of significance. The result agrees with that of Michael (2019) who found that empowerment of staff plays key and important role in the successful implementation of total quality management. The result further agrees with that of Adeniji and Okafor (2021) who conducted a study to assess the extent to which business owners in Oyo State used the principles of total quality management to their daily



operations. Adeniji and Okafor found that small and medium-sized business owners sometimes training principles in their day-to-day operations.

### Conclusions

The study investigated the relationship between effective communication and staff training as elements of total quality management and educational goal achievement in polytechnics in Rivers State. Based on the findings, it can be concluded that there is fairly moderate level of communication and extent of achievement of educational goals in the study area. It can also be concluded that a positive, slightly high and significant relationship exist between effective communication and educational goals achievement in the study area. Furthermore, it can be concluded that staff training has positive, fairly high and significant relationship with educational goals achievement in the study area.

### Recommendations

Based on the findings, the following recommendations were made:

1. Quality practice should be well communicated within the various units in the polytechnics through the use of newsletters memo and others.
2. Staff should be exposed to training on a regular basis. This would enhance their capacity to deliver quality service towards achievement of educational goals in the studied polytechnics.

### REFERENCES

- Adeniji, O. A., & Okafor, C. V. (2021). Level of utilization of total quality management principles in business operations by entrepreneurs in Oyo State. *Nigerian Journal of Business Education (NIGJBED)*, 8(1), 200-206.
- Afeti, G. (2010). *Technical and Vocational Education and Training for industrialization*. Retrieved July 14, 2022 from <http://www.arrforum.org/publication/occasional-papers/40/95-technical-and-vocational-education-and-training-for-industrialization.html>
- Ari J. N. (2020). *Industrial Training Fund decries disparity in school curriculum, industrial need as unemployment rate soar*. Lagos: BusinessDay NG.
- Ayonmike, C. S. & Okeke, B. C. (2015). The Nigerian Local Content Act and its implication on technical vocational education and training (TVET) and the nation's economy. *International Journal of Education Learning and Development* 3, (1), 26-35. Retrieved July 11, 2022; from [www.eajournals.org](http://www.eajournals.org)
- Barrie, G. D., Ton van der W. & Jos van I. (2007). *Managing Quality 5th ed*. Oxford: Blackwell Publishing.
- Brinia, V., Selimi, P., Dimos, A., & Kondea, A. (2022). The impact of communication on the effectiveness of educational organizations. *Education Sciences*, 12(3), 170.

- Bucăța, G., & Rizescu, A. M. (2017). The role of communication in enhancing work effectiveness of an organization. *Land Forces Academy Review*, 22(1), 49-57.
- Chang, H. H. (2006). An empirical evaluation of performance measurement systems for total quality management. *Total Quality Management*, 17 (8), 1093-1109.
- Choudhary, M. K., & Rathore, N. S. (2013). Role of effective communication in total quality management. *International Journal of Scientific & Engineering Research*, 4(7), 2083-2090.
- Ejionueme, L. K., & Oyoyo, A. O. (2015). Application of Total Quality Management (TQM) in Secondary School Administration in Umuahia Education Zone. *Journal of education and Practice*, 6(27), 102-111.
- Eke, A. O. (2004). Applicability of Benchmarking as a Total Quality Management tool in manufacturing firms in Nigeria. *Unpublished Ph.D Thesis, Department of Management, University of Nigeria, Nsukka.*
- Ezeani, A. N. & Urama, M. S. (2014). *Technical Vocational Education and Training (TVET) and the nation's industrial development*. Paper presented at the Clute Institute International Academic Conference, Munich, Germany.
- Federal Government of Nigeria (FGN, 2013). *National policy on education*. Lagos: NERDC Press.
- Goel, R. (2010). *Report of the Technical Committee on the Harmonization of Funding for Technical Vocational Education and Training*. Ghana: COTVET.
- Jahun, I. S. I. (2017). The roles and contributions of Nigerian polytechnics in the development of surveying and geo-informatics education; issues, prospects and challenges: A global perspectives. *FIG working week: Helsinki, Finland*. Retrieved April 27<sup>th</sup>, 2022 from [https://www.fig.net/resources/proceedings/fig\\_proceedings/fig2017/papers/ts08g/TS08G\\_jahun\\_8584.pdf](https://www.fig.net/resources/proceedings/fig_proceedings/fig2017/papers/ts08g/TS08G_jahun_8584.pdf)
- Kumar, V., De Grosbois, D., Choisine, F. and U. Kumar, U. (2008). Performance measurement by TQM adopters, *The TQM Journal*, 20(3) 209 – 222.
- Longe, O. (2017). Graduate unemployment in Nigeria: causes, consequences and remediable approaches. *American International Journal of Contemporary Research*, 7(4), 63-73.
- Michael, S.I. (2019). Management of human resources for successful application of total quality management in universities in South-South, Nigeria. (*Unpublished Doctoral Dissertation, Rivers State University*).
- Nechi, N. H. (2017). *Impact of Total Quality Management on Organizational Productivity (A Case Study of Ama Brewery, 9th Mile Corner, Enugu)* (master's thesis), University of Nigeria, Nsukka.

- Oboegbulem, A. I. & Onwurah, C .U. (2011). *Organization and management of education: A Nigerian perspective*. Enugu: Great AP Express Publishers Ltd.
- Okoye, K. R. E. & Okwelle, P. C. (2013). Technical and vocational education and training (TVET) in Nigeria and energy development, marketing and national transformation. *Journal of Education and Practice*, 4(14), 134-138.
- Onoyase, A. (2019). Causal factors and effects of unemployment on graduates of tertiary institutions in Ogun state south west Nigeria: Implications for counselling. *Journal of Educational and Social Research*, 9(4), 119-127.
- Petinrin, J. O., Agbolade, J. O., & Petinrin, O. O. (2021). Polytechnic Education: A Tool to Sustainable Economy and Technological Growth. *Technology (IJOSEET)*, 6(1), 1-10.
- Prajogo, D. I. & Brown, A. (2004). The Relationship Between TQM Practices and Quality Performance and the Role of Formal TQM Programs: An Australian Empirical Study. *The Quality Management Journal*, 11(4), 31-42.
- Sofoluwe, A. O. (2013). Re-engineering Vocational and Technical Education (VTE) for Sustainable Development in North Central Geo-Political Zone, Nigeria. *Academic Journals*, 8 (19), 1842-1849. Retrieved on July 8, 2022 from <http://www.academicjournals.org>
- Udoh, O.A. (2003). *Hypotheses testing in education: An illustration*. Joe Graph Publications. Ikot Ekpene, Akwa Ibom State.
- Ugbomhe, O. U., & Ogie, D. O. (2018). Total Quality Management in Nigerian Polytechnics in the 21st Century: Issues and Challenges. *Total Quality Management*, 6(2), 9-18.
- Usman, Y. D. (2016). Educational Resources: An Integral Component for Effective School Administration in Nigeria. *Online Submission*, 6(13), 27-37.