

Teachers' Perception of Community Resources Utilization for Sustainability of Basic Technology Instructions in South-West Nigeria

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Abstract

Community resources entail instructional environments whereby teachers and learners get helping hands through real-life experiences with the locally available supports or aids that would make teaching and learning process to be real and meaningful to teachers and learners. This study was conducted in the South-west geopolitical zone of Nigeria. A total of 959 basic technology teachers in junior secondary schools proportionally sampled from Oyo and Osun states. One research hypothesis was formulated and tested. Answers were provided for two research questions in the study. Questionnaire on Teachers Perception of Community Resources was used to collect necessary data. The results revealed that the identified community resources are available for basic technology teachers to facilitate teaching and learning of the subject in school, also, it was revealed that the teachers have high and positive perception of utilizing the locally available support for facilitating basic technology Instruction. Moreover, male and female basic technology teachers were not different in their perception of the use of community resources for teaching with an indication of Cronbach's alpha value of 0.65 and 0.74 respectively. Based on this findings it was therefore recommended that the usefulness of community resources in basic technology instruction should be sustained.

Keywords: Basic Technology, Community Resources, Instruction, Perception, Resource Person, Utilization.

Introduction

The place of instructional resources in the well-delivered curriculum cannot be over-emphasized. These resources provide ways by which learning contents messages can be disseminated to learners. Amosa (2013) stated that instructional resources can be grouped into human and material supports or aids that a teacher can use to pass information to the learners in his or her class. Instructional resources, apart from enhancing positive attitude of learners towards learning, also help students in making use of their various functioning sense organs to the maximum.

Resources are those materials used by instructors and learners to concretize instructional contents. Learning and instructional resources abound and they can be categorized into human and material resources such as resource persons, centres, places, television, radio,

computer, printed and non-printed materials. The classification of teaching and learning materials is based to some degree on the five senses and based to some extent on common senses. According to Abolade (2009), the categorization adopted includes Audio materials, Visual materials, Audio-visual materials and Community resources.

Amosa (2013) describes community resources as all instructional environments whereby teachers and learners get helping hands through real-life experiences with the locally available supports or aids that would make teaching and learning process to be real and meaningful to teachers and learners. Community resources refer to teaching supports or aids sourced from locally available places like production companies, higher institutions workshops, private sawmills, roadside mechanic work and web-based resources. Bakare (2011) describes community resources as resource persons and materials resources which are within the geographical area of both the teachers and learners that aids or supports information in the class.

Dada (2013) identified some relevance of community resources in the learning situation. They can motivate students and enhance their interest in school work, for example, students of social studies who watch a naming ceremony conducted in the traditional way might learn better and probably be more willing for subsequent visits. Furthermore, the use of community resources assists learners to witness the real process of what they have learnt in the classroom. It also stimulates new interest in the students and lesson to become real. Community resources make the possible close observation of a multitude of natural and man-made materials, thereby improving learner's observation skills. The use of community resources in basic technology instruction helps in developing learning as an integrated or an interdisciplinary unit. For instance, a basic technology lesson can be done in the community through a process of how a tree is being felled from the forest, cut into logs of wood and split into marketable size at the saw-mill.

Since basic technology is concerned with the application of scientific laws and principles to satisfy human needs, the formal instructional setting is a closed space for instructional delivery. Therefore, teaching and learning must further away to the locally available supports or aids. There are several resources both human and non-human within the community that can be used in several ways to enhance teaching and learning Yusuf (2004). Abolade (2009) also explained that there are several resource persons within the community, these resource persons can be used in several ways. They can be used as the guest speaker within the school to provide new information and experience for the students.

Basic Technology is a major subject at junior secondary school level. This is clearly shown with its inclusion in Nigerian education curriculum (6-3-3-4) in 1982 as an outcome of the National curriculum conference of September, 1969 held in Lagos which aimed to review old and identify new national goals for Nigerian education at all levels with priority to the needs of individual youth and adult in the task of nation-building and the social and economic needs, aspiration and well-being of our society.

The new 9-3-4 system of education (Universal Basic Education) which took off in 2006 has the first nine years of basic and compulsory education up to the grade 9 level, three years at the senior secondary school, and four years at the tertiary institution levels respectively. It was designed to streamline the over-crowded nature of subjects offered at the basic educational level. The new curriculum is expected to be re-aligned to meet the Millennium Development Goals (MDGs), education for all goals and the National Economic Enhancement Development

Strategies (NEEDS). There are a lot of stakeholders who have an interest in the effective integration of practical experiences especially the use of immediate environments in the pedagogical system where teachers play key roles. Appropriate use of locally available supports could be a model to transits from the conventional method of instructional delivery to an experiential learning experience. Empowering of instructors including, the administrators and managers would play a major role in enabling this (Ndirika, 2011). Perception is a word which has its origin from the Latin word "Percipio" which means "taking, accepting, possessing, and apprehending with senses" (Yusuf and Falade, 2016). It may be described as the means by which living organisms organize, interpret and consciously comprehend what is happening around them.

The study by Naisiyaki, Jackson and Kirui (2017) confirmed that teachers have the negative perception of the adequacy of some selected instructional materials. Let us see the perception of the instructors on the utilization of locally available supports in classroom situations for Basic Technology instruction. The National Policy on Education (FRN, 2004) stipulated in Basic Technology to be included in Junior Secondary Schools' curriculum. This would incorporate every individual to become the reputable and effectual citizen. The newly introduced educational system (9-3-4) in which the subject became necessary to enhance technological development so as to fulfil the dictate of the National Policy that is aimed at bringing the Nation to the world globalization standard in Education. The contents under each are made to reflect the basic nature of technology that is Knowledge, skill, creativity and attitude.

The word 'use' entails setting a thing into action or service in order to achieve end results or a purpose. Utilization of community – based service is the actual act of practically using the valuable content of the services to achieve some purpose/specific goal. To this end, using community – based supports varies with the task. Nigerian Educational Research and Development Council (2013) suggested utilization of supports or aids which includes school resource centres, libraries, workshop/laboratories, educational resource centre, web-based resources (those on internet) and community-based resources (resources from the local environment) such as things in our homes, market, skilled occupations around us like woodworkers, welders' workshops among others. Examples of resources for teaching various topics in Basic Technology are given in table 1

Table 1: Resources for Teaching Various Topics in Basic Technology.

Topic	Resources	Sources
Motor vehicle parts	A motor car Labelled diagram of internal parts of vehicle, posters and pictorials. Vehicle under repair. Pieces of various motor parts.	Homes, schools, Basic Technology workshops, school resource Centre, education resource Centre, mechanic village, marketplaces, motor parts, dealers shop. Timber shed, woodwork shops, Basic Technology workshop and market.
Woodwork Project	Timber, woodwork machines and tools, non-wood materials such as adhesives, nails, screws, hinges, wood varnish. Wood projects.	www.Personal.utulsa.edu/Kenneth.we. www.ebay.cp.uk/sch/metalworking.mil . www.warco.co.k/5-metal-working.machine.
Energy Conversion	Kerosene stove, Torchlight, Radio. Solar panel.	Architect's drawing room or Studio, Technical drawing laboratories.
Metalwork Machines	Lathe machines, Drilling machines, Power Hacksaw, Shaping and Grinding machines.	
Board Practice (use of drawing instruments).	T-square, Set square, Drawing Board, Compass, Dividers, Ruler. Protractor, Pins or Masking tape.	

Source: (NERDC, 2013).

Statement of the Problem

Basic Technology is an activity-oriented course. NERDC (2013) recommends that the subject must be taught with resources that will facilitate full attention and participation on the learners' side during lesson period. The study by Olaniyan and Ojo (2008) had submitted that non-availability of well – equipped Basic Technology workplaces with adequate functional machinery were some major problems militating against excellent performances of learners in Basic Technology in Nigeria. These problems have been ameliorated through utilization of locally available supports or aids such as things in our homes, markets, skilled occupations around us like carpentry workshops, welding workshops and so on. This would create rooms for interaction between teacher, learners and the learning resources for Basic Technology instructions.

Purpose of the Study

The main purpose of this study was to investigate teachers' perception and attitude towards utilizing community resources in teaching Basic Technology in South-West, Nigeria. Specifically, the study:

1. Determined the availability of the community resources for teaching Basic Technology
2. Determined teachers' perception of the use of community resources for teaching Basic Technology

Research Questions

The following research questions were generated to guide the conduct of this study:

1. What are the available community resources for teaching Basic Technology?
2. What is the Basic Technology teachers' perception of the use of community resources?

Research Hypotheses

This null hypothesis was tested in the study;

- H₀₁:** There is no significant difference between male and female Basic Technology Teachers' perception towards the use of community resources for teaching

The scope of the Study

This research work was a descriptive research type utilizing survey method. The research sample consisted of 959 Basic Technology teachers drawn from the Junior Secondary Schools in two states (Oyo and Osun,) in South-west Nigeria.

Research Methodology

Research design:

Research Design is an outline of the plan for the process employed the researcher on the study. This study will adopt a descriptive research design. Litchman (2013), revealed that a research design is a blueprint, a detailed plan, a map of the various elements of research and how they relate to each other. Therefore, a descriptive survey design was used to carry out this study. The reason for choosing this research design is because of its advantage of allowing the description of conditions as they occur in their natural setting.

Population and Sample

According to Sanni (2011), a research sample assists to inform the quality of inferences by the researcher from the underlying findings. Multi-stage sampling will be used. Multi-stage sampling connotes the combination of sampling strategies. (Mertens 2015). The target population for this study was all the Junior Secondary School Basic Technology teachers from two states (Oyo and Osun,) in South-west Nigeria. Purposive sampling technique was employed to select 959 Basic Technology teachers for this study. Items were selected based on their relevance to "Teachers Perception of, and availability of community resources for Basic Technology".

Research Instrument

A survey can be defined as the scientific way of gathering relevant information on an individual or group of people through questioning and inquiring about something important in relation to their values, attitudes, behaviour, belief, perception and knowledge. Leedy and Ormord, (2014); Wrench, Thomas-Maddox, Richmond and Croskey (2013), sees survey as a form of research which involves with the acquisition of information in respect to one or more groups of people's ideas, perceptions and their characteristics, opinion, attitude or previous experience by requiring a tabulating answers for the generated questions given to

them. An instrument tagged Questionnaire on Teachers Perception of Community Resources (QTPCR) which has three sections was used to collect the necessary data. The instrument asked information about demographic characteristics and Biodata information of the teachers and sought to find out if the recommended community resources by NERDC for teaching various topics in Basic Technology are available or not. It also finds out about teachers' perception of the use of community resources for teaching Basic Technology. The response mode for the availability of the resources is: available (A), Not Available (NA). While the response mode for teachers perception was the Likert's response modes of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD).

Validation of Research Instruments

The instrument was validated by Educational Technology Experts and measurement and evaluation experts. The reliability of the instrument was determined section by section based on the two major variables. For availability of the using the recommended community resources, the Cronbach's alpha value was 0.65 and for teachers' perception of the use of community resources for Basic Technology, the Cronbach's alpha value of 0.736 was obtained. Personal involvement at this stage allowed the researcher to get familiar with the respondents. A total of 959 samples were selected from Oyo and Osun states. The copies of the completed questionnaire were collected from the respondents immediately, coded and analyzed. Facts gathered from the respondents were computed utilizing frequency count, percentage, *t-test* and Analysis of Variance (ANOVA).

Data Analysis

The data was collected by the researcher and analyzed with the use of frequency counts and percentages.

Results and Discussion

Demographic Information of Respondents

Table 2: Distribution of Respondents by Gender

Gender	No of Respondents	Percentage (%)
Male	459	55.9
Female	362	44.1
Total	821	100

Table 2 shows that the male teacher respondents constitute a greater majority in the research sample than the female counterparts.

Research Question 1

What are the available community resources for teaching Basic Technology?

Table 3: Availability of Community resources for Teaching Basic Technology

S/N	Community Resources	A (2)	NA (1)	N	X	Interpretation
1	Wood/Furniture Workshop	578	243	821	1.70	A
2	Metal/Sheet Metal workshop	480	341	821	1.59	A
3	Basic Technology Workshop	556	265	821	1.68	A
4	Potter Lodge	479	342	821	1.58	A
5	Sawmill	528	293	821	1.64	A
6	Hydropower Dam	221	600	821	1.27	NA
7	Electricity Transmission Station	437	384	821	1.53	A
8	Water Recycling Plant	397	424	821	1.48	NA
9	Water Works	443	378	821	1.54	A
10	Radio Transmission Station	438	383	821	1.53	A
11	Mechanic workshop/village	561	260	821	1.68	A
12	Blacksmith workshop	497	324	821	1.61	A
13	Airport control tower	221	600	821	1.27	NA
14	Local food processing industry	558	263	821	1.67	A
15	Packaged water industry	511	310	821	1.62	A
16	Plastic industry	270	551	821	1.33	NA
17	Rubber processing industry	218	603	821	1.27	NA
18	Electrician workshop	542	279	821	1.66	A
19	Computer Training Centre/cybercafé	547	274	821	1.67	A
20	Educational Resources Centre	521	300	821	1.64	N
21	Soap processing industry	340	481	821	1.41	NA
22	Motor parts Dealer's shop	473	348	821	1.58	A
23	Others	191	630	821	1.23	NA
	Grand Means				1.53	A

As indicated by the results shown in table 3, and with a benchmark of 1.5, it appears that most of the identified community resources were available for teaching Basic Technology. Out of the 23 identified items, only 7 were unavailable. These are hydropower (1.27), water recycling plant (1.48), airport control tower (1.27), plastic industry (1.33), rubber processing industry (1.27), soup processing industry (1.41) and others (1.23). However, based on the grand mean of 1.53, it can be inferred that most of the required resources for teaching basic technology were available.

Research Question 2:

What is Basic Technology instructors' perception of using community resources?

Table 4: Teachers' Perception of the Use of Community Resources for Teaching Basic Technology

S/N	Statement	SA (4)	A (3)	D (2)	SD (1)	N	X
1	Comprehension Enhancement	534	179	71	37	821	3.47
2	Contents Simplification	368	269	104	80	821	3.13
3	Local Technology Application	414	288	79	40	821	3.31
4	Teaching Effectiveness	415	282	84	40	821	3.31
5	Realistic Teaching and Learning Process	430	267	83	41	821	3.32
6	Practical Teaching Learning Enhancement	454	238	90	39	821	3.35
7	Indispensability for Basic Technology Contents	326	307	137	51	821	3.11
8	Motivational Enhancement	411	261	112	37	821	3.27
9	Learning Retention Enhancement	445	231	106	39	821	3.32
	Grand Mean						3.29

The individual mean scores recorded by each item of the questionnaire range from 3.11 to 3.47 resulting into a grand mean score of 3.29 as indicated in table 4, with 2.5 as the benchmark, it can be inferred that secondary school Basic Technology teachers have the good perception of using local supports for facilitating Basic Technology instruction.

Hypothesis One

H₀₁: There is no significant difference between male and female Basic Technology teachers' perception OF the use of community resources for teaching Basic Technology.

Table 5: t-test of Male and Female Basic Technology Teachers' Perception of the Use of Community Resources

Gender	No of Respondents	X	SD	Df	T	Sig. (2- tailed)
Male	459	28.98	6.67	819	2.24	0.025
Female	362	29.93	5.20			
Total	821					

As indicated in the table 5, $t(819) = (2.24)$, $p = 0.025 < 0.05$. Since the p-value is less than the 0.05 level of significance, the null hypotheses are not accepted, meaning that there is a significant difference in male and female Basic Technology teachers' perception of the use of community resources for teaching the subject. The implication of this is that the observed high positive perceptions of the male and female Basic Technology teachers on the use of community resources for Basic Technology in classroom situations are not significantly different.

Conclusion

The findings in the research established that most of the identified community resources were at hand for Basic Technology instructions and the perception of Basic Technology teachers towards the use of community resources in teaching was positive. This implied that effort to make it work should, therefore, be made by all stakeholders at the Upper Basic School level. Moreover, there was no significant difference between male and female Basic Technology teachers' perception of the use of community resources in teaching.

Recommendations

Depending on the findings and conclusions of this study, it was observed that Utilization of community resources must be encouraged in basic technology instructions. This can be done through government and other stakeholders' support to schools. Community resources where available should be planned properly and effectively utilized in the classroom. Therefore, upper basic school teachers should make use of their immediate environment in their lessons; Government, curriculum designers and educational planners should be motivated to intensify the use of real-life experiences and industrial visits in the teaching and learning process; Government and curriculum designers should shift from teacher-centred pedagogy to a more effective learner-centred pedagogy in the teaching and learning process so that community resources will be known to various stakeholders in education.

References

- Abolade, A. O. (2009). Learning and instructional resource material in Abimbola I.O. (Ed) *Fundamental principle and practice of instruction*. Department of Curriculum Studies and Educational Technology, University of Ilorin. Pp 252-262.
- Amosa, A. A. (2013). Effect of Community Resources on Junior Secondary Schools' Performance in Basic Technology in Ilorin, Kwara State, Nigeria. *Journal of Resources Development and Management: An Open Acces International Journal*, (1). 44 -48
- Bakare, K. M. (2011). Community Resources Instruction, in I.O. Salawu (Ed) In *Contemporary Issues in Educational Technology*. Patlove Publishing Co. Lagos. 131 - 137
- Dada S. O. (2013). "Utilization of Community Resources for Social Studies Education" *International Journal for Science and Research*, India Online ISSN: (2). 68 -79
- Leedy, P. D. & Ormord, J. E. (2005). *Practical Research: Planning and Design*. 8th EdNew Jersey: Pearson Education Inc. pp 18 - 32
- Lichtman, M. (2013). *Qualitative Research in Education: A user's guide*. Third Edition. SAGE Publications Inc. pp 67 - 89
- Mertens, D. M. (2015). *Research and evaluation in education and psychology*. Thousand Oaks, CA: Sage.
- Naisiyaki, S. L, Jackson, K.T. & Kirui, J. K. (2017). Perception of teachers on the availability of instructional materials and physical facilities in secondary schools Of Arusha District, Tanzania. *International Journal of Educational Policy Research and Review*, 4 (5), pp 103-112.
- Ndirika, M. C. (2011). *Equipping Teachers for Global Technological Challenges in Education through Information and Communication Technology (ICT) in Teacher Education*. Being a paper in the proceedings of the 32nd International Conference of Nigeria Association for Educational Media and Technology (NAEMT) 1. 178-181
- Nigerian Educational Research and Development Council, (NERDC). (2013). *9-year basic Education curriculum on Basic Technology for junior school 1-3*. Abuja, Federal

- Olaniyan, D. A & Ojo, L. B. (2008). Challenges against the implementation of Introductory Technology Curriculum in Nigeria Junior Secondary schools, *European Journal of Scientific Research* 24(1), 112-118
- Sanni, R. I. O. (2011): *Educational Measurement and statistics (A pragmatic approach)*. Lagos: Ziklag Publishers. *Science Computer Review*, 20, 116- 123.
- Wrench, J. S. Thomas-Maddox, C., Richmond, V. P. & McCroskey, J. C. (2013) *Quantitative research methods for communication: A hands-on approach*. Cape Town: Oxford University Press. Pp 112 - 146
- Yusuf, H. T. (2004). *Attitude to and use of community resources in Social studies teaching in Ilorin, Kwara State*. A Master dissertation, University of Ilorin, Nigeria.
- Yusuf, M. O. & Falade, A. A. (2016). Stakeholders' Perception of Access to and Credibility of ICT Integration into Distance Learning in Nigeria. *Journal of Capital Development in Behavioural Sciences*, 4(2) 60-78.