

LEARNING STYLES AS CORRELATE OF CREATIVITY AMONG HIGH ACHIEVING
SECONDARY SCHOOL STUDENTS IN OYO STATE
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Abstract

Several studies have been carried out on creativity with a few of them focusing on correlates of creativity. The study, therefore, examined the extent to which learning styles correlated and contributed to creativity among high achieving public senior secondary school students in Oyo state, Nigeria. The descriptive survey research design was adopted. Systematic sampling and purposive sampling techniques were used in the selection of the schools and the participants respectively. Every 23rd school on the list of public secondary schools in Oyo state was selected for the study. Forty senior secondary schools from twenty-seven local governments of Oyo state were involved. Six hundred high achieving students (the overall best fifteen from each of the participating schools) were selected for the study. Data were collected using Ibadan Creativity Assessment Scale (ICAS) ($\alpha = 0.79$) and learning styles Assessment Scale (LSAS) ($\alpha = 0.89$). Data were analysed using Pearson product moment correlation and multiple regressions. The result showed that Learning styles had significant positive correlation with creativity ($r = .195$). Learning styles had significant positive contribution to creativity ($t = 4.97$). The study concluded that learning styles when properly annexed positively enhanced creativity. The study concluded and recommended that governments at various levels, teachers, school administrators, counselors, psychologists and parents should pay attention to these factors in order to enhance the creativity of the high achieving students.

Keywords: Learning styles, mental efficacy, confidence, creativity, high achieving students

Introduction

Globally, education is considered to be the most important tool for change and development. As Robinson (2001) opined, developing creative abilities calls for sophisticated forms of teaching and for relevant forms of assessment and accountability. As long as the debate in education

is seen simplistically as a contest between traditional and progressive methods, creativity or rigour, the fundamental objective of developing an education system that will be creativity friendly will be thwarted. These are not simply questions of standards or accountability but of purpose and vision. Education as a multipurpose weapon becomes a powerful tool for creativity development. Teachers who are also principal actors in education industry have significant roles to play for the society to realize its target of breeding creative geniuses.

Fortunately, creativity is susceptible to training. Thus, for maximal development of creativity among the youth, mental-ability, self-esteem and learning styles of children in schools should be focused on by the teacher as a way of fostering creative ingenuity in them. Specialists in the education of the gifted and talented corroborate this position by declaring that high achieving students require effective, appropriate and challenging instructional strategies to facilitate optimum learning (Cochran-Smith & Zeichner, 2005; Lerine, 2006; Walsh-Glaser & Wilcox, 2006 and Smith, 2007).

In order to be truly effective in methods and practice of teaching, free rein must be given to imagination and the creative process must have the support of the schools which are only a reflection of the nation, as well as that of the society. The world of the near future will demand men with a greater degree of versatility than is needed even today; they must be adaptable not only in the vocational sense, but also in their ability to make full use of their creative ingenuity. A belief in the child's right to creative thought and expression transforms the classroom.

In the past, in the present, and in the future, our most enlightened visions of education will be connected by the common thread of imagination,

creative thought and enhanced opportunities for creative expressions. As one looks ahead, it will no doubt be possible to trace society's greatest innovations and achievements back to an abiding respect for creative thought processes during childhood. When one values creative thinking and creative expression in society, it becomes part of our social consciousness and social capital. Society then protects its reserves of creativity by fashioning networks of support that are capable of instilling confidence, promoting resilience and multiplying ways of being intelligent in every person, commencing in childhood and continuing throughout the lifespan. It is therefore incumbent on teachers to find effective strategies to foster creativity development among high achieving students. The main purpose of this study was to determine the relationship between learning styles to the creative ability of high achieving secondary school students in Oyo State.

Hypotheses

H₀1: There is no significant relative contribution of between learning ability and creativity of high achieving secondary school students.

H₀2: There is no relationship between learning ability and creativity of high achieving secondary school students.

Literature Review

Creativity is a very special condition, attitude or state of being that nearly defies definition. Over the years, scholars and researchers, artists and musicians, and philosophers and educators have tried to use words to communicate this amazing phenomenon, even though few agree on a definition. In an investigation of the range of views held on creativity, Piirto (2004) found different definitions and processes in use by developmental, social, cognitive, educational and humanistic psychologists. When we are being creative, we are aware of its special excitement. Creativity can be described as the result of the total integrated functioning of the human brain. Thus, creativity can be viewed from the biological brain/mind base. All of the functions of the human brain/mind system are involved at higher and higher levels when creativity occurs (Clark, 2008).

Learning styles refer to common ways that people learn. Everyone has a mix of learning styles. That is, everyone has a mixture of strengths and preferences. No one has exclusively one single style or preference. One's preferred learning styles guide the way one learns. They also change the way one internally represents experiences, the way one recalls information, and even the words one chooses (Learning styles online.com). Research shows that each learning style uses different parts of the brain. By involving more of the brain during learning, we remember more of what we learn (Advanogy.com 2003 –2007). Researchers using brain-imaging technologies have been able to find out the key areas of the brain responsible for each learning style:

Visual: The occipital lobes at the back of the brain manage the visual sense. Both the occipital and parietal lobes manage spatial orientation.

Aural: The temporal lobes handle aura content. The right temporal lobe is especially important for music.

Verbal: The temporal and frontal lobes, especially two specialized areas called Broca's and Wernicke's areas (in the left hemisphere of these two lobes).

Physical: The cerebellum and the motor cortex (at the back of the frontal lobe) handle much of our physical movement.

Logical: The parietal lobes, especially the left side, drive our logical thinking.

Social: The frontal and temporal lobes handle much of our social activities. The limbic system (not shown apart from the hippocampus) also influences both the social and solitary styles. The limbic system has a lot to do with emotions, mood and aggression.

Solitary: The frontal and parietal lobes, and the limbic system, are also active with this style (Advanogy.com 2003 –2007).

Some people may find that they have a dominant style of learning, with far less use of the other styles. Others may find that they use different styles in different circumstances. There is no right

mix or is one's style fixed. One can develop ability in less dominant styles, as well as further develops styles that you already use well. Although, it is unclear whether the ability to create can be enhanced, there is consensus that the disposition to create can be suppressed. Creativity and discipline are not antithetical creative individuals practice much and work hard but extensive reliance on overly structured activities can thwart the impulse to create, with negative effects on students' well-being. Students with high ability will perform better than others in activities that require design, imagination, or invention, but participation in such activities encourages the disposition to create in students at any level of ability. A learning style is the method of processing information peculiar to an individual that is presumed to allow that individual to learn best.

The idea of individualized learning styles originated in the 1970s. Since then, it has been proposed that teachers should assess the learning style of their students and adapt their classroom methods to best fit each student's learning styles (Coffield, Moseley, Hall and Ecclestone, 2004). Researches on creativity (particularly on why some people are more creative than others) have focused on a variety of aspects (Salaudeen, 2014). The dominant factors are usually identified as "the four Ps"—process, product, person and place (Kozbet, Heghetto, & Runco, 2010). A focus on process is reflected in cognitive approaches that attempt to explain thought mechanisms and techniques for creative thinking. A focus on creative product usually appears in attempts to measure creativity (psychometrics, see below) and in creative ideas framed as successful memes. The psychometric approach to creativity reveals that it also involves the ability to produce more (Sternberg, 2009). A focus on the nature of the creative person considers more general intellectual habits, such as openness, levels of ideation, autonomy, expertise, exploratory behaviour and so on. A focus on place considers the circumstances in which creativity flourishes, such as degrees of autonomy, access to sources and the nature of gate keepers. Creative life styles are characterized by nonconforming attitudes and behaviours as well as flexibility (Sternberg, 2006).

Theoretical Review

Creativity, which is a basic tool for innovation in any society, appears to have limited space in the curricula of schools in Nigeria. School activities are generally oriented towards conformity to standards, this is inimical to creativity. There is need for schools to design curricula and learning styles that would promote growth of personality. This could be by fostering the creative process in their methodology with the ultimate goal of teaching for creativity. Learning styles is one of the most widely used terms in relation to student learning (Fry, Ketteridge & Marshall, 2009). There are several categorizations of 'styles'; research-based evidence of their existence is sparse (Coffield, Mosseley, Hall, & Ecclestone, 2004); the term is sometimes misused to mean approaches to learning, or the two are conflated. (Fry et al., 2009). Learning styles also referred to as cognitive styles are the different ways in which people process information in the course of learning. They include individual preferences in both perceptual organization and conceptual categorization that is perceiving, thinking, remembering and solving problems (Ausubel in Salaudeen, 2014).

In addition, Ausubel believed that learning styles are a reflection of individual differences in personality and motivation. Ogundokun (2009) asserted that young children also develop holist analytical style. Ogundokun (2009) conducted a study about first language learning among very young children. According to him, children employ two basically different strategies to learn their first language. One is the analytic style, which proceeds from the parts to the whole. The other is the Gestalt style, which proceeds from the whole to the parts. In addition, Jing Yang (2014) speculated that these two different language learning strategies may have neurological bases. However, even though learners may have preferences, it may be that they should be encouraged to use a range of learning styles, in which cases, those responsible for organizing learning should create opportunities for learning that are sensitive to different styles for creativity, and do not simply reflect how they or their students like to learn

Methodology

In order to address the above hypothesis, the following methodology was adopted: This research design is ex-post facto design. In such a design, the researcher did not control the independent variables because they have already occurred. The population of this study comprised all high achieving class one students of Senior Secondary Schools (SSS1) in Oyo State, Nigeria. Purposive sampling technique was adopted for this study and it consisted of six hundred (600) high academic ability senior secondary school students from public schools in Oyo State. The total sample size of the schools that participated in the study was 40 secondary schools. The total number of all the public secondary schools in Oyo State was collected. The list of all these schools was also collected. As at the time of carrying out this study, there were 987 secondary schools in Oyo state. The study thereafter used systematic sampling technique to identify the schools that participated in the study, e.g. by picking every 23rd school on the list of public secondary schools in Oyo state. Senior secondary school class one students of each school involved participated in the study. The students' academic records were collected. Their results from Junior Secondary School one to three (JSS1-3) were consulted and the mean scores of each of the participants were calculated. Only those with mean scores of sixty (60) and above were selected to participate in the study. Thereafter, fifteen (15) best students in senior secondary school class one of each of the schools involved were selected as participants for the Study. Learning Style

Assessment Scale (LSAS) and Ibadan Creativity Assessment Scale (ICAS) were used to determine the learning style considered best to the individual respondents. That is the learning style through which an individual learns best.

Procedure for the Administration of the Instruments

The researcher visited the ministry of education to collect the list of the total number of senior secondary schools in the state. Thereafter, the researcher visited each of the schools with a letter from the Head of Department introducing the researcher to the principals of the affected schools and also seeking the permission and cooperation of the school authorities to carry out the research in their schools. All the schools visited granted the permission and also co-operated very well. The research was conducted with the support of three research assistants who were also special educators particularly on the administration of the various instruments used for the study. The researcher administered each of the research instruments on the individual participants in each of the schools involved.

Method of Data Analysis

The data collected were analyzed using inferential statistics of multiple regressions. In order to conduct the multiple regressions, some other variables were introduced into the data set, so as to avoid spurious results. Furthermore, the hypotheses were tested at 0.05 level of significance. Pearson Product Moment Correlation was employed to determine the relationship between the independent and dependent variables. Correlation matrix was

Results Table 1: Multiple regressions showing the relative contribution of Learning Style to creativity of high achieving secondary school students

Model	Unstandardized Coefficient		Standardized Coefficient	T	Sig.
		Std. Error			
Constant		83.766		4.944	.000
Mental Efficacy	-1.172	.677	-.071	-1.731	.084
Confidence	-.629	.740	-.036	-.851	.395
Learning Style	1.400	.281	.211	4.976*	.000

* Sig. at .05 level

The table above (Table 1) showed the relative contribution of each of the independent variables

(mental efficacy, confidence & learning styles) to creativity of high achieving secondary school

students. Mental efficacy ($\bar{x} = -.071$, $P>.05$), confidence ($\bar{x} = -.036$, $P>.05$) and learning styles ($\bar{x} = .211$, $P<.05$).

This result thus showed that while learning styles was significant to creativity, mental efficacy and confidence were not. This means that learning styles make significant relative contribution to creativity

Table 2: Correlation matrix showing the relationship between learning styles and creativity

	Mean	Std. Dev.	Creativity	Mental Efficacy	Confidence	Learning Styles
Creativity	324.7371	77.9872	1		1	
Mental Efficacy	121-2388	4.7039	-.052	1		.093*
Confidence	26.8505	4.4420	.018	.05		.261**
Learning Styles	49.7045	11.7279	.195**	.015		1

**** Sig. at .01 level; * Sig. at .05 level**

Results in the table above (Table 2) showed that amongst other variables, there was a significant correlation between creativity and learning-styles.

Discussion of Findings

The result showed that learning styles significantly contribute to the creative ability of the participants. This result corroborated the finding of Diaz and Cartnal (1999) that students in the distance learning class who possessed a more independent and conceptual style, had the highest average scores in all the student achievement areas. People with the lowest scores in student achievement in the distance learning course had a more social and conceptual styles. Students with both social and conceptual learning style performed much better in the on-campus class. The outcome of this study suggested that successful distance education students favoured an independent learning environment. Successful on-campus students showed a preference for working with others. This result underscores the significance of learning styles in student achievement.

Result also showed that learning styles have significant relationship with creativity of high achieving students. This result also lend credence to the studies Eishani et. al. (2014) on correlation between creativity and the significance of preferred learning style. The implication of this is that when creativity is taught according to a learner's preference, instinct for creativity can be motivated. This supported the study of Torrance

(1982) that found relationships between the Human Information Processing (HIP) measure, developed in 1984, to assess an individual's problem-solving style based on left brain and right brain processing. The measure categorizes individuals into left brain dominant, right brain dominant, interpreted (both left and right brain processing), or mixed (neither left nor right brain dominant). There were significant positive correlations between the HIP measure and the left hemisphere scale, with correlation coefficients of 0.49 and 0.67. This suggests that individuals who exhibited a left brain dominant problem-solving style, as measured by the HIP, tended to have higher scores on the left hemisphere scale. The findings indicated that sequential ordering was associated with the left hemisphere creative style and that random ordering was associated with the right hemisphere creative style. Other scholars in agricultural education have also concluded that learning styles affect student learning (Friedel & Rudd, 2006).

Conclusion

Knowledge is not an automatic endowment; it is gained through learning experiences. Creativity is an important product of knowledge. Its importance is underscored when it is described as a basic tool for progress in any society. Thus; it is universally believed that any serious nation should place high priority on high creative development of her citizenry. The National policy on education of the Federal government of Nigeria provides for high ability students to develop maximally so that our nation can develop

both socioeconomically, politically and technologically. This cannot be achieved if the citizenry are bereft of creativity. The study thus concluded that suited learning styles are important to creative development of the high achieving secondary school students

Recommendations

1. Learning styles have been found to be of significance among high achieving students. This justifies the need to place more attention on the learning styles of the individual students. When learning is presented according to the individuals learning preference, high achievement is recorded or realized.
2. Teachers should also endeavour to embark on regular assessment of their students. This will enable them identify their areas of needs.
3. School heads including the principal, the vice principal and all other heads of departments should collaborate and cooperate with the teachers of the high achieving students in implementing the guiding principles that can facilitate creative development.

References

- Clark, B. (2008). *Growing up gifted: Developing the potential of children at home and school* (7th Ed.). Upper Saddle River, NJ. Prentice-Hall.
- Cochram, S. D. and Zaichner, (2005). *Teaching every student in the digital age: Universal design for learning*. Alexandria, VA: Association for supervision and curriculum development.
- Coffield, F.; Moseley, D.; Hall, E.; Ecclestone, K. (2004). *Learning styles and pedagogy in Post 16 Learning. A Systematic and Critical Review*, London. Learning and Skills Research Centre.
- Diaz, D. P. and Carnal, R. B. (1999). Students' learning styles in two classes: Online distance learning and equivalent on-campus. *College Teaching* 47(4), 130-135.
- Eishani, Khalil & Saa'd, Ebrahim & Nami, Yaghoob. (2014). The Relationship Between Learning Styles And Creativity. *Procedia - Social and Behavioral Sciences*. 114. 52-55. 10.1016/j.sbspro.2013.12.655.
- Friedel, C.R. and Rudd, R.D. (2006). Creative thinking and learning styles. *Journal of Agricultural Education*, 47(4) 102 –111.
- Jing Yang, Kathleen Marie Gates & Peter Molenaar Ping Li (2014) Neural changes underlying successful second language word learning: An fMRI study, *Journal of Neurolinguistics*, Volume 33, 2015, Pages 29 - 49 , I S S N 0 9 1 1 - 6 0 4 4 , <https://doi.org/10.1016/j.jneuroling.2014.09.004>.
- Ogundokun, M. O. (2009). *Emotional intelligence, cognitive styles, motivation and academic –self-efficacy as determinants of academic performance among senior secondary school students in South Western Nigerian*. Ph.D. Thesis, department of guidance and counseling, University of Ibadan, Ibadan, Nigeria.
- Piirto, J. (2004). *Understanding creativity*. Scottsdale, AZ: Great Potential Press.
- Robinson, S.M. (2001). *Meeting the needs of students who are gifted and have learning disabilities*.
- Salaudeen (2014): *Mental Ability, Self-Esteem and Learning Styles as Correlates of Creativity among High Achieving Senior Secondary School Students in Oyo State, Nigeria*
- Sternberg, R.J. (2006). "The nature of creativity" (<http://people.uncw.edu/caropresoe/GiftedFoundations/SocialEmotional/Creativity-articles/Sternberg.Nature-of-creativity.pdf>). *Creativity Research Journal* 18(1):87-98.
- Sternberg, R. J (2009). In Jaime A. Perkins, Dan Money Penny, Wilson Co Cognitive Psychology. C E N G A G E Learningp.468. ISBN978-0-495-50629-4
- Torrance, E.P. (1982). Hemisphericity and creativity. *Journal of Research and Development in Education*, 15(3)