

## INFLUENCE OF SEX ROLE ON THE CREATIVITY LEVEL OF UNDERGRADUATE STUDENTS OF TAI SOLARIN UNIVERSITY OF EDUCATION, NIGERIA

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### Abstract

*Creativity is an inherently dynamic process that draws together tradition, imagination and innovation which have impact on human progress and survival. Through creativity, multiple channels can be explored, such as, questions around social norms, identities and also expectations around gender roles and relations. The study therefore investigates the influence of sex role on the level of creativity among undergraduate students of Tai Solarin University of Education (TASUED), Nigeria. Two colleges were purposively selected from the four colleges in the university. These colleges are College of Humanities (COHUM) and College of Science and Information Technology (COSIT). Two departments from each college were selected using the random sampling technique. The sample size consisted of 400 students i.e. 200 students from each college. Two major instruments were used to test the hypotheses. The instruments are the Bem Sex Role Inventory and the creativity scale (Fields & Bisschoff, 2013). Three hypotheses were formulated and data was collected from participants using the research instruments. The data collected was analysed using ANOVA & t-test statistical tools. The results showed that students from the college of humanities were androgynous in their sex role, while, students from COSIT were masculine. It was also found out that females scored higher on the creativity scale when compared with their male counterparts. It was therefore concluded that the feminine traits are great factor when determining the level of creativity among undergraduate students. Recommendation was made that creativity should be included in the university curriculum just like entrepreneurial education and should be taught in the classroom as a course in Nigerian Universities.*

**Key words:** *Sex Role, Creativity, Undergraduates*

### Introduction

Creativity is said to be the ability to bring to existence something new; whereas, it could either be a new solution to a problem, a new device or method or a new artistic object or form. It is therefore an act or ability to create something new through imaginative skills. In the word of Penick (1992), he described creativity

as a process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements and disharmonies as well as identifying, searching for solutions, making guesses or formulation of hypotheses, and possibly modifying and restraining them, and experimenting to find results and finally communicating the results. Therefore, creativity could be a mental process involving the generation of new ideas. This therefore means that, it is a method of finding association between existing and new concepts or rearranging what is known in order to find out what is not known. Lin (1995), Amabile, (1996); Csikszentmihalyi (1996), also defined creativity as one's ability to produce ideas or products that are judged by a group of people to be both novel and appropriate, while, artistic creativity refers to the creativity expressed in any aspects of the art, including visual art, music, literature, dance, theatre, film and mixed media.

The creative process has two major aspects, which are, divergent thinking (which are: intellectual ability to think of many original, diverse and elaborate thought) and convergent thinking (intellectual ability to logically evaluate, critique and choose the best ideas from a selection of ideas). It was initially felt that only gifted or special people could be creative, but, research has it that only certain attributes are required to be creative (Oyindoyin & Olatoye, 2007). Whereas, Akinloye (2003), states that without creativity, a person is not able to access the fullness of information and resources available but is locked up in old habits, structures, patterns, concepts and perceptions. A creative person therefore requires passion and commitment; fresh way of looking at things; an understanding of people and an entrepreneurial willingness to take risk and work hard, ability to convince people that the new idea is good or better.

Unamma (2003), considered gender as a sex role identity which include division of labour, power inequalities and other cultural concepts of masculine and feminine which most societies stimulate during process of socialization. Empirical studies of gender differences in creative ability have yielded decidedly inconsistent findings, except for a consensus regarding the disproportionately greater male among widely recognized figures who are distinguished by their eminent creative accomplishments. In many studies, no discernable gender difference have been found (Kaufman, Baer & Gentile, 2004). In other studies women have surpassed men in creative ability (Reuter, Panskepp, Schnaber, Kellerhoff, Kempel & Hennig, 2005; Wolfradt & Pretz, 2001), whereas in other comparisons, men out performed women (Cox, 2002; Dollinger, Dollinger & Centeno, 2005). Also, Torrance (1981) findings showed male superiority over females, while Orioux & Yewchuk (1990) showed female superiority over males

in creativity. Tegano & Moran (1989) findings did not indicate any difference between male and female respondents on creativity.

Gender differences in creativity achievement vary considerably from field to field. In writing, musical performance, dance and drama, the creative achievements of women are more at par with those of men than in such field as science, musical composition or painting (Vernon, 1989). Olatoye (2008) reported that there was no significant difference between male and female achievement in Biology and Chemistry but reported a significant difference in Physics (boys scoring higher). Hammer (1964) found out that within a group of artists, creative men accept female aspects of their personality without the feeling of gender conflict. It makes them more open to emotions and more aesthetically sensitive. It therefore shows that femininity is the factor stimulating creative behaviour. Femininity occurred to be more stimulating for creativity also in the group of women. In an investigation of female scientists (Helson, 1967) a prestigious group of successful mathematicians was compared with another group of female mathematicians adjudged as having more average ability. The creative group received similar judgments on the characteristics typically ascribed to women, and they were often less “masculine”. Also, Ogunleye, Oke & Olowe (2015) affirmed that women in male dominated profession exhibited more of masculine personalities when compared with their counterparts in female dominated professions.

Kwaśniewska (2004) in her research of 240 subjects from two Warsaw universities involving creative people without distinguishing sex. The study shows that masculinity in creative people stays at a certain level, which is similar for both men and women. On performing the analysis of women and men respectively, it was uncovered that creative women could be characterized by masculine traits than average extent. Interestingly, creative and less creative women did not differ significantly in the reported level of femininity. The result therefore suggests that femininity level of creative men was much higher than in less creative men.

Similarly, in studies of creative men and women’s personality, some researchers have found similarities (Chavez-Eakle, Lara & Cruz Fuentes, 2006; Szobiova, 2006), while, others have found differences in personality (Labouvie-vief, 1994). Ai (1999) suggested that these pervasive inconsistencies might be explained, at least, in part, by differences in sex role identification across participants. The issue of sex role has attracted far less attention than gender itself in empirical creativity study. In an early gender role study, Carter (1985), found cognitive

flexibility scores to be significantly higher in androgynous individuals in comparison to individuals whose gender roles were described as feminine or undifferentiated. Howard (1995), concluded that, some psychologists are of the view that males are more creative than females due sex role differences emphasized in the society.

It is in view of the above that the researchers set out to find out the influence of sex role on the creativity level of undergraduate students from TASUED.

### **Purpose of study**

The purpose of the study is to:

1. ascertain which of the three types of sex role has the greatest influence on the level of creativity of TASUED undergraduate students.
2. determine if there is any gender difference among TASUED undergraduate students in relation to their level of creativity.

### **Hypotheses:**

1. There is no significant difference between the sex role of undergraduate students from TASUED and their level of creativity.
2. There is no significant difference between sex role and creativity level of undergraduate students of TASUED by college.
3. There is no significant gender difference between the levels of creativity among the undergraduate students of TASUED.

### **Methodology**

The research design that was adopted for this study was the descriptive survey method. This method of study is relevant because it involves the collection of data for the purpose of describing and interpreting existing conditions that affect the influence of sex role on the creativity level of undergraduate students of TASUED.

### **Sample and sampling procedure**

The sample consisted of 400 undergraduate students from two colleges of the institution. The two colleges were selected from the four colleges in the institution using purposive sampling technique. These colleges are: (i) College of Humanities (COHUM) & (ii) College of Science and Information Technology (COSIT). Two hundred students were selected from each college using the cluster random sampling technique.

## Instrumentation

Two major instruments were used in the collection of data for the research. The instruments adopted were Bem Sex Role Inventory by Bem S.L (1981) and the creativity scale by Fields & Bisschoff (2013).

The Bem Sex Role Inventory was divided into two sections. Section A solicited for personal information from the participants e.g. age, educational qualification, sex etc. while section B consisted of 30-personality traits and the participants were asked to list 10 personality trait that best described androgyny, femininity and masculinity and then list another 10 personality traits that best describes the participants. The creativity scale by Fields & Bisschoff (2013) is a 5 point likert Scale and the participants were required to tick any of the alternatives i.e. Strongly Agree, Agree, Undecided, Disagree and Strongly Disagree.

## Validity and Reliability

The test retest reliability of the instruments was Bem Sex Role Inventory (0.73) and Creativity Scale (0.75) after a two-week interval of test-retest. The researchers administered the instruments themselves.

## Result

The data collected were analyzed using ANOVA and t-test statistical tools. Details of the analysis are shown below:

## Data Analysis

**Hypothesis One:** There is no significant difference between the sex role of undergraduate students from TASUED and their level of creativity. 2-way analysis of variance statistical tool was used to analyse the data. The result of the analysis is as presented in table 1 below:

**Table 1:** Comparison of undergraduate students' sex role based on their level of creativity.

Sex role		Level of creativity			Total
		High	Moderate	Low	
Androgynous	n	93	56	15	164
	$\bar{x}$	38.11	36.11	32.08	37.41
	Sd	8.24	7.24	6.45	6.66
Masculine	n	9	14	66	89
	$\bar{x}$	33.19	32.74	30.63	31.26
	Sd	6.38	8.63	6.13	7.23
Feminine	n	31	88	28	147
	$\bar{x}$	34.28	35.24	31.61	34.74
	sd	6.08	8.83	5.83	7.39

Source of Variation	SS	DF	MS	F	Sig
Between sex role	406.39	2	203.16	8.66	.000
Between creativity	518.33	2	259.65	11.07	.000
Interaction	205.11	1	205.11	8.74	.000
Within group	9265.67	395	23.46		
<b>Total</b>	<b>10395.50</b>	<b>399</b>			

$P < 0.05, 2/395$

Data from table 1 showed that the values of calculated F-ratio of 8.66 for sex role, 11.07 for creativity and 8.74 for interaction between sex role and creativity were significant at  $p < .05$  giving 2/395 degrees of freedom respectively. Thus the null hypothesis is therefore rejected and alternate hypothesis accepted that there is a significant difference between the sex role of under graduate students from TASUED and their level of creativity.

To determine where differences lie among the groups, further analysis was carried out using Fisher's protected t-test for pair-wise comparison. The result is as presented in table 2 below.

**Table 2:** Pair-wise comparison of creativity level based on sex roles of undergraduate students of TASUED

Sex roles	Androgynous	Masculine	Feminine
Androgynous	37.41 <sup>a</sup>	12.48	15.16
Masculine	6.15	31.26	10.73
Feminine	2.67	-3.48	34.74

a- Group means are in the diagonal, differences between means are below the diagonal while the protected t are above the diagonal

From table 2, it could be seen that comparisons of the three sex roles were significant. Consequently, it goes on to show that the undergraduate students with androgynous sex role manifested highest level of creativity, followed by those with feminine sex role, while the masculine sex role had the lowest level of creativity.

**Hypothesis two:** There is no significant difference between the sex role and creativity level of undergraduate students of TASUED by college. This hypothesis was tested with 2-way Anova. The result is as presented in table 3 below.

**Table 3:** Sex role and creativity level of undergraduate students by college.

Sex role	College		Level of creativity			
			High	Moderate	Low	Total
Androgynous	COSIT	n	44	26	7	77
		$\bar{x}$	30.41	31.01	34.15	35.08
		sd	6.03	6.72	7.06	6.66
	COHUM	n	49	30	8	87
		$\bar{x}$	37.19	33.65	34.53	36.19
		sd	5.89	7.31	6.94	6.43
Masculine	COSIT	n	5	6	27	38
		$\bar{x}$	32.42	31.60	33.28	33.56
		sd	5.13	6.32	6.71	5.98
	COHUM	n	4	8	39	51
		$\bar{x}$	34.61	30.26	32.83	33.76
		sd	6.67	6.81	5.83	6.32
Feminine	COSIT	n	15	41	12	68
		$\bar{x}$	34.11	35.06	34.34	35.14
		sd	6.78	6.33	5.47	6.33
	COHUM	n	16	47	16	79
		$\bar{x}$	34.67	34.78	33.61	34.59
		sd	5.89	6.28	6.35	5.65

Source of Variation	SS	DF	MS	F	Sig.
Between sex role	316.23	2	158.12	8.19	.000
Between creativity	296.41	2	148.21	7.68	.000
Between college	106.04	1	106.04	5.49	.000
Interaction	209.57	2	104.79	5.43	.000
Within group	7601.25	394	19.29		
Total	8529.50	399			

P < 0.05, 2/394

An analysis of data in table 3 revealed that all the values of calculated f-ratio (8.19) for sex role, (7.68) for creativity, (5.49) for college and (5.43) for interaction between sex role, creativity and college were significant  $P < 0.05$  given 2/394 degrees of freedom. Since all the F calculated values are significant, therefore the null hypothesis is rejected while the alternate hypothesis is accepted. This means that there is a significant difference between the sex role and creativity level of undergraduate students of TASSUED by college.

Further analysis of data using sheffe method to conduct pair wise comparison showed that undergraduate students from COSIT exhibited masculine sex role and low level of creativity. On the other hand, those from COHUM manifested androgynous sex role and possessed high creativity level.

Hypothesis Three: There is no significant gender difference between the levels of creativity among the undergraduate students of TASUED. Independent t-test statistical tool was used to analysis data. The result of the analysis is as presented in table 4 below.

**Table 4:** Gender Comparison of TASUED undergraduate students' level of creativity

GENDER	N	X	SD	DF	t	Sig
MALE	160	32.16	5.24	398	-7.77	.000
FEMALE	240	36.28	5.06			

\*  $P < 0.05$

It could be seen from table 4 that the value of t calculated of -7.77 is significant  $P < 0.05$  given 398 degree of freedom. Consequently, the null hypothesis is rejected while the alternate hypothesis which stated that there is a significant gender difference between the levels of creativity among the undergraduate students of TASUED is accepted. A close look at the means scores of the two gender revealed that female undergraduate students of TASUED showed high level of creativity when compared with their male counterparts who showed low level of creativity.

## Discussion

The result shows that undergraduate students from TASUED with androgynous sex role manifested the highest level of creativity. This probably could mean that creativity entails having both masculine and feminine traits. This was also corroborated by Carter (1985), who found out that cognitive



flexibility scores in gender studies showed a significantly high score in androgynous individual when compared to individual whose gender roles were described as feminine or undifferentiated. Kwaśniewska (2004) confirmed the result from her findings which shows that masculinity in creative people stays at a certain level, which is similar for both men and women. On performing the analysis for women and men respectively, it was uncovered that creative women could be characterized by masculine traits to higher than average extent. Also, comparing the influence of sex role on creativity by college, the result shows that students from COHUM are androgynous in their sex role and having high level of creativity while COSIT students are mainly masculine with low level of creativity. This explains the fact that students in the Humanities tend to be more creative than students in the Sciences. This probably could mean that students offering Arts courses tend to have the combination of both masculine and feminine traits (androgynous) which aid their level of creativity. This confirms Hammer (1964) findings that within a group of artists, creative men accept female aspect of their personality without the feeling of gender conflict. This made them more open to emotions and more aesthetically sensitive. It was also found that female undergraduate students of TASUED showed high level of creativity when compared with their male counterparts. This findings is also supported by Reuter et, al. (2005); Wolfradt & Pretz, (2001) who found out that women surpassed men in creative ability, whereas, the findings contradict Cox (2002), Dollinger, Dollinger and Centeno (2005) findings that men outperform women in creative ability.

### **Conclusion and Recommendation**

In conclusion, one thing that could be deduced from the findings is the fact that feminine traits play a major role in determining the level of creativity of undergraduate students. This therefore means that there is high probability that feminine traits are vital for creativity. It therefore means that gender is not really a significant determinant in creativity, rather, the sex role orientation of the individual and probably his/her personality trait.

Based on this conclusion, the following are hereby recommended:

1. Creativity should be included in the university curriculum and should be taught as a course alongside entrepreneurial education which is already being taught in the classroom.
2. Sex role re-orientation/personality traits should be included in the curriculum on creativity in order to expose the students to various traits they need to acquire for them to be creative.

3. Counseling psychologists should be employed to teach the aspects of sex role orientation/personality trait. The counselling psychologist will be able to help the students to learn the traits that they need in order to be creative and unlearn those that are not needed.

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