

# IDENTIFYING CREATIVITY ENGAGEMENT AMONG NIGERIAN CHILDREN: IMPLICATION FOR ENHANCING A SUSTAINABLE TECHNICAL VOCATIONAL EDUCATION AND TRAINING PROGRAMME

## Article history

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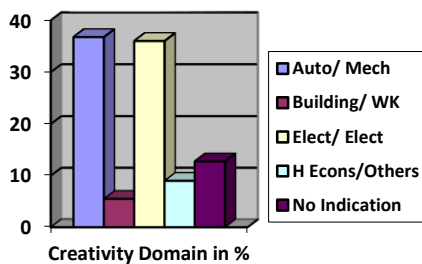
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## Graphical abstract



## Abstract

Creativity is a natural skill often exhibited by children at home and in schools, especially during play. Children are often seen playing with drawings and moulding of objects. Hence, if care is taken to encourage and develop children's creativity, it may enhance a sustainable development in Technical Vocational Education and Training (TVET) programme. The aim of this study therefore was to determine the level of engagement of Nigerian children in creativity practice. The study was carried out using 400 (232 boys and 168 girls) Junior Secondary School students of age eleven to thirteen as sample. Specifically, the study sought to find out whether or not the children do undertake creative activities at home and the domains in which their creative activities are based upon. A Child-Creative Inventory Form (CCIF) was used as an instrument for data collection. Data collected were analyzed using both percentages and Chi-Square. The findings of the study revealed that Nigerian children love to engage in creative activities mostly in the domain of technical and vocational skills such as: building technology, woodworking, mechanical technology, and electrical electronics. The study revealed that 87.07% of the boys were engaged in creativity while that of girls was 73.81.5%; 7.76.% of the boys were not engaged in creativity while that of girls was 20.8%. 24.57% of the boys were not sure of their involvement while that of girls was 5.36%. In all, the study found a significant difference in the level of engagement of boys and girls in creativity with  $P < 0.05$  level of Significance. It was therefore recommended that children who are creative in the domains of technology could be assisted to develop their career in these domains as this would be a means to sustain the TVET programme in the nation.

Keywords: Creativity, sustainability, technical education, children

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## 1.0 INTRODUCTION

Technical Vocational Education and Training (TVET) can be defined as a programme meant for skill acquisition in some specific trades. The Federal Government of Nigeria [1] in its educational policy defined TVET as that form of education, which is obtainable at the technical colleges. This is equivalent to the Senior Secondary Education, but designed to prepare individuals to acquire practical skills, at sub – professional levels with basic scientific knowledge and attitude required for craft-men and technicians. TVET has also been described as any form of education whose aim is to prepare person(s) for occupation or group of occupations [2].

The goals of the TVET at this level as stated by the Federal Government of Nigeria [1] are to:

1. Enable individuals acquire vocational and technical skill.
2. Explore individual to career awareness by exposing useable options into the world of work.
3. Enable youth acquire an intelligent understanding of the increasing complexity of technology and;
4. To stimulate creativity or creative thinking skill among the youth.

The essence of the last goal is to ensure that students who are regarded as the recipients of the programme are not only developed in technical skills; but to ensure that they are also developed in attitudes and habits that will make them become creative, innovative and resourceful persons [2].

In line with the educational policy of the Federal Government of Nigeria, Hsiao [3] suggested that all technical college education programs should be run well to enhance the economic and environmental consequences of the professional tasks involved. The professional tasks referred to here could only be maximally carried out through the knowledge of the students' creative ability [4].

The term 'creativity' has been defined by many scholars in different ways because of lack of universal definition for the construct [5]. Therefore, creativity can be defined as a means of generating an idea by combining the existing ones in order to re-apply them in a new way. Some scholars like Fautley and Savage [6] viewed creativity as the process of producing something that is new, original and worthwhile. Other scholars who bought this idea agreed that creativity requires the ability to produce an outcome that is novel, highly qualitative and appropriate to the required or specific task [7, 8]. The implication of this concept is that a product which is not limited to a specific area or subject can be embarked upon [9].

Therefore, it can be deduced from the definitions above that creative people have the quality to think, work hard continually, improve on existing ideas and find solutions to prevalent societal and national problems. In addition, creative people always seek for avenue to initiate growth and development by making gradual alterations and refinements to their works.

## 1.1 Children's Creativity Development through Play

Creativity development among children can be realized through play. Thus children maintain close relationship with their peers through play and imaginative activities. Fumuto [10] saw play as creative reworking of the children's approach to action. This is a period of fantasy whereby skills and concepts acquired by children are utilized in solving a specific problem. Consequently, Robson [11] noted that at the period of play, the creative thinking of a child can be affected by the relationship that occurs between the peer group, parents and their teachers. In addition, Fumuto [10] suggested that teachers and parents therefore need to learn to study the children, listen to them and discover what their thinking and ability might be. His action will encourage provision of creativity programme in the early stage of educational programme [12].

However, NCCA [13] found that children often express themselves creatively in languages, visual arts, music, role playing and problem solving. The problem solving area referred to by this scholar is usually in the domain of engineering or technical education. This idea has been taken into consideration in some developed countries of United Kingdom such as: England, Ireland and wales by fostering creativity at the elementary schools across the whole range [14]. In Scotland in particular, there is plan to build the curriculum to emphasize the ability to think creatively and independently.

Apart from training the students to think creatively, Koutsoupidou [15] stated that teachers have the responsibilities to nurture and support children in developing their creative potentials. Hence, the teachers can do all these by practically translating the educational policy and curriculum into their classroom.

## 1.2 Sustainable Technical Education Programme

A sustainable technical education programme is that which is structured to produce graduates who are equipped with employability skills. The term sustainability is described by the American Indian Development Associates [16] to mean running, maintaining and continuing a programme or services with a long term value. Thus sustainable development is the type of development that meets the present needs without compromising the needs of the future generations [17]. The implication of this definition is that any programme that will be sustained must take the interest of the youth and children into consideration. Development itself is a process where a nation or an individual undergoes social an economic transformation leading to a rise in standard of living.

The UNESCO-UNEVOC Bonn declaration on sustainability in 2004 stated that "since education is the key to effective development strategies, then technical and vocational education is the master key that can alleviate poverty, promote peace,

conserve the environment, improve quality of life for all and help achieve sustainable development [18]. TVET also should be meant for the production of technicians, craftsmen and technologist that are needed for any meaningful productivity in agriculture, business, commerce and industries. The knowledge and expertise required to operate and maintain the machines for the production of goods and services to satisfy human needs.

In addition, If Sustainable development in TVET will be realized, the following attributes as identified by Kutynom [19] should characterize the programme:

1. Production of skilled craftsmen and technicians who can produce quality goods at all time for consumption.
2. Production of skilled craftsmen who can produce, install and maintain Industrial equipment for stable productivity.
3. Production of skilled craftsmen and technicians who can coordinate human resources for productivity.
4. Creation of job opportunities through the establishment of industries and thereby self-reliant as well standard of living.

### 1.3 Structure of TVET Programme in Nigeria

In an attempt to pursue her educational goals, the Government of Nigeria developed various vocational and technical educational programmes aiming at training skills at different levels. The educational programme which is referred to as the 6-3-3-4 System of Education and renamed as 9-3-4 System of Education begins at primary school and the Junior Secondary school (JSS) levels. The pupils are expected to undergo vocational programme as Pre-vocational education at the JSS level, with the subjects including: Basic Technology, Home Economics, Fine Arts, Computer, Music, Practical Agriculture and so on. At the Senior Secondary School (SSS) level, vocational education subjects include Building Construction, Applied Electricity, Metal Work, Wood Work, Auto mechanics, Home economics [1]. Students are expected to transit from this level to university, polytechnics or College of Education. Those who cannot continue can cross to technical college which can still lead the students into any of the tertiary institutions. A graduate of technical college is expected to either establish on his own or transit into a tertiary institution to study any of engineering, technical or technological courses.

### 1.4 Statement of the Problem

However, despite the fact that the federal Government has structured the technical education programme to train skills, it has been noted that the rate of admission into the system is very low [20]. Many students don't like choosing technical and vocational courses as their career as found by Oke [21]. Hence, sustaining a programme faced with low enrollment however will be difficult.

Also, Oke [22] found in a recent study that lack of adequate guidance and intrinsic motivation of students contributed to low enrollment into TVET in Nigeria as most students found themselves in technical programme circumstantially. This implies that it is either those who are more talented in the field were not discovered so they could be encouraged to enroll for it. On the other hand, ignorance of the children or discontinuity on the part of the children in their talented field, due to lack of motivation might ensue. This problem would be alleviated if the creativity potentials of the students are unfolded. Hence, this study was meant to discover the potentials and levels of engagement of Nigerian children in creativity. The finding of the study will have implication on sustainability of TVET programme in Nigeria by revealing to the government the areas where the children could be encouraged for further training and development.

### 1.5 Objective of the Study

The main purpose of this study was to find out the creativity engagement among Nigerian children. Specifically, the study sought to:

1. Determine whether the children normally engage in creative activities at home
2. Determine the relevant domains where they normally carry out creative activities.

### 1.6 Research Questions

1. Do children in Nigerian like to engage in creativity activities?
2. In what relevant domains do they normally carry out their creative activities?

## 2.0 METHODOLOGY

This study was a descriptive research design utilizing quantitative method for gathering data from its participants

### 2.1 Population

The population for the study comprised the children of ages 11-13 in the Junior Secondary School One and Two (JSS1 &2) in Nigeria.

### 2.2 Sample and Sampling Technique

The sample was made up of 232 boys and 168 girls, making a total of 400 Junior Secondary School 1 and 2 students randomly selected for this study. The choice of children at these academic levels was because the age-range falls within the growth age of fantasy in vocational/ career development identified by Donald Super [23]. Also, the students at this level are wise enough to respond to the questionnaire given to them.

## 2.2 Instrument/Data Collection

The study made use of an open-ended questionnaire named Child-Creative Inventory Form (CCIF) Oke [21] The instrument was sub-divided into two sections with each section focusing on a research question. The instrument was subjected to face and content validity and its reliability coefficient was found to be 0.75

## 2.4 Data Analysis

Data collected was analyzed using quantitative method. Both percentages and Bar charts, were used to analyze the data, while hypothesis in the study was tested at 0.05 level of significance using Chi-square with percentage deviation and residual Standardization.

## 3.0 RESULTS AND DISCUSSION

### 3.1 Research Question 1

Do Nigerian children like to engage in creative activities at home?

**Table 1** Children's response on their engagement in Creative activities at home

Students responses	Boys		Girls		Total	
	N	%	N	%	N	%
Engaged	202	87.07	124	73.81	326	81.50
Not Engaged	18	7.76	35	20.8	53	13.25
Not sure	12	24.57	9	5.36	21	5.25
Total	232	100	168	100	400	100

From Table 1, it could be observed that 81.50 % of the students indicated that they normally engage in creative activities at home while 13.25% of the students indicated that they did not engage in creative activities at home, while 5.25% of the students were not sure whether they normally engage in creative activities or not.

**3.2 Hypothesis 1:** There is no significant difference in the level of engagement of boys and girls in creative activities at home

**Table 2** Chi-Square showing the level of engagement of boys and girls in creativity

Students' Responses	Boys	Girls	Total	df	X <sup>2</sup> c	P Value
Engaged	202	124	326	2	14.65	P=0.0006 < 0.05
Not Engaged	18	35	53			
Not sure	12	9	21			
Total	232	168	400			

From table 2 above, it can be observed that the X<sup>2</sup>c value at df of 2 = 14.65 with P < 0.05 levels of significance Hence, the Null Hypothesis is rejected at 0.05 level of significance.

**Table 3** Percentage Deviation and Standardized Residual

Students' Responses	Percentage Deviation		Standardized Residual	
	Boys	Girls	Boys	Girls
Engaged	+6.8	-9.4	+0.94	-1.1
Not Engaged	-41.4	+57.2	-2.3	+2.7
Not Sure	-1.5	+2	-0.5	+0.06

Table 3 shows that the response of girls who indicated non- engagement in creativity was the major basis for rejecting the hypothesis as it has in the cell the Percentage Deviation of +57.2% and the Standardized Residual value of +2.7

### 3.3 Research Question 2

In what relevant domains do the children normally carry out creative activities?

**Table 4** Relevant domains of the children's creative activities

Students' Creativity Domain	Boys		Girls		Total	
	N1	%	N2	%	N1+N2	%
Automobile / Mechanical	92	24.49	55	32.73	147	36.75
Building/ Woodwork	17	5.25	5	2.98	22	5.50
Electricity/ Electronics	97	30.03	47	27.98	144	36.00
Others.	12	3.72	24	14.29	36	9.00
No indication	14	4.33	37	22.02	51	12.75
Total	232	100	168	100	400	100

Adapted from Oke [21]

From Table 4, it could be observed that 36.75% of the children indicated that they usually carry out creative activities in the domains of Automobile/Mechanical; 5.50% in Building/ wood work;36.0% in Electrical Electronics and 9.00% in Home economics and non-vocational areas. In addition, 12.75% of the students could not indicate the domains where they carried out creative activities. The illustration is further presented in Figure 1. Also, the difference in creativity engagement's domains of boys and girls is shown in Figure 2.

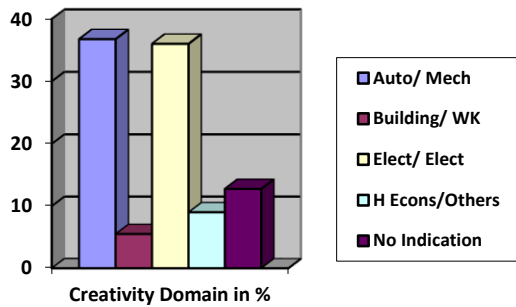


Figure: 1 Creativity engagement domains

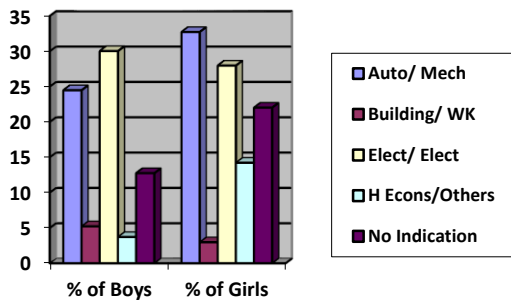


Figure 2 Creativity engagement domains by the children on gender basis

### 3.4 Discussions of Findings

The findings of this study showed that Nigerian children often engage themselves in creative activities at home. This was evident as 81.5% of the participants (made up of 87.07% of boys and 73.81% of girls) indicated that they do engage in creative activities. Though, the null hypothesis tested showed a significant difference in the level of engagement of boys and girls in creative activities. The Standardized residual showed that the hypothesis was rejected based on the level of non-participation of girls in creative activities compared with boys.

The study also revealed that most of the children normally engage in creative activities in technical/technology-related areas such as automobile, building, wood work, electrical /electronics, Home economics and other areas. The areas where they engaged in creativity mostly are automobile and electricity/ electronics and with percentage scores of 36.4% and 27.98% respectively. Though, the study showed that 9.0% of the children were girls and they are mostly engaged in creativity in the domain of Home Economics and other non-vocational areas. This result however caused a major base for significance difference in the responses of boys and girls. The engagement in technical/vocational areas shows that the children possess creativity in that domain.

The finding of the study showed that children in Nigeria do involved in creativity using images as noted by Aron[24]. It also confirmed the opinion

Jackson[25] that children can normally exhibit creativity in their areas of talents.

In comparing the creativity domains of girls with that of boys, as shown in Figure 2, and as early found by Oke [21]. The study shows that the percentages of boys who are engaged in creative activities in the domain of building technology/ woodwork, and electrical/ electronic are greater than girls. While the level of engagement of girls in creative activities in the domain of automobile/ mechanical and home economics are more than boys. Though, Home economics appears to be the job of girls and women. On the other hand, the technical-related courses such as automobile/ mechanics are believed to be mostly men's jobs. In contrast to this belief, the outcome of this study has shown that girls engage in creativity in the domain of automobile/ mechanical than boys. Hence, The outcome of the study has supported the early findings of Wolfradt [26] and Reuter [27] that girls are more creative than boys.

## 4.0 CONCLUSION

Based on the findings of this study, it is hereby recommended that: children should be encouraged to identify their areas of creativity; those who have identified their areas of creativity should be encouraged to continue in the same; Parents and teachers have important roles to play in helping children discover their areas of creativity in which they can develop their career later in life. Lastly, government should develop a programme to identify children's creativity at both primary and secondary school levels, while the children should be encouraged to continue with their careers.

A careful consideration of the above recommendations will help children to enroll in the TVET or Engineering programmes in the country. Hence, the level of enrolment into Nigerian Technical colleges will increase drastically.

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