



Tracing the Trajectory in Acquisition of Graphic Skill to Students Through Creative Sorting Game

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Abstract: Educators have been striving to bring to reality learning through playing and fun. It is real obvious that the use of game has brought positive changes to instruction. Therefore, this study investigates the acquisition of graphic skill through creative sorting game among the junior secondary schools. The study employed experimental of pre and post test from quasi, samplings consisted of 69 students of which are 34 male and 35 female students, based on simple random sampling. Two hypotheses were raised and tested with ANOVA and t-test statistical analysis. Findings revealed that creative sorting game was positive in the context of teaching creative arts and it was recommended that the use of creative sorting game should be encouraged in learning among the junior secondary schools in Nigeria.

Keywords: creative sorting game, graphical skills, junior high school, quasi experimental design.

Abstrak: Pendidik telah berusaha mewujudkan pembelajaran melalui bermain dan bersenang-senang. Sangat jelas bahwa penggunaan game telah membawa perubahan positif pada instruksi. Oleh karena itu, penelitian ini menyelidiki akuisisi keterampilan grafis melalui permainan sortir kreatif di antara sekolah menengah pertama. Penelitian ini menggunakan eksperimen pre dan post test dari quasi, sampel terdiri dari 69 siswa yang terdiri dari 34 siswa laki-laki dan 35 siswa perempuan, berdasarkan simple random sampling. Dua hipotesis diajukan dan diuji dengan ANOVA dan analisis statistik t-test. Temuan mengungkapkan bahwa permainan sortir kreatif adalah positif dalam konteks mengajar seni kreatif dan direkomendasikan bahwa penggunaan permainan sortir kreatif harus didorong dalam pembelajaran di antara sekolah menengah pertama di Nigeria.

Kata kunci: permainan sortir kreatif, keterampilan grafis, sekolah menengah pertama, desain eksperimen semu.

▪ INTRODUCTION

A creative arts curriculum is of both handy and premises (Odewumi & Yusuf, 2018). The curriculum is more of fun on the Junior Secondary Schools in Nigeria. Creative arts merge the creative part of arts like Dance, Music, Fine Art, Drama, and Media Arts, alongside the fictional environment of the learners. Creative arts promote more of practical acquisition of skills along with the cultural heritage of both learners and instructors (Odewumi et al., 2015). Similarly, it arouses and inventive talent that supports individual works, all these are put together along side with other cultures (Usman et al., 2014).

New creative pedagogical of instruction belong to the group of digital technology. Game is one of the new technological tools and method of teaching that motivates the learners in their active construction of knowledge but it must be in line with curriculum so as to simplify and improve teaching and learning. According to Weller and Anderson (2013) instructional delivery has transformed to be positive via the use of creative technologies. In creative arts curriculum, applications of technology of instruction are employed to facilitate teaching. The study of Ikponmwosa (2013) established that the instructional strategies with adequate creative technology has assist the learners to progress forward on intentions purposively to take up career in creative arts. Similarly, Kuratko & Hodgetts (2007) stressed that idea of personality which included ability and willingness, has fashion successful collaboration team on acquisition of creative skills through creative tools which can be acquire through game.

According to Nasab, Esmaeili & Sarem (2015) game are learning tools of diverse methods for instructional delivery and imperative to facilitating and fulfilling learning objectives. Moreover, Bunch et al. (2014) explained that instructors should see game as a tool that does not stand in isolation but as a substitute for and to replace normal teaching. Houghton et al. (2013) explained game as a category of having a fun where the participants agreed on a defined rules. In the same way, Michel (2016) described clarified games that integrate curriculum content and other enlightening materials together are referred to called educational games. Similarly Boyle (2011) submitted that games play an important role in building the learners self-confidence despite the fact that some games are considered to be dull and boring.

Generally, Game serves as a supportive measure and instrument to complement teaching methodologies. The study of Zirawaga, Olusanya and Maduku (2017) revealed that Game serves as a support instrument to go together teaching and learning in order to improve the learning experience. Moreover, Salman (2017) submitted that games are significantly dependent on calculation. Similarly, Okunade et al. (2017) submitted that traditional Ayo games is more of precise, craftily played with high intelligence mostly of geometrical mode than arithmetical scoring and also widen the rationalization and creative thinking.

Researches established the usefulness of games among gender, it is clear that the studies which examine games and gender are inconclusive. Therefore, little empirical studies that examined the different effects of games on learners' performance in diverse way are looked into. Although, some studies that have interest in the differential effects of computer-based games between gender groups are scanty. It also revealed that gender differences in preferences of digital games are favoured male. The frequently application of game to achieve stated cognitive learning and discoveries of some fact and ideas is more preferred by male learners (Kinzie & Joseph, 2008), whereas, few studies have shown no significant differences on the effect of games on gender bases

(Vogel et al., 2006). Studies have stressed game as having significant effect on gender performances, the study of Achor and Imoko (2010) established that a game has a significant effect on male and female pupils. Similarly, Bassey, Joshua and Asim (2008) recognised that there are distinct significant differences on the achievement in favour of the male learners. In the same vein, Adeleke (2008) uncovered that both male and female have the potential of performing equally without any difference. In essence, game provides avenue for collaboration and renders participant and players equal.

Obviously, the appropriate theory, study methodology has been argued and result to implicitly of social science, based on techniques and idea of anthropologist (Crane and Angrosino, 1974), Social Activist Theory trusted learning to be hands of experience through constant and numerous exercises. Although, learning as social experience (Conner, 2011), predominantly centred around learner's close to a meticulous learning environs. Roblyer and Doering (2013) stressed that the knowledge equated with play in other for the students to enjoy having fun, because game creates an optimal state through which learning may be possible in an environment made of fun. Also, Petkov & Rogers (2011) expressed that such occurrence is accredited on how the learner is stimulated, the author concluded that students motivated well always perform successful in different task exposed to in school. Game serves as helping hand and reinforce learning concept, using games for learning help to modify subject matters in a reasoning way (Van Ments, 1999).

The continuous utilisation of game among the pupils and instructors for fun and learning is progressively more widespread globally (Gozcu & Caganaga, 2016). Several studies have been done on game in the context of knowledge acquisition. For instance, McLaren, Adams, Mayer and Forlizzi (2017) studied effectiveness of a game in the context of promoting learning of Mathematics, this study revealed that a mathematics educational invented game can offer superior learning, collaboration and engaging learners more in solving mathematical problem. Also, Zirawaga, Olusanya & Maduku (2017) submitted that implement a concept of gaming into instruction can elicit learning and problem solving such as drilling and practicing, simulating etc. Like Ayo-game in Yoruba land which has the meaning 'game' and played on a hollow wooden board with two rows of six averagely deep holes carved. It is also peculiar with other African countries like in East African the versions of their Bao and Akan game among the Oware in republic of Ghana. It is more of counting, sorting for multiplication. Likewise, sorting in straddle game and card game playing.

Nevertheless, the aforementioned traits are peculiar to instructional game. The extent to which learning of graphic through game is valuable in instruction in the context of creative arts in Nigeria Junior Secondary Schools is still unknown. Therefore it is on this that the present study intend to fill the existing gaps which has been created by previous researches especially on game and creative arts by tracing the trajectory in acquisition of graphic skill to creative sorting game players among the junior secondary school in Nigeria educational context.

METHOD

This study adopted a non equivalent-control group (pre-test and post-test) quasi experimental design. The area of this study was Ilorin, Nigeria. The population for this research consisted of all Junior Secondary School two (JSS 2) students of 2016/2017 in Ilorin Metropolises, Nigeria. Purposive sampling was used to select three government

owned mixed schools consisted of 69 students of which are 34 male and 35 female students, based on simple random sampling.

These instruments employed for the study and to collect data were Creative Achievement Test Making Guide (CATMG), Creative Achievement Test (CAT), Creative Sorting Game (CSG), Creative Lesson Plan (CLP). The Creative Sorting Game (CSG) is made up of cone-shape cardboard of different colours, placed on a big table (Appendix 001). Creative Achievement Test (CAT), was a researcher designed structured questionnaire that consisted of 25 items based on JSS 2 creative arts curriculum. This covered the Knowledge Comprehension, Analysis, Application, Synthesis and Evaluation all form cognitive domain from the table of specification. The 25 items were multiple-choice objective questions with five options (A, B, C, D and E). CAT was scored and placed all over 100% which indicated that each corrected answered scores 4 marks. The questionnaire was of two sections. Section A was used to obtained general information about learners. The second part section B was on the test based on the study. The Creative Achievement Test Making Guide (CATMG) consisted of solution to the 25 Creative Achievement Test objective questions. Creative Lesson Plan (CLP). The CLP was written comprehensively according the curriculum of study, two periods per week, given to the head of department for approval before the commencement of the teaching for both conventional and experimental group.

The instruments were validated by experts in these following fields; test, measurement and evaluation, fine and applied arts and educational technologist of a reputable university, necessary corrections were made based on the constructive criticism, valuator's comments and suggestions. The validated CAT was trial tested. 30 JS II were utilised for the pilot study. The trial testing, psychometric indices of the study instruments were computed, Cronbach Alpha statistical was used to confirm the reliability coefficient of 0.7.

Experimental Procedure

The rules and regulation guiding the experiments were specified in the operational manual provided for the learners and instructors. The learners were exposed to Creative Sorting Game instruction via the instructors, requesting the learners to form different colours; primary, secondary tertiary creative and creative terminologies through the creative Sorting Game (appendix 002). The cone-shape cardboard of different colours were placed on the big table before the learners requesting them to look at the topics (content of study) on the white-envelop one by one and produce the solution through creative sorting (appendix 003). While the learners put down the summary with the help of the instructors. In essence, the creative cone-shape is manipulated to form the aforementioned task in form of fun (educational game). The real treatment which lasted for six, four weeks of intensive treatment, the first week for introduction and familiarisation to the rules of the game while the six weeks for revision and evaluation. The study of Ash (2011) suggested that instructor can facilitate what the learners have learnt by transferring the skills through evaluation of students' game content before giving the post-game test.

RESULT AND DISCUSSION

First, this research hypothesizes that no significant difference in the mean achievement score of learners in the three government schools taught with creative

sorting game. The first hypothesis was tested with ANOVA statistic the three schools mean taught with creative sorting game. The result is stated in Table 1.

Table 1. The ANNOVA statistic of the creative sorting game of the three schools.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	20.551 ^a	2	10.275	1.662	.198
Intercept	29885.449	1	29885.449	4834.411	.000
Factors	20.551	2	10.275	1.662	.198
Error	408.000	66	6.182		
Total	30314.000	69			
Corrected Total	428.551	68			

Table 1 shows the ANNOVA comparison of three school mean scores taught with creative sorting game. The t-value of 1.60 was not significant at the 198 alpha value. This reveals that there was no significant difference between the three junior secondary schools taught with creative sorting game. Therefore, hypothesis one is accepted.

Second, there is no significant difference in the mean achievement score of the boys and girls taught with creative sorting game. This hypothesis was tested with the t-test statistic. The boys and girls mean scores in respect of creative sorting game were compared. The result is as follows:

Table 2. The t-test of male and female means taught with creative sorting game

Variables	N	Mean	SD	df	t-value	p-value
Male	34	20.79	2.54	67	.057	.924
Female	35	20.82	2,51			

Table 2 shows the t-test of the mean scores of both boy and girl of the junior secondary school students taught with sorting game. The mean of male was 20.79 with 2.54 as standard deviation. And the mean for female was 20.82 with standard deviation 2.51. The t-value of .058 was not significant, because the p-value was .924 alpha value ($t = .057$, $df = 67$, $p > .924$). This indicates shows no significant difference both male and female junior secondary schools students taught with creative sorting. Hence, hypothesis two was not rejected.

The findings clearly revealed no significant difference among the three junior secondary school students taught with creative sorting game. Similarly, there was no significant difference between both male and female students taught with creative sorting game. Therefore, the finding support the finding of Onuorah (2017) whose finding revealed that the traditional Dambe, Langa, Abula, Ayo and Kwokuwa game had been significant relevant and restructured in international game and sport competition. Also, the finding is in line with the study of Prince (2014) whose study established the effect of game based on mathematics instruction on learners achievements in algebra, the study revealed that there was no significant in interaction effect on teaching method and gender on learners achievement in Algebra. Similarly, the findings agreed with the study of Clark, Tanner-Smith & Killingsworth (2015) whose findings established that educational games have significantly positive results in mathematics.

The finding conform to the findings of Lenhart et al. (2008) whose findings revealed that Game engage the learners in a meaningful learning. Also, the findings agreed with the report of Sitzmann (2011) who stated that game brings positive result in learning. In the same line, the findings was in agreement with the findings of Oblinger (2006) whose findings confirmed the developing significant values and new knowledge through game. In the same vein, the study concurs with McDaniel, Fadler & Pashler (2013) who stated that game benefits relatively to learning and bring more positive to learning outcomes. Also, the findings of the study further agreed with the finding Clark, Tanner-Smith & Killingsworth (2015) who study revealed the significant better in learning of the learners. In essence, the finding is in line with the study of Spiegel et al. (2008) whose results of their findings indicated the suitability and significantly positive of game as alternative approach to learning of cell and molecular to secondary students.

Furthermore, the findings contracted the findings of Sitzmann (2011) whose findings revealed that highly influenced entertainment game does not promote active learning but fun. Moreover, the findings of Mayer (2014) who findings claimed a strong conviction that the potential in respect of educational games are relatively weak on learners' academics.

CONCLUSION

Despite all fact gathered on the creative sorting game, it is more clearer to note that the game is imperative and also an assert to creative skill acquisition in the context of junior secondary schools in Nigeria. Moreover, sorting game can be equate to the instructional television of Odewumi, Falade & Adeniran (2018), computer technology of Abass (2012) and Charcoal Drawing Packages of Odewumi et al. (2018) that proof supremacy of learning packages in the context of teaching and learning, which develop the psychomotor, affective and cognitive domains in creative arts students. Some recommendations were put forwarded based on this research i.e creative teacher should be encourage to produce and continue use of Creative Sorting Game, the government should encourage Educational Technologists to develop Creative Sorting Game for the use of both instructors and learners. The last, seminars, in-service training and the like should be put forward to teachers on the production and use of Creative Sorting Game.

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