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Blended Learning and Academic Performance of Fine Arts Senior Secondary II Students in Painting

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Abstract

This study is investigating the Blended Learning Pastel Package (BLPP) and the academic performance of senior secondary fine arts students in painting in the Uyo Local Government Area. Three research questions and three hypotheses were used to guide this study. This study employed a quasi-experimental pretest-posttest non-randomised control group design. Using a criteria sampling technique, a sample of 95 senior secondary two (SSII) students was selected from a total population of 132 across 25 secondary schools offering fine arts in the study area. In each of the 12 selected schools, students were randomly assigned to experimental and control groups. The researcher developed an instrument, the Fine Arts Student Performance Test (BLSPT), which was validated for face and content validity by three experts from the University of Uyo. The reliability of the BLSPT was confirmed with a Cronbach's alpha coefficient of 0.889. Data were analysed using descriptive statistics, including mean and standard deviation, alongside Analysis of Covariance (ANCOVA). The results indicated that blended learning enhances the teaching and learning of fine arts more effectively than the expository teaching method. Furthermore, students taught

with the BLSPT showed significant improvements in creative abilities related to the use of form and tonal value when taught using the blended learning computer package, colour combination in painting, and the combined effects of creative abilities, form and tonal value, and colour combination. The findings showed that students' creative abilities exposed to BLSPT significantly improved compared to when taught using the expository teaching method. Among the recommendations made is that blended learning should be encouraged in schools by co-opting Information and Communication Technology (ICT) systems in public secondary school education, even with a face-to-face system of learning in place. The Ministry of Education should prioritise providing and maintaining fully functional computer laboratories to support computer-based instruction in fine arts education.

Keywords: Blended Learning, Pastel Package, Academic Performance

Introduction

This study investigates blended learning and the academic performance of Fine Arts Senior Secondary II students in painting in the Uyo Local Government Area. Painting is an art form that emerges from the artist's imagination or through the observation of visual images, using colour as a medium to communicate ideas to viewers. As a visual art, it involves applying pigments, colours, or other media to surfaces such as walls, canvas, wood, paper, or fabric. Painting serves as a creative means of expressing ideas, events, scenes, and emotions, which viewers interpret based on their individual perspectives and understanding (AI Overview – Wikipedia, 2025).

In this study, the computer-based component focuses on the use of electronic slides to teach and learn colour concepts in painting, while students engage in practical activities such as colour mixing and the application of pigments in their artwork. The blended learning and academic performance component in painting is referred to as the Blended Learning Pastel Package (BLPP). BLPP is an instructional model developed by the researcher to determine how the integration of computer-based tools can enhance the academic performance of senior secondary school fine arts students in painting.

Fine art education in Nigeria is experiencing a significant decline and appears to be nearing extinction. As an artist and educational technologist, the researcher recognises that creativity, a unique human capability, is not common among youths in contemporary communities. In today's technology-driven world, where machines increasingly replace human effort, nurturing creativity has become even more essential. This raises an important question: *can blended learning, through the use of computer-based tools and applications, help rekindle interest and motivation among fine arts students?*

Blended learning is a combination of face-to-face classroom instruction and technology-based learning resources. It integrates multiple learning modalities, provides flexibility, encourages active participation, and enhances student interaction with learning materials (AI Overview – Wikipedia, 2025). In this study, blended learning includes collaborative learning, the use of electronic slides, hands-on activities, student-teacher and student-student interactions, and studio practice for art production. These activities emphasise colour mixtures and resulting hues. Blended learning is employed to capture students' attention, improve participation and engagement, and strengthen teacher-learner and learner-learner interactions. According to Udi (2023), electronic media enrich the teaching and learning process by providing teachers with engaging instructional resources that stimulate learners' interest and motivation.

Blended learning combines the strengths of both technology-based and traditional instructional approaches. Digital tools allow students the flexibility to explore learning options independently while still benefiting from direct, in-person interactions with teachers and peers. This dynamic strategy supports individualised study and integrates classroom learning with digital instructional materials. Blended learning relies on digital learning objects, active learning strategies, structured guidance from the teacher, and appropriate assessment procedures. It is built on three major components: face-to-face activities facilitated by an educator, digital learning objects, and structured independent study guided by exploratory tasks (Wikipedia, 2024). In this method, the educator functions as a facilitator, guiding learners through activities tailored to strengthen their understanding and skills.

In this study, blended learning merges face-to-face studio practice with instructional guidance delivered either directly by the teacher or through digital media, such as PowerPoint presentations selected by the researcher. The purpose of the study is to determine the effect of the Blended Learning Pastel Package (BLPP) on the academic

performance of fine arts students—specifically in creativity, use of forms, tonal value, and colour combination—and to examine the combined effect of BLPP compared with traditional teaching methods.

Nigeria faces significant challenges in adopting technology to advance education, making it difficult to align with global developments in this area. The researcher believes that technology integration in Nigerian educational institutions is increasingly influenced by practices abroad, as more secondary school graduates pursue higher education in countries where technology-enhanced learning is firmly established. Nigeria must therefore channel its efforts toward building a high-quality education system or risk developmental setbacks. Factors such as teachers' beliefs and experiences, the availability and accessibility of learning resources, teachers' competence in utilising these resources, students' motivation and willingness to learn, and the overall learning environment all play crucial roles in determining appropriate instructional strategies. Ekpo (2010) describes these combined factors as constituting "progressive teaching strategies".

Statement of the Problem:

Several factors influence the selection of instructional methods in fine arts education. These include teachers' attitudes and professional experiences, the availability and accessibility of learning materials, teachers' competence in utilising these materials, students' motivation and readiness to learn, and the overall classroom environment. Ekpo (2010) collectively refers to these influences as *progressive teaching strategies*. According to Etim (2006), the effectiveness of a teacher at any level of education depends largely on the quality of inputs, processes, and resources available within the educational system.

The academic performance of Fine Arts students in WASSCE and NECO examinations (NECO, 2014) as presented in Tables 1 and 2 which indicates a lack of competencies among Fine Arts teachers, as well as inadequate technological and pedagogical strategies in the teaching-learning process. Additionally, the persistent poor performance raises concerns about whether inadequate facilities and poor infrastructure in fine arts studios may be contributing to students' declining interest and diminishing confidence in choosing fine arts as a subject and potential career path

Although many studies have explored various painting media such as oil and mixed media, limited research exists on the use of pastel. This knowledge gap makes the present study essential, particularly in addressing misconceptions that pastel is a difficult medium to work with (Coombs, 2006). The study therefore investigates the impact of computer-based instruction (specifically the Blended Learning Pastel Package (BLPP)) on students' creative abilities in the use of forms, tonal values, and colour combinations. It also examines the joint effect of BLPP on students' overall academic performance compared to traditional instructional approaches.

Furthermore, preliminary observations by the researcher during visits to selected educational institutions and secondary schools in Akwa Ibom State revealed a low level of student enrolment in fine arts at the senior secondary school level. Tables 1 and 2 present data highlighting the number of students offering fine arts in various categories during the 2014 academic year.

Table 1: Distribution of Fine Art Students Registered for NECO/SSCE 2014

S/N	Name of School	Total number of Students in SS III	Number of Student for Fine Art NECO/SSCE 2013
1.	Nigerian Christian Secondary School, Abak	58	3
2.	Community Secondary Commercial School, Eket	95	3
3.	Community Secondary School – Mbioto II	176	1
4.	Etinan Commercial Comprehensive Secondary School, Etinan	34	2
5.	Ibiaku Clan Community Secondary School, Ikot Ebak	83	5
6.	Methodist Secondary School Ete, IkotAbasi	66	5
7.	Federal Government College Ikot Ekpene	206	15
8.	Community Secondary School Itucho	71	1
9.	Brotherhood Secondary School, Ikot Ide Akpakpan	71	2
10.	CSC Aka Offot, Uyo	271	10
11.	Uyo High School, Uyo	131	1
12.	Comelia Connelly College, Uyo	168	12
13.	Federal Government Girl's College, Ikot Obio Itong	150	10
14.	Modern Comprehensive Secondary School, Ikot Ekpene	81	1
15.	Jimbo Secondary Commercial School, Itam Uyo	34	2

16.	Odaduma Secondary Commercial School, Itu	184	5
17.	Modern Training Institute, Aka Road, Uyo	46	2
18.	Nigerian Christian Institute, Uyo	59	3
19.	Ernest Secondary Commercial School, Uyo	90	3
20.	College of Science Afaha Oku, Uyo	51	3
21.	Fulga International College, Mbiabam Ibiono	136	15
22.	Bright Star Model Secondary School, Uyo	99	5
23.	Edem Secondary Commercial School, Ikot Ekpene	100	3
24.	Airforce Comprehensive School, Ibesikpo	67	2
25.	Topfaith International Secondary School, Mkpatak Ikot Ekpene	164	18
26.	Fortune High School, Uyo	30	7
27.	Bright Future College, Uyo	48	3
28.	Baudisons Secondary Commercial School, Ikot Mbon Ikono, Uyo	63	3
29.	St Brain's Model College, Uyo	65	1
30.	Desu Comprehensive Secondary School, Oron	71	1
31.	Ritman College, IkotEkpene	46	2
32.	Federal Science Technical College, Uyo	134	8
33.	Ave Maria College, Uyo	22	1
34.	Graceland High School, Uyo	18	6
35.	Goodnews Community High School, Abak	32	1
36.	Redemption Academy	27	1
37.	Rayfield International Secondary School	88	5
38.	Providence Secondary School, Eket	19	3
39.	Infant Jesus Model Secondary School, Oron	90	4
40.	King Solomon Secondary School, Uyo	55	5
41.	Christian Secondary Commercial School, Uyo	61	20
42.	Community Comprehensive Sec. School, Four Town	70	7
43.	Community Secondary School, Uffot Ukwa	92	3
44.	Secondary School, Mbak Etoi	214	13
45.	Heritage College, Uyo	29	6
46.	Efficient Secondary Commercial School, Uyo	70	2
47.	Secondary School, Etoi	50	2
	Total	**4085**	**236**

Method

This study used the quasi-experimental pretest-posttest non-randomised control group design. The study was based on the theory of behavioural learning (Skinner, 1968). Four research questions and four hypotheses were used to guide the study. The study is using students in their intact classes, making it suitable to establish the effect of treatment (use of the Blended Learning Pastel Package (BLPP)) on academic performance.

The area of study is the Uyo Local Government Area of Akwa Ibom State. The population of the study comprised 132 students in senior secondary two (SSII) classes. 12 secondary schools were selected for the study using the criteria sampling technique, with the entire population of 95 fine art students in senior secondary schools in the Uyo Local Government Area used for the study for both experiment and control groups because there were not many. Out of these 95 fine arts students, 56 were male and 39 were female. In each school, the numbers of fine art students available were randomly selected into the experimental and control groups. The researcher made instruments titled Blended Learning Student Performance (BLSPT) and Creativity Measurement Test (CMT), which were used for the study. The Model of Instruction designed for teaching Fine Arts (Blended Learning Pastel Package (BLPP)) in senior secondary school adopted the system principles as postulated by the Dick and Carey model (1996), the Gagne and Briggs model (1974) and the Ibe-Bassey (1996) material – the first rationale model.

BLPP, a module unit of instruction, was used for the control group with the expository method. Two researcher-made instruments were developed for the study, namely the Fine Arts Student Performance Test (BLSPT) and the Creativity Measurement Test (CMT). BLSPT examined the performance of the students after treatment with the Blended Learning Pastel Package (PPCIP). BLSPT had 16 items developed on four-point options lettered (a) – (d). CMT measured the creativity among students. CMT also had 16 items with four-point options (a)–(d). The two instruments were subjected to face and content validation by three experts, all from the Faculty of Education and the Faculty of Environmental Studies, University of Uyo. A test–retest reliability strategy was used for the study. Twenty students that did not take part in the main study but were similar in all characteristics within the study area were tested after a two-week interval. Cronbach's alpha statistic was used in treating the scores in order to examine the consistency of the instrument. The reliability coefficients were .889 and .819 for BLSPT and CMT, respectively, which made the use of the instrument for the study justified. A computer PowerPoint was used in presenting instruction on fine arts as discussed. The

researcher administered BLSPT and CMT to the two groups in each of the schools as a pretest of their prior knowledge. The BLPP was not administered to the control groups while the experimental groups were treated. Descriptive statistics of means and standard deviations were used to answer the research questions, while Analysis of Covariance (ANCOVA) was used in testing all the hypotheses at the .05 significance level.

Results

Research Question One

What difference exists in students' creative abilities in the use of forms and tonal values between those taught using the Pastel Painting Computer Instruction Package (PPCIP) and those taught using the expository method?

Table 2: Mean and standard deviation of pretest and post - test difference in students' creative abilities in use of forms and tonal value when taught using BLPP and expository method.

		Pretest		Post-Test		Mean Difference
Groups	**N**	**$\bar{x}$**	**sd**	**$\bar{x}$**	**sd**	**(Posttest-pre-test)**
BLPP	53	7.95	2.10	17.31	2.97	9.36
Expository method	42	7.66	2.13	11.81	3.02	4.15

N = 95

The results in Table 2 show that the mean score for students' creative abilities in the use of forms and tonal values in the experimental group (17.31), taught using the BLPP, was higher than that of the control group (11.81), which received instruction through the expository method. This represents a post-test mean difference of 5.5. Clearly, students exposed to the BLPP demonstrated greater creative abilities than those taught using the expository method, indicating a significant difference between the two groups. The findings therefore reveal that the researcher-designed and developed BLPP substantially enhanced students' creative abilities in the use of forms and tonal values.

Research Question Two

What is the difference in students' creative abilities in colour combination between those taught with the Blended Learning Pastel Package (BLPP) and those instructed using the expository method?

Table 3: Mean and standard deviation of pretest-post-test scores difference in students' creative abilities in colour combination when taught with BLPP and expository method.

		Pretest		Post-Test		Mean Difference
Treatment groups	n	$\bar{x}$	sd	$\bar{x}$	sd	(Posttest-pre-test)
BLPP	53	7.46	1.75	15.07	2.73	7.61
Expository method	42	7.52	1.51	13.17	2.14	5.65

N = 95

The results in Table 3 indicate that students' mean score in creative abilities for colour combination was higher in the BLPP group (15.07) than in the expository method group (13.17), with a post-test mean difference of 1.90. It can be seen that the variability of the mean of students exposed to BLPP in the experimental group is higher than that of those in the control group taught with the expository method; hence, the creative abilities of the two groups differed. This indicates that the use of BLPP in teaching significantly enhanced students' creative abilities in colour combination.

Research Question Three

What is the joint effect of creative abilities, forms, tonal value and colour combination on students' academic performance when taught with the blended learning pastel package (BLPP)? The square of the multiple regression coefficient (R^2) was used in answering the research question and the summary data shown in Table 4.

Table 4: R and R^2 for joint effect on performance.

R	R square	Adapted R Square	Std error of the estimate
.71	.56	.51	15.36

N = 95

An R^2 value of 0.56 indicates that the Blended Learning Pastel Package explains 56% of the variation in students' academic performance, encompassing their creative abilities, use of forms and tonal values, and colour combination.

Testing of Hypothesis

Testing of Hypothesis One

There is no significant difference in students' creative abilities in the use of forms and tonal values when taught using the Pastel Painting Computer Instruction Package (PPCIP). This hypothesis was tested using Analysis of Covariance (ANCOVA).

Table 5: **Summary of ANCOVA of the difference in students' creative abilities in use of forms and tonal value when taught using BLPP.**

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	605.244	2	302.622	14.151	.05
Intercept	4981.068	1	4981.068	232.927	.05
Pretest	269.511	1	269.511	12.603	.05
Group	446.039	1	446.039	20.858*	.05
Error	1967.387	92	21.385		
Total	20775.000	95			
Corrected Total	2572.632	94			

*P < .05

The results in Table 5 indicate a significant difference in students' creative abilities in the use of forms and tonal values when taught using BLPP. The calculated F value of 20.858 exceeds the critical F value of 3.09 at 2 and 92 degrees of freedom with a 0.05 level of significance. Consequently, the null hypothesis, that there is no significant difference in students' creative abilities in the use of forms and tonal values with BLPP instruction, is rejected. These findings demonstrate that BLPP substantially enhanced students' creative abilities in the use of forms and tonal values.

Testing of Hypothesis Two

There is no significant difference in students' creative abilities in colour combination taught using the blended learning pastel package (BLPP). Analysis of covariance (ANCOVA) was used to test this hypothesis.

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Table 6: **Summary of ANCOVA of the difference in students' creative abilities in colour combination taught using BLPP.**

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	995.489	2	497.744	23.087	.05
Intercept	4335.705	1	4335.705	201.106	.05
Pretest	196.622	1	196.622	9.120	.05
Group	910.521	1	910.521	42.233*	.05
Error	1983.459	92	21.559		
Total	18775.000	95			
Corrected Total	2978.947	94			

The results presented in Table 5 show a significant difference in students' creative abilities in colour combination when taught using the BLPP. The calculated F-value of 42.233 is greater than the critical F-value of 3.09 at 2 and 92 degrees of freedom, with a significance level of 0.05. Therefore, the null hypothesis, which states that there is no significant difference in students' creative abilities in colour combination when taught using BLPP, is rejected. This finding indicates that students exposed to the researcher-designed and developed BLPP demonstrated a substantial improvement in their creative abilities.

Testing of Hypothesis Three

There is no significant joint effect of gender, creative abilities, form and tonal value, and colour combination on students' academic performance taught with the blended learning pastel package (BLPP). Multiple linear regression analysis was adopted to test this hypothesis.

Table 7: Multiple linear regression analysis of the joint effect of creative abilities in use of forms and tonal value and colour combination, on students' academic performance taught with BLPP.

Variable	B	SE	T
Creative abilities	0.23	1.23	13.45*
Use of forms and tonal value	0.17	1.43	9.76*
Colour combination	0.31	1.21	10.14*

Source of variation	Sum of Squares	Df	Mean Square	F
Regression	1548.11	4	387.03	8.65*
Residual	4028.27	90	44.76	
Total	5576.38	94		

$P < .05$ df = 4, 90, F-critical = 2.46, R = 0.71, $R^2 = 0.36$, Adj $R^2 = 0.51$

The F value shown in Table 7 implicated that creative abilities, use of forms and tonal value and colour combination contributed significantly to the regression. However, gender did not contribute to the regression since it was not significant. The result in Table 7 also reveals that the calculated F-ratio of 8.65 is higher than the critical F-ratio of 2.46 at the 0.05 level of significance with 4 and 90 degrees of freedom. With this result, the null hypothesis was rejected. This implies that there is a significant joint effect of creative abilities, forms, tonal value and colour combination on students' academic performance taught with BLPP in Fine Art in senior secondary schools.

Discussion of Findings

The findings of this study revealed a significant effect on the academic performance of students in fine art when taught using the BLPP. This significant effect stems from the fact that students exposed to the BLPP performed better than their counterparts taught through the expository method. This means that the utilisation of BLPP in teaching fine art greatly affected the academic performance of the students. As discussed earlier, Skinner's (1968) study on the stimulus–response learning pattern highlights that various stimuli, such as pictures, audio-visual materials, or spoken words, can effectively influence learning outcomes, depending on how they are utilised.

Summary/Conclusion

This study investigated the Blended Learning Pastel Package and academic performance of fine art students in senior secondary schools in the Uyo Local Government Area. The Blended Learning Pastel Package (BLPP) was the treatment administered to the experimental group, whereas the control group used the expository teaching method. The variables of the study under investigation include the utilisation of BLPP, creative abilities, use of forms and tonal value and colour combination on student academic performance in fine art. There is a significant difference in students' creative abilities in the use of forms and tonal value when taught with the BLPP. Similarly, a significant difference exists in students' creative abilities in colour combination taught with the BLPP. Furthermore, there is a significant joint effect of creative abilities in the use of forms, tonal value, and colour combination on students' academic performance when taught using the BLPP.

The computer-based instructional package (BLPP) enhanced students' performance in pastel painting, captured their attention, and motivated their interest, thereby improving their overall learning outcomes. Based on these findings, it is concluded that the use of the BLPP is more effective and efficient in facilitating the academic performance of senior secondary school students in fine art than the expository teaching method.

Implications of the Findings

1. Blended Learning: The Pastel Package, delivered through the PowerPoint computer software application, has the potential to significantly enhance the academic performance of fine art students. When implemented, it leverages technology-based tools and applications to improve students' motivation, sustain their interest, and capture their attention throughout the teaching–learning process.

2. If the BLPP is implemented, it will create an engaging learning environment that offers a virtual, interactive experience with instructional materials. This interaction, between students and the content, among students themselves, and between students and teachers, will promote exploration, foster the development of motor and intellectual skills, and enhance creative abilities, ultimately improving students' productivity.

3. With the incorporation of information communication and technology, such as the use of the PowerPoint computer software application in the presentation of fine

arts instruction, teachers and students will be attracted to the subject of fine art, thereby offering freedom of expression and use of instructional materials resources. Fine art education will gain greater relevance as both a field of study and a profession, offering the added advantage of aligning with globalisation in this era of emerging technologies. This alignment will contribute to societal development, economic growth, and industrial advancement.

Recommendations

The following recommendations are made based on the findings of the study:

1. Utilisation of BLPP is more effective than the expository method of teaching fine art in senior secondary schools. Therefore, teachers should adopt computer-based instruction and use PowerPoint as a delivery system of education in fine art.

2. Students should be encouraged to engage in interactive resources available online to support learning of fine art in secondary schools, thereby aligning with the global trend of events.

3. Fine Art teachers should be trained to be competent in computer literacy to be able to handle computer-based instructions on Fine Art.

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