

Gender, Personality Types and Emotional Intelligence as Predictors of Creativity Skills among in-School Adolescents in Ibadan

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(Received: 21-4-14 / Accepted: 1-7-14)

Abstract

Creativity and innovation has been described as the driving force for success in the 20th century, hence, its importance in the life of the adolescents who are the leaders of tomorrow cannot be over-emphasized. However, most of these young ones don't really demonstrate the needed skills for creativity and innovation. Therefore, this study examined the relationship between gender, personality types and emotional intelligence, and creativity skills among secondary school adolescents in Ibadan. Three hundred SS 2 and SS 3 students randomly selected from ten secondary schools in Ibadan metropolis participated in the study. They were made up of one hundred and thirteen males and one hundred and eighty-seven females. The students responded to Akinboye's (1996) Type-A and B Behaviours Inventory and Animasahun's (2007) Emotional Intelligence test and creativity assessment scale for data collection. Data collected were analysed using multiple regression analysis, student t-test and Pearson Product Moment Correlation Coefficient (PPMC). Three research questions were raised and three hypotheses generated to guide the study. Results obtained showed that there is significant positive relationship between each of the independent variables and creativity skills. They jointly contributed a total of 95% to the variance of creativity skills among the participants. Also, a significant difference exists in the creativity skills between male and female secondary school adolescents. There is a significant difference in the creativity skills between high and low emotional intelligent students and there is a significant difference in the emotional intelligence between male and female students. The finding revealed that emotional intelligence is the best predictor of creativity skills. On this basis, it was recommended that teachers should discourage negative emotions such as anger, worry, fear and distress in students and encourage students to develop their emotional intelligence consciously.

Keywords: Creativity skills, Type A and Type B Personality types, Emotional intelligence, Gender.

Introduction

In every country of the world today, education remains the basic focus and concern of serious governments. As emphasised by Fadipe (1998), education remains the bedrock of growth and development of any nation. It is the only succor for meaningful development, this is the reason why the developed nations, in spite of their level of development, still invest heavily on good education. Education remains the only key that unlocks the development of personal and national potentials, and to all kinds of rights and powers be they political, economic, religious or social. However, Nigerian society is confronted with various degrees of problems and every individual needs education to survive poverty and ignorance. Nobody was born with the mark of suffering but the society and human inconsistency have created poverty that is prevalent in all developing countries. Nevertheless, creativity has the capacity of transforming the economy so that the populace would benefit from the product of their creative genius. On this premise therefore, the study attempts to examine the predictive capacity of gender, personality type and emotional intelligence on creativity skills among secondary school adolescents in Ibadan.

Creativity is a mental process involving the generation of new ideas or concepts or new association between existing ideas or concept (Renzulli & Reis, 1994). According to Mumford (2003:110), creativity is defined “as the process of producing something that is both original and worthwhile or characterised by originality, expressiveness and imagination. Franken defined creativity as the tendency to generate or recognise ideas, alternatives or possibilities that may be useful in solving problems, communicating with others and entertaining ourselves and others (Traitman, 2012). Sikszenmihalyi defined creativity as any idea or product that changes an existing domain or that transforms an existing domain into a new one. What counts is whether the novelty he or she produced is accepted for inclusion in the domain (Trautmann, 2012:91).

A consistent finding from the adolescent studies is that several characteristics, personality traits and environmental factors facilitate the development of high levels of creativity as well as creative products, giftedness in young people and adolescents (Reis, 1998; Sternberg & Lubart, 1993). Personality traits and characteristics of highly creative persons make them excel in all they do. Much of the work on personality factors associated with high creative achievement suggests that there is a consistent psychological profile of creative persons, though there is considerable variety from one person to the next (Sikszenmihalyi, 1996), this cluster of personality traits distinguishes more creative individuals from those with low levels of creative potential. Creative persons are generally considered to be open to new experience, persevering, non-conforming and intellectually and emotionally independent, they may be impulsive yet self-confident, and often they have good insight into their abilities, they may be less group-oriented, more introverted, seeking more time alone than do average people.

Other characteristics that researchers and theorists have associated with creative giftedness include awareness of one’s own creativity (Daniel, 1997) and emotional maturity, including the courage to actualize one’s abilities (Sternberg & Lubart, 1993). Creative achievers may withdraw more often and seek solitude for some creative tasks that require long stretches of concentration without interruption.

Creatively gifted individuals also tend to be much less motivated by external rewards like grades and public recognition and more driven by a love for creative work (Kirshenbaum & Reis, 1997). More recent work has also concluded that youngsters who are exceptionally creative engage in fantasy and on opening express motion (Russ, Robins & Christano, 1999), the same study also found that their emotional expression was relatively stable over time. Young people who expressed more emotion in their early years also do so later in their adulthood.

Davies (1992, 1999) reviewed over twenty personality characteristics compiled by researchers of creative persons and categorized them into sixteen positive characteristics of individuals with high creative ability or potential as well as twelve negative traits. The positive traits include awareness of creativeness, independent in energetic, thorough, sense of humour, original, risk taking, capacity for fantasy, curious, attracted to complexity and ambiguity, artistic, need for alone-time, emotional, open-minded, perceptive and ethical. The negative traits include questioning rules and authority, stubbornness, low interest in details, forgetfulness, indifference to common conventions, rebellious and argumentative, tendency to be emotional, absent minded, neurotic, impulsive or hyperactive. These negative traits tend to upset the parents and educators, as well as some of the peers of creative children since they lead to behaviors not considered appropriate in traditional classrooms.

Creatively talented children may exhibit different characteristics than academically gifted children. Those with high academic abilities may have the potential to develop creative gifts and talents, yet many creatively talented students do not necessarily display high academic performance in school.

Emotional Intelligence (EI) a concept rooted in the theory of social intelligence (Rehfield, 2002) is defined in a number of ways such as one factor that allows a person to feel, be motivated, regulate mood, control impulse, persist in the face of frustration and thereby succeed in day-to-day living (Goleman, 1995). Emotional intelligence is a different way of being smart. It has also been identified as the ability to monitor one's own and others feeling. Emotional intelligence is an ability to recognise the meanings of emotions and their relationships and to reason and solve problems on the basis of them (Mayer, Caruso & Salovey, 2000).

Mayer and Salovey's (1997) studies of emotional intelligence have shown its relevance to many aspects of life and concluded that it accounts for as much as 80% of a person's success in life.

Creativity is tied to strong emotion. This is probably why anytime people, particularly adolescents express their creativity in an emotional state. Strong negative emotions such as anger, worry, fear and distress can activate the limbic system and the amygdale producing destructive hormones, neurotransmitters and cortisol, such emotional processes naturally shut off the cerebral cortex where creativity, intuition and intelligence are based, this is called cortical inhibition (Akinboye, 2002). On the other hand, love, happiness and joy increase perception, intuition, creativity and intelligence. No wonder, it has been asserted that love is the antidote to fear and the wellspring of creativity and innovation (Akinboye, 2003).

Another important variable in this study is gender. While some researchers have found that gender plays a role in the manifestation of creativity of the adolescents other studies have found contradictory results. Biological theories of gender difference in creativity can be seen in many different fields. Baer (1999) pointed out that the achievements of women in the Fine Arts and liberal arts such as writing, musical performance and drama are more in alignment with the male counterparts that is seen in the applied and theoretical sciences, music composition and painting; Baer argued that "active discrimination against women had often made it difficult or impossible for women to have access to the resources necessary for achievement in some fields. Thus a woman might more easily succeed in a field like writing where the necessary resources are few than in musical composition or science where lack of access to an orchestra or a well equipped laboratory might make it far less likely that a woman could participate" (Baer, 1999:751).

Developmental theories of gender difference in creativity focus on the stages of development for boys and girls and creativity, according to developmental theory (Baer, 1999) boys taking in new information are more likely to respond to accommodation and girls to assimilation,

due to the nature of divergent thinking tests, it would be predicted based on developmental theory that boys would tend to perform better than girls. However, that is not what the actual results of divergent thinking test reveals. Another issue that developmental theory of creativity proposes is the difference in how extrinsic rewards affect creative performance, the prediction is that boys would respond greater to extrinsic reward for creative achievement than girls.

Socio-cultural theories of gender difference in creativity addresses the influence of culture in the achievement of men and women in terms of creativity, Baer (1999) explained the difference in western and non-western cultures, there is evidence that the process of westernization leads to higher creativity test scores for girls and a narrowing or elimination of the gap between girls and boys scores, there is also evidence of what has been termed “over-socializing-effect”. The difference in creativity test scores which favours boys in traditional cultures (such as Arab culture) starts small and grows with increasing age; girls in traditional cultures according to this argument are subjected to over-socialization – a very inhibition kind of socialization that restricts a development of creative thinking skill in women.

Baer (1999) reported Helson and Piirto’s arguments regarding gender difference in creativity. Helson emphasised the role of girls and boys and how boys are more likely to be encouraged to be more independent whereas girls will be raised to be more dependent on others. Piirto argued that girls show less creative achievement after high school and college. Piirto emphasized the role of important decision making saying that boys are more likely to make decision that pull them toward creative endeavours whereas girls are more likely to make decisions that result in less creative endeavours.

Another variable in this study is personality of the creative person. The personality maker of creativity can serve to explain differences in creativity among individuals. The five factor model of personality traits has been used to identify makers of creativity among individuals; these include: extraversion, agreeableness, conscientiousness, emotional stability and openness to experience. Extraversion refers to the propensity to defer to others. Highly agreeable people are cooperative, warm and trusting people, the third factor conscientiousness refers to an individual’s reliability in terms of organization, dependability and persistence. Emotional stability refers to the degree of neuroticism, finally, openness to experience refers to an individual’s interest and degree of interest with novelty and unusualness of ideas.

In a study conducted by Esfahan et-al (2012) to investigate the impact of personality traits on creativity, a total of 160 students were provided a 35 questions survey, the survey results were analysed quantitatively to reveal that personality traits have effect on creativity. Three dimensions namely: extraversion, conscientiousness and emotional stability have effect on creativity as the three dimensions explained 43% of creativity variation (Esfanani, et- al, 2012:3459).

Sternberg (1996) and Lubart (1993) proposed a confluence model of creativity that they called the investment theory of creativity, according to this theory, creative people, like successful stock market investors, willingly “buy low and sell high”, but in the realm of idea not stocks, buying low means pursuing unknown or unfavoured idea that can grow. Such idea, when they are first presented, frequently encounter resistance, the creative person persists in the face of resistance to eventually sell high on the next new or unpopular idea.

The investment theory requires confluence or flowing and coming together of one interrelated factors. They are as follow:

- (1) There are three important intellectual abilities whose confluence is also needed
 - a. Ability to synthesize problems in new ways so as to escape the limits of conventional

- thinking.
- b. Analytic ability to recognize which of our ideas are of worth and which are not.
 - c. Practical contextual ability to assist us in selling the value of our ideas to others.
- (2) Knowledge of the field sufficient to move us forward and not hinder us
 - (3) Thinking style, both global and local showing that preference for the novel is particularly important for creativity.
 - (4) Certain creative personal attributes are important for creative functioning.
 - (5) Motivation that is both intrinsic and task-focused is essential to creativity for people to engage in creative work if they really love what they are doing.
 - (6) An environment that is both supportive and rewarding of creative ideas is needed.

Hypotheses and Research Questions

In this study, three research questions and three hypotheses were tested at 0.05 level of significance.

Research Questions

1. What is the relationship between gender, personality type, emotional intelligence and creativity skills?
2. What is the joint contribution of gender, personality type and emotional intelligence to creativity skills among secondary in-school adolescents in Ibadan?
3. What are the relative contributions of gender, personality types and emotional intelligence to creativity skills among in-school adolescents in Ibadan?

Research Hypotheses

1. There will be no significant difference in creativity between male and female in-school adolescents.
2. There will be no significant difference in creativity skills between participants with high and low emotional intelligence.
3. There will be no significant difference in emotional intelligence between male and female students.

Methodology

Design

Ex-post facto survey research design was adopted in the study.

Sample

The participants in this study were three hundred senior secondary school students, randomly selected from ten secondary schools in Ibadan metropolis on the basis of natural cluster, convenience and balloting, out of this number, 113 (37.67%) were male students while 187 (63.33%) were female students; 92(30.67%) were from SS 2, while 208(69.33%) were from SS 3. The personality types of the participants also vary as 179(58.67%) exhibited Type – A characteristics while 124 (41.33%) exhibited Type – B characteristics.

Instrumentation

Emotional Intelligence Test and Creativity Assessment test by Animasahun (2007) and Type – A and B Behaviour Inventory by Akinboye (1996) were used to collect data from the participants.

Emotional Intelligence test is made up of 35 items which requires the respondents to respond on a five-point rating scale of Strongly Disagree, Disagree, Not Sure, Agree and Strongly Agree. The ratings were respectively graded as follows, 1, 2, 3, 4 and 5. The reliability of the scale was established by calculating the coefficient of alpha whereby Cronbach Alpha = .8680, and reliability coefficient using Guttman Split Half = .8747.

Creativity assessment scale is made up of 33 items which requires the respondents to respond on a five-point rating scale of Strongly Disagree, Disagree, Not Sure, Agree and Strongly Agree. The ratings were also graded as 1, 2, 3, 4 and 5. The reliability of the scale was established by calculating the coefficient of alpha whereby Cronbach alpha = .9193 and reliability coefficient using Guttman Split-half = .8580. Type – A Behaviour Inventory consists of 28 test items which require the respondents to respond on a five point rating scale much Unlike Me, Unlike Me, Not Sure, Like Me and Very Much Like Me. The ratings were respectively graded as follows 1, 2, 3, 4 and 5. The instrument was used to categorise the participants' personality types with the norms of 80. Those participants that scored 80 and above were regarded as type A while the score below 80 were regarded as type B. The reliability of the scale was established by calculating the coefficient of alpha which was 0.76.

Procedure

The questionnaires were personally administered by the reseachers to the participants after permission were sought from the principals of the schools involved in the study.

Data Analysis

Multiple regression analysis, Pearson product moment correlation and student t-test statistics were used as statistical tools.

Results

Research Question: What are the relationship between gender, personality types, emotional intelligence and creativity? The result is presented in Table 1.

Table 1: Mean, Standard Deviation and Intercorrelations among Predictor and Creativity Variables

Variables	Team	SD	1	2	3	4
Creativity Skills	131.53	25.92	1.000			
Emotional Intelligence	97.77	19.40	.971**	1.000		
Personality Type	69.49	13.09	.749**	.727	1.000	
Gender	1.58	0.495	.480**	.508	.455	1.000

Table 1 above shows the mean and standard deviation and correlations among the variables. It was observed that the independent variables correlated with creativity skills. Emotional intelligence ($r = .971, p < .05$), personality types ($r = .749, p < .05$), gender ($r = .480, p < .05$).

Research Question Two: What is the joint contribution of gender, personality types and emotional intelligence to creativity skills among secondary school adolescents in Ibadan? The result is presented in Table 2.

Table 2: Summary of Regression Analysis between the Predictor Variables and Creativity Skills

R	= 0.974
R ²	= 0.948
Adj R ²	= 0.947
Std. Error	= 5.856

ANOVA

Model	Sum of Squares	Df	Mean	F	Sig.	P	Rem
Regression	184683.4	2	61561.167	1795.02	0.000	<.05	Sig.
Residual	10151.100	296	34.296				
Total	194835.0	299					

Table 2 shows that there was joint contribution of gender, personality types and emotional intelligence to creativity skills; $R = 0.974$, $p < .05$. The table further revealed that 95% (Adj $R^2 = 0.947$) variance in creativity skills of adolescent was due to the prediction of the independent variables. The result of ANOVA also attests to causal relationship of the independent variable with creativity skills ($F(2,296) = 1795.02$, $P < 0.005$).

Research Question Three: What are the relative contributions of gender, personality types and emotional intelligence to creativity skills among in-school adolescents in Ibadan. This is presented in Table 3.

Table 3: Relative Contributions of the Independent Variables

Model	B	Std. Error	Beta	t	Sig	P
Emotional Intelligence	1.224	.027	.917	45.38	.000	<.05
Personality Types	.189	.039	.096	4.892	.054	<.05
Gender	1.550	.803	.030	1.931	.054	<.05

Table 3 shows relative contributions of the independent variables to creativity skills of the students. It was observed that the independent variable had relative contribution to creativity skills, Emotional Intelligence ($B = 0.917$, $t = 45.38$, $p < .05$), Personality types ($B = 0.096$, $t = 4.892$, $p < .05$), Gender ($B = 0.030$, $t = 1.931$, $p < .05$).

Hypothesis 1: There will be no significant difference in creativity between male and female in-school adolescents. The result is presented in Table 4.

Table 4

Variables	Sex	N	Mean	Std. Dev.	t	Df	Sig	P
Creativity Skills	Male	127	117.83	24.54	9.435	298	0.000	<.05
	Female	173	142.57	20.71				

It was observed from the table that there was significant difference in the creativity skills of male and female adolescent, $t(298) = 9.435$, $p < .05$. The table further revealed that respondents' female students showed creativity skills (142.57) more than their male counterparts (117.83). The null hypothesis was therefore rejected.

Hypothesis 2: There will be no significant difference in creativity skills between participants with high and low emotional intelligence. The result is presented in Table 5.

Table 5: T-test for independent samples showing significant difference in the creativity skills and participant with high and low Emotional Intelligence

Variables	Sex	N	Mean	Std. Dev.	t	Df	Sig	P
Creativity Skills	Low	111	127.77	22.70	2.265	298	0.000	<.05
	High	189	134.64	26.78				

It was observed from the table that there was significant difference in the creativity skills of participants with high and low emotional intelligence, $t(298) = 2.265$, $p < .05$.

The table further revealed that participants with high emotional intelligence (134.64) showed creativity skills more than their counterparts (127.77) the null hypothesis was therefore rejected.

Hypothesis 3: There will be no significant difference in emotional intelligence between male and female students. The result is presented in Table 5.

Table 6: T-test Summary Table Showing Significant Difference between Gender and Emotional Intelligence

Variables	Sex	N	Mean	Std. Dev.	t	Df	Sig	P
Emotional Intelligence	Male	127	86.83	18.31	10.19	298	0.000	<.05
	Female	173	106.47	15.03				

It was observed from the table above that there was significant difference in the emotional intelligence between male and female students; $t(298) = 10.19$, $p < .05$. The hypothesis was therefore accepted.

Discussion

The three research questions and the null hypotheses set for this study were tested using the results of the questionnaire administered. The results of these tests were calculated in the tables of data analysis above. The first research question stated that what is the relationship between gender, personality types, emotional intelligence and creativity skills, it was observed that the independent variables correlated with creativity skills, emotional intelligence, personality types and gender.

The second research question stated that what is the joint contribution of gender personality types and emotional intelligence to creativity skills among secondary in-school adolescents in Ibadan, it was discovered from the research that there was joint contribution of gender, personality types and emotional intelligence to creativity skills, the table further revealed that variance in the creativity skills of adolescents was due to prediction of the independent variables.

The third research question stated that what are the relative contributions of gender, personality types and emotional intelligence to creativity skills among in-school adolescents in Ibadan. It was discovered that there were relative contribution of the independent variables to creativity skills of the students; it was observed that the independent variables had relative contribution to creativity.

The first hypotheses stated that there will be no significant difference in the creativity skills of male and female adolescents. It was discovered from the research that male and female adolescents differ in the creativity skills. Female adolescents are more creative than their male counterparts. This may be that female adolescent students are typically confident, self-assertive and often involving themselves in non-conforming and imaginative situations.

The second hypothesis stated that there will be no significant relationship between personality types and creativity skills. It was discovered from the research that there is relationship between personality types and creativity skill, this simply means that assertiveness, independence, instructiveness, introversion, self-confident, aggressiveness and flexibility and determinants of creativity skills.

The third hypothesis stated that there is no significant relationship between emotional intelligence and creativity skills of the secondary school adolescents. It was discovered from the research that this hypothesis was rejected, implying that emotional intelligence is a powerful driving force for creativity skills among the adolescents.

Conclusion

The study revealed that emotional intelligence, personality types and sex differences are good predictors of creativity skills among Nigeria secondary school adolescent. It is hoped that the knowledge generated in this study might serve as a guide to development and development of appropriate programmes that could enhance creativity skills of Nigerian adolescents in general.

Recommendations

Students should be encouraged to often engage in activities consistent with a permissive, creative atmosphere so as to increase their problem-solving attitudes.

Efforts should be made by the teachers to discourage negative emotions such as anger, worry, fear and distress in students. These emotional processes naturally shun off the cerebra cortex where creativity, intuition and intelligence are based. Certain traits such as assertiveness, independence, intuitiveness and introversion should be encouraged to develop in students by both parents and teachers so as to enhance their creative abilities.

More importantly, teachers should make every effort to encourage students to establish purpose and intention. Students should be encouraged in the acquisition of domain – specific knowledge.

They should be engaged in stimulating and rewarding curiosity and exploration. They should be encouraged to focus on mastery and self-competition. They should be provided with opportunities for choice and discovery.

Teachers should adopt teaching techniques and strategies that could facilitate creative performance among the students.

Students should be encouraged to develop self-management or met cognitive skills.

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