



# Effects of Mobile Blogs Augmented Learning Strategies on Pre-Service Teachers' Learning Outcomes in Woodwork in North Western Nigeria

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## Abstract

The study investigated the effect of three modes of mobile augmented learning strategies on pre-service teacher learning outcomes in machine woodwork. It focused on determining the effects of mobile blog of Video, Audio and Text on academic achievement and retention of pre-service teachers. Two research questions and two corresponding hypotheses were formulated and tested in the study. The study adopted a quasi-experimental design and the population of the study comprised 350 woodwork students in the six Federal and State Government owned Colleges of Education in the seven North-Western states. The sample was 144 males and 42 females NCE III Woodwork students making a grand total 186. Two instruments constructed by the researcher used for data collection were: Machine woodwork Achievement Test (MWAT) and Machine Woodwork Retention Test (MWRT). MWAT was pilot tested using test-retest method and reliability index of 0.86 was obtained. The study findings showed that there was significant difference in the academic achievement of pre-service teachers taught machine woodwork using Vblog, Ablog and Tblog in favour of the Ablog. There was also a significant difference in the mean retention scores of pre-service teachers taught machine woodwork using Vblog, Ablog and Tblog in favour of Tblog. The study, therefore, concluded that video blog is more effective in enhancing students' academic achievement in machine woodwork and development of positive attitude towards machine woodworking.

**Keywords:** *Mobile blogs, achievement, retention, pre-service teachers and woodwork.*

## Introduction

Web 2.0 technologies are digital tools to communicate with the students and delivery platforms for educational contents. The nature of this technology makes it a smooth and famous manner to talk records to both a pick out organization of human beings or to a far wider target market. Teacher could make use of those gear to talk with college students, group of workers and the broader educational community (Baruah, 2012). It also can be a powerful manner to talk and engage with college students and studies colleagues. There is quantity of various forms of internet packages consisting of wikis, blogs, social media, folksonomies, podcasting and content material web website hosting offerings amongst others (Abimbade, 2011). But amongst most of these packages, blog has been overwhelming embraced as a way of speaking to the bigger target market and acquire comments through feedback (Creswell, 2009). Blogs are new shape of mainstream private conversation, permitting tens of thousands and thousands of human beings to submit and alternate know-how/records, and to set up networks or construct relationships withinside the weblog world (Mutum & Wang, 2010).

A weblog is a contraction of the phrase's internet log. Blogs normally offer observation or records on a specific issue, occasion or topic. In a few cases, blogs may be approximately a specific character; an on-line, public, private diary. A weblog is normally maintained with the aid of using a unmarried character or a small organization of contributors. Visitors to the weblog can touch upon the entries made or reply to feedback made with the aid of using different visitors. Blogs are by and large textual however also can accommodate any shape of pictures, sounds, or video (Muralidharan, Patterson & Shin, 2011). Blog became proclaimed "phrase of the year" in 2004 with the aid of using Meriam-Webster on-line dictionary. Like different media, blogs regularly recognition on a specific concern, which includes education, generation, or politics (Pitler, 2007).

There are numerous methods of categorizing blogs, a few authors provide attention to media kinds and on this category, there are vblog (video weblog); a linkblog (comprising hyperlinks to others website), audio-weblog (contains of audios) and textual blogs (incorporate textual content and graphics) and mixture of all is referred to as multimedia-weblog. Another manner is prison status: A weblog may be private, as in maximum cases, or it is able to be for commercial enterprise purposes. Blogosphere are the engines like google that are used to look the contents of the blogs to be had at the net (Hsu, Wang, & Comac, 2008).). The gadgets wherein the blogs have been designed to healthy is every other category; a weblog custom

designed with specificity of cell gadgets the usage of move platform software display to deal with size, Random Memory Capability (RMC), amongst others, are refers to cell weblog. The time period "cell weblog" is a mixture of phrases, cell and internet log. It became coined (Alfadda & Alyahya, 2010).

Mobile blogs are internet log in which entries are published with the aid of using a cell device (Hsu & Ching, 2012).). In comparable fashion, the time period cell running a blog is used to consult movement of sending an access to a blog with the aid of using cell device. Mobile blogs are used to facilitate context-touchy gaining knowledge of (Huang, 2009). Students use cell blogs to study primary ideas in statistics shape ideas (Huan, 2009). Mobile blogs function structures that permit customers to ship, edit and submit their submit through logging into the cell blogs platform or through cell message (sms or mms). In addition, the platform additionally permits customers to ship and acquire messages among different cell bloggers, make private profiles and convey topical cell circles (Garciaa, Moizerb, Wilkinsc & Haddoudb, 2019). Mobile weblog is largely much like weblog and the most effective distinction is withinside the approach of transport an access. Mobile blogs may be used as on the spontaneous interplay and conversation device for gaining knowledge of (Shao & Crook, 2015). Mobile weblog may be defined as the very best and handy medium of gaining knowledge of as they may be accessed everywhere and anytime (Hway & Tsai, 2011). Using cell gadgets, college students can seek advice from their friends in addition to their teachers through feedback and entries in cell blogs and that they may be availed with instant comments (Shih, 2010). Mobile blogs may be used as an interplay and conversation platform that indicates sizeable quantity of effectiveness closer to fulfillment of significant gaining knowledge of (Shih, 2010). Mobile blogs have the potentiality of facilitating 'gaining knowledge of at one's very own tempo (Comas & Valentine, 2009). Awada and Ghaith, (2014) indicated that cell blogs allowed college students to research consistent with their very own time and tempo because of the truth that they might talk over with gaining knowledge of substances everywhere on campus. Mobile weblog may be taken into consideration appropriate for lecture room coaching and gaining knowledge of throughout diverse topics consisting of Woodwork Technology.

Woodwork is the artwork of creating matters from wood (Jury, 2012). Woodwork is paintings product of wood, specifically molding or stairways of furniture. The significance of woodwork generation to country wide improvement is apparent whilst one glances on the array of profession possibilities in woodwork which need to activate the hobby of the more youthful

era closer to embracing the concern. Unfortunately, the opposite is the case withinside the use of a these days because the concern maintains to witness systematic decline of college students' hobby main to marked discount withinside the quantity of college students presenting the concern in schools. In the context of establishments of better gaining knowledge of, the predicted gaining knowledge of consequences encompass cognitive skills and collaborative skills (Anaza, 2018). In this take a look at, gaining knowledge of consequences encompass educational fulfillment and retention closer to the academic transport. Academic fulfillment is the diploma to which college students, teachers or status quo done their instructive objectives. It is frequently measured with the aid of using examinations or non-stop evaluation (Dike & Tin, 2010).

Academic fulfillment may be' visible because the' size of the outcomes of particular programme of education or training (Usman, 2010). Relating to educational fulfillment withinside the context of pre-carrier instructor fulfillment in woodwork generation with cell blogs may be measured with the aid of using the' quantum of gaining knowledge of substances college students comprehends, maintain and do not forget after a positive time frame. Retention is the cap potential to bear in mind reviews and matters learnt (Aminu, 2012). The thoughts acquire the substances of know-how via sensation and perception. These received substances withinside the thoughts want to be preserved in shape of pictures for know-how to expand. Whenever a stimulating state of affairs occurs, retained pictures are revived or reproduced to make memorization possible. Hence, woodwork ideas want to be supplied to the newbies in a manner or approach that touches their unconscious that could cause brief recalling of the idea being taught or learnt. Thus, retention of know-how is the cap potential of a learner to hold and bear in mind in addition to do not forget or reproduce the received know-how or a few a part of the know-how after a few times frame have to have elapsed (Chibio, 2012).

Furthermore, college students can maintain higher in the event that they expand nice mind-set closer to the concern. Empirical researches at the outcomes of cell blogs on pre-carrier teachers' gaining knowledge of consequences are very scarce specifically in growing international locations like Nigeria. Studies of this nature figuring out the pre-carrier teachers' fulfillment, retention levels, mind-set and the interplay impact gender on cell blogs augmented gaining knowledge of were conflicting and inconclusive. Therefore, this takes a look at examines the outcomes of cell blogs augmented gaining knowledge of on pre-carrier teachers' gaining knowledge of consequences in woodwork in North Western Nigeria.

### Statement of the Problem

The significance of Woodwork Technology as a topic and woodwork system withinside the software of era training in day-by-day lifestyles sports can in no way be over-emphasized. The problems of information the contents of woodwork system hold even after college students' correctly whole applicable coursework. There is a want for paradigm shift from conventional approach of coaching woodwork to cell blogs augmented getting to know that would suit college students' getting to know choice and in fact make sure contents retention. It is likewise vital that the approach used should foster effective mind-set of college students closer to woodwork era, for the usa to have equipped woodwork era graduates that may reveal mastery of contents withinside the area of work, and withinside the industries or as instructors in an effort to byskip the contents to others. Social media is certainly considered one among numerous engagements that hinder college students from being capable of recognition and take note of their research which has been ensuing to establishments turning out graduate instructors which are certified paper clever however now no longer equipped in content material delivery. To deal with this problem, educators can surely tool way of channeling those social media definitely with instructional contents so one can emerge as getting to know tools. In numerous reviews, research evaluating the outcomes of video, audio, and text-primarily based totally cell blogs are very scarce. In addition, evaluating 3 unique cell blogs augmented getting to know techniques in woodwork is a unique study on this virtual age in Nigeria context. Similarly, variables which include gender, mind-set, fulfillment and retention of pre-carrier instructors the use of sorts of blogs amongst schools of training college students make this a completely unique take a look at. The educational fulfillment and retention amongst pre-carrier instructors enrolled for woodwork era each at secondary faculties and schools of training in Nigeria had been unsatisfactory. The unsatisfactory fulfillment, retention and bad mind-set closer to woodwork era had been blamed on numerous elements which include over dependence on lecture approach of coaching and college students' dependency to social media (Akanbi, 2009). Blog as one of the maximums extensively used Web 2.0 technology era and social media for pride may also be taken into consideration as a platform for coaching and getting to know specially for technological know-how and era training. Blog is a reasonably new concept, so there are pretty few formal opinions of its instructional cost at this factor in time. Many researchers are speculating with a bit of luck approximately the capability outcomes of weblog at the pleasant of instructional revel in and consequences, however a few are nonetheless careful at the outcomes that varieties of weblog that could beautify college

students' fulfillment and retention specially on woodwork era. Based on those facts, it's miles consequently important to perform a take a look at the outcomes cell blogs augmented guidance at the getting to know consequences in woodwork in North Western Nigeria.

**Research Questions**

The following research questions were raised to guide the study:

- (i) What is the difference in the mean achievement scores of pre-service teachers taught machine woodwork using Vblog, Ablog and Tblog mobile blogs augmented learning strategies?
- (ii) What is the difference in the mean retention scores of pre-service teachers taught machine woodwork using Vblog, Ablog and Tblog mobile blogs augmented learning?

**Research Hypotheses**

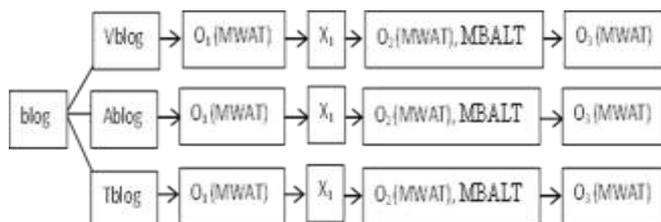
The following research hypotheses were formulated and tested at 0.05 alpha level:

- **HO<sub>1</sub>**: There is no significant difference aims the achievement scores of pre-services teachers taught machine woodwork using mobile Vblog, Ablog and Tblog augmented learning strategies.
- **HO<sub>2</sub>**: There is no significant difference among the retention scores of pre-services teachers taught machine woodwork using mobile Vblog, Ablog and Tblog augmented learning strategies.

**Methodology**

**Research Design**

The study employed a quasi-experimental design of the pretest-posttest, non-equivalent, non-randomized comparison groups design. The study has three treatment groups; each group received different types of mobile blog augmented learning. This design is suitable for intact groups as it does not disrupt the existing learning setting (Creswell, 2009) and it also reduces the reactive effects of the experimental procedure and, therefore, improves the external validity of the design. Quasi experimental is sensitive to internal validity problems due to interaction between such factors as selection and maturation, selection and history, and selection and pretesting, which will be statistically controlled (Dike & Tim, 2010). The design layout is as shown in **Figure 1**.



**Key:** O<sub>1</sub>-Pretesting; X<sub>1</sub>-Treatment; O<sub>2</sub>-Posttesting; O<sub>3</sub>-Retention test

**Figure 1:** Research Design Layout

The independent variable considered in this study is mobile blog Augmented learning at three levels: Video (Vblog), Audio (Ablog) and Textual (Tblog). The three groups were subjected to the pretest, posttest and retention test using mobile Vblog, Ablog and Tblog augmented learning. Experimental group one was subjected to Vblog treatment, Experimental group two was also subjected to Ablog treatment while experimental group three was exposed to Tblog augmented learning. The three groups were exposed to retention test after two weeks of posttest. The dependent variables therefore are students learning outcomes which have two constructs of academic achievement and retention toward mobile blog as learning tool.

The population for the study comprised all the 395 woodwork pre-service teachers (224 males and 126 females) from the six Federal and State government owned Colleges of Education in the seven North-Western states (Kaduna, Kano, Katsina, Zamfara, Sokoto, Kebbi, and Jigawa states) (National Commission for Colleges of Education). The seven schools were grouped into two clusters (A and B) based on their location, having Kaduna, Kano and Jigawa states in cluster A, and Katsina, Zamfara, Sokoto and Kebbi states in Cluster B.

Two stages of sampling procedures were employed in this study.

- **First**, the study adopted purposive sample technique in selecting three colleges of education that met the following criterion: (i) Colleges that have Technical Education Department with option in woodwork in any of the combined courses; (ii) Colleges that have mixed population of male and female pre-service teachers. Based on these criterion, Kaduna State College of Education, Gidan Waya, Kafanchan, Isa Kaita College of Education, Dutsin-Ma, and Shehu Shagari College of Education, Sokoto were selected for the study.
- **Secondly**, simple random technique was used to assign the selected colleges of education into Experimental group one, two, and three respectively. From each experimental group, intact class comprising of male and female pre-service teachers in NCE II were used for the study. One hundred and eighty-six pre-service teachers (144 males and 42 females) made the sample size for the study.

Two research instruments were employed in this study namely: Machine Woodwork Achievement Test (MWAT) and Machine Woodwork Retention Test (MWRT). Machine Woodwork Achievement Test (MWAT) is a researchers' constructed test items. It was developed from the contents of machine woodwork. It is made up of two sections A and B. Section A was designed to elicit response on pre-service teachers' bio data such as Registration Number, Name of Institution, Gender, Medium of Instruction (Type of Blog). Section B consisted of 40-item multiple-choice objective questions on machine woodwork. Each item of the instrument has four options (A-D) of

possible answer to the question. Each question attracts 1 mark with total mark of 40 marks which was converted to percentage to ease the analysis.

The Machine Woodwork Retention Test (MWRT) was reshuffled four Machine Woodwork Achievement Test (MWAT). It maintained the same two sections A and B with all the information on Bio data and the same 40 items multiple-choice objective with four options (A-D) of possible answer to the question. Each question attracts 1 mark with total mark of 40 marks. The MWAT was validated by four Technical Education Lecturers from College of Education Gidan Waya and Isa Kaita College of Education, Dutsanma who were not below rank of Senior Lecturer. They conducted content and face validation of each of the instrument. Their suggestions were dully used to effect the corrections pointed out. Field trial validation of the three treatments (Vblog, Ablog, and Tblog) was administered on 30 NCE II woodwork pre-service teachers from Federal College of Education, (Technical), Bichi. This college is part of the population for the study but not part of the sample for the study. Field trial validation questionnaire was administered on pre-service teachers to receive the feedback on the treatments and to produce the final copy of the blogs. They use the blogs (Vblog, Ablog and Tblog respectively) followed the contents of machine woodwork and make their observations by responding to the field trial validation questionnaire. Majority of the pre-service teachers agreed to the fact that the blogs were interactive and easy to use. They also agreed that the contents were well organized and clear enough for easy understanding.

The (MWAT) was administered to the 30 pre-service teachers twice at interval of two weeks using test-retest method. MWAT was administered without exposing the pre-service teachers to the contents of Machine Woodwork. The scripts were retrieved, marked and subjected to data analysis using Pearson Product Moment Correlation Coefficient and a reliability index of 0.86 was obtained. The instrument was considered reliable.

## Results

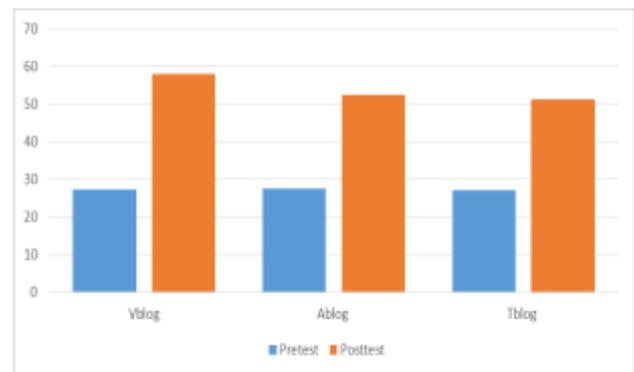
**Research Question One:** What is the difference in the mean achievement scores of pre-service teachers taught machine woodwork using Vblog, Ablog and Tblog mobile blogs augmented learning?

In answering research question one, mean scores of students in the three experimental group were analysed using mean and standard deviation and the result is shown in **Table 1**.

**Table 1:** Pre-test and Posttest Mean Gain Scores of Students Taught Machine Woodwork Using Vblog, Ablog and Tblog

Group	N	Pretest		Posttest		Mean Gain
		Mean	SD	Mean	SD	
Vblog	64	27.44	3.80	58.02	10.16	30.58
Ablog	65	27.57	3.72	52.52	8.25	24.95
Tblog	50	27.12	3.85	51.40	9.69	24.28

**Table 1** shows the mean and standard deviation of the pretest and posttest scores of the students taught machine woodwork using mobile Vblog, Ablog and Tblog. The result revealed that Vblog group has pretest mean scores of 27.44, standard deviation of 3.80 and posttest mean scores of 58.02 and standard deviation of 10.16. This gives a main gain of 30.58. The Ablog group's pretest mean score is 27.57 with standard deviation of 3.72 while the posttest mean achievement score is 52.52 with standard deviation of 8.25. The Ablog group has mean gain of 24.95. For the Tblog group, the mean achievement score for pretest stood at 27.12 with standard deviation of 3.85 while the posttest mean achievement score is 51.40 with standard deviation of 9.69. The Tblog group has the mean gain of 24.28. From the result, it can be deduced that there is different in the pretest and posttest scores of the three group in favour of the posttest. This implies that the students in the three groups perform better in posttest than pretest. However, students in Vblog had highest posttest mean score and mean gain than other groups. This result is further illustrated in figure 2



**Figure 2:** Performance of Students Taught Machine Woodwork Using Mobile Blog of Vblog, Ablog and Tblog

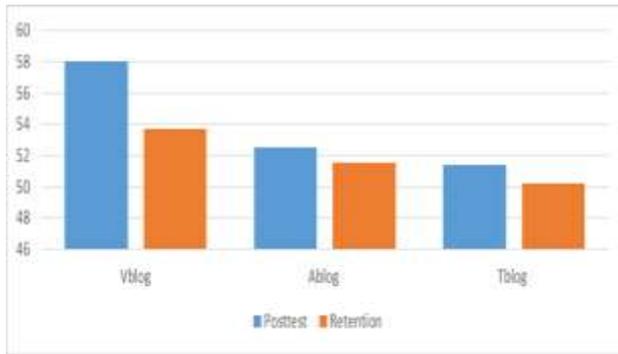
**Research Question Two:** What is the difference in the mean retention scores of pre-service teachers taught machine woodwork using Vblog, Ablog and Tblog mobile blogs augmented learning?

In answering research question two, mean scores of students in the three experimental group were analyzed using mean and standard deviation and the result is shown in **Table 2**.

**Table 2:** Posttest and Retention Loss of Students Taught Machine Woodwork Using Vblog, Ablog and Tblog

GROUP	N	Posttest		Retention		Mean Loss
		Mean	SD	Mean	SD	
Vblog	64	58.02	10.16	53.73	9.61	4.28
Ablog	65	52.52	8.25	51.52	8.75	1.00
Tblog	50	51.40	9.69	50.20	8.82	1.20

Table 2 shows the mean and standard deviation of the posttest and retention score of the three research groups taught machine woodwork using different types of mobile blog. The result revealed that Vblog group has posttest mean score of 58.02 with standard deviation of 10.16 and retention mean score of 53.73 with standard deviation of 9.61; this produced a mean loss of 4.28 for the group. Similarly, the result revealed that Ablog group has posttest mean score of 52.52 with standard deviation of 8.25 and retention mean score of 51.52 with standard deviation of 8.75; this produced a mean loss of 1.00 for the group. For the Tblog group, posttest mean scores of the group stood at 51.40 with standard deviation of 9.69 and retention mean score of 50.20 with standard deviation of 8.82; this produced a mean loss of 1.20 for the group. This shows that the three group slightly loss part of their achievement scores in posttest after three weeks with Vblog group having the highest mean loss.



**Figure 3:** Retention Score of Students Taught Machine Woodwork Using Mobile Blog of Vblog, Ablog and Tblog

### Testing of Hypotheses

**HO<sub>1</sub>:** There is no significant difference in the mean achievement scores of pre-services teachers taught machine woodwork using mobile Vblog, Ablog and Tblog augmented learning.

In testing hypothesis one, the achievement scores of pre-services teachers' exposed to Vblog, Ablog and Tblog were analyzed using ANCOVA as shown on **Table 3**.

**Table 3:** ANCOVA Result of Student Achievement Scores of Vblog, Ablog and Tblog Groups

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1512.112 <sup>a</sup>	3	504.037	5.709	.001
Intercept	9182.698	1	9182.698	104.014	.000
Pretest	5.680	1	5.680	.064	.800
Blogs	1503.264	2	751.632	8.514	.000*
Error	15449.519	175	88.283		
Total	542279.000	179			
Corrected Total	16961.631	178			

**Table 3** shows the ANCOVA results of the achievement scores of the groups taught machine woodwork using Vblog, Ablog and Tblog. From the table, the  $F(2,175) = 8.514$ ,  $p < 0.05$ . This indicates that there is significant difference between the achievement scores of the students in Vblog, Ablog and Tblog. Hence, hypothesis one is rejected. This shows that there is difference in the academic achievement of the three groups. Sidak's post-hoc analysis was conducted to identify the direction of the difference among the three groups as shown in **Table 3b**.

**Table 3b:** Sidak Post Hoc Results of Mobile Vblog, Ablog and Tblog Groups

(i) Blogs	(j) Blogs	Mean Difference (I-J)	p-value	Lower Bound	Upper Bound
VBlog	ABlog	5.499*	.003	1.509	9.488
	Tblog	6.601*	.001	2.323	10.878
ABlog	VBlog	-5.499*	.003	-9.488	-1.509
	Tblog	1.102	.899	-3.164	5.368
Tblog	VBlog	-6.601*	.001	-10.878	-2.323
	ABlog	-1.102	.899	-5.368	3.164

From the Sidak post-hoc analysis of the achievement of the three groups; there was statistical significant difference between the achievement of Vblog, Ablog and Tblog in favour of Vblog while difference between Ablog and Tblog is not significant. This shows that the mean achievement score for Vblog is higher than that of Ablog and Tlog while the difference between mean achievement score of Ablog and Tblog is not statistically significant.

**HO<sub>2</sub>:** There is no significant difference in the mean retention scores of pre-services teachers taught machine woodwork using mobile Vblog, Ablog and Tblog augmented learning.

In testing hypothesis two, the achievement scores of pre-services teacher's exposed to Vblog, Ablog and Tblog were analyzed using ANCOVA as shown on **Table 4**.

**Table 4:** ANCOVA Result of Students Retention Scores of Vblog, Ablog and Tblog Groups

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	13777.166a	3	4592.389	723.845	.000
Intercept	12.225	1	12.225	1.927	.167
Pretest	13408.424	1	13408.424	2113.416	.000
Blogs	293.969	2	146.984	23.167	.000
Error	1110.276	175	6.344		
Total	497864.000	179			
Corrected Total	14887.441	178			

Table 4 shows the ANCOVA results of the retention scores of the three groups taught machine woodwork using Vblog, Ablog and Tblog. From the table, the  $F(2,175)=23.167$ ,  $p<0.05$ . This indicated that there is significant difference between the retention scores of the students exposed to Vblog, Ablog and Tblog. Hence, hypothesis one is rejected. This shows that the difference between the retention scores of the three group is statistically significant. However, the Sidak's post-hoc analysis was done to identify the direction of the difference among the treatment groups as shown in **Table 4b**

**Table 4b:** Sidak Post hoc Results of Mobile Vblog, Ablog and Tblog Groups

(i) Blogs	(j) Blogs	Mean Difference (I-J)	p-value	Lower Bound	Upper Bound
<b>VBlog</b>	ABlog	-2.905*	.000	-4.007	-1.802
	Tblog	-2.628*	.000	-3.818	-1.437
<b>ABlog</b>	VBlog	2.905*	.000	1.802	4.007
	Tblog	.277	.915	-.867	1.421
<b>Tblog</b>	VBlog	2.628*	.000	1.437	3.818
	ABlog	-.277	.915	-1.421	.867

From the Sidak post-hoc analysis of the achievement of the three groups; there was statistical significant difference between the retention score of Vblog, Ablog and Tblog in favour of Vblog while difference between Ablog and Tblog is not significant. This shows that the mean retention score for Vblog is higher than that of Ablog and Tblog while the difference between mean achievement score of Ablog and Tblog is not statistically significant.

### Summary of Findings

The following are the findings of this study:

- (i) There was significant difference in the mean achievement scores of the students taught machine woodwork using Vblog, Ablog and Tblog in favour of Vblog
- (ii) There was significant difference in the retention scores of the students taught machine woodwork using Vblog, Ablog and Tblog.

### Discussion

The finding revealed preservice teachers taught using video blog performed better than others taught using Ablog and Tblog. However, there was no significant difference between the performance of audio blog group and text blog group. This finding is similar to the findings of Gambari, Shittu, Daramola and Jimoh, (2016) who found that there was significant different in students' academic when taught using Text with Narration (TN), Text with Animation (TA), and Text, Animation with Narration (TAN) in favour of those in TAN-Video Type Instructional package group. This was supported by Gambari, Falode, Yaki, Anyanwu

and Olatunji (2014) who reported that performance of students taught geometry with Animated Graphics with Narration and Text performed better than their counterparts in other modes of multimedia instruction. contrary to this finding is the finding of William and Augustine (2018) who used similar media used in this study and found that students taught using podcast (similar to audio blog) had higher academic achievements than those taught using vodcast (Similar to vodcast). This could be as a result of medium of delivery which the present study imbedded video and audio in blogs the previous only provide the audio and video records of activities formally carried in the class.

The findings of the study could be attributed to the favourable environment provided by Vblogs. The V blogs provided the opportunity for the learners to interact and learn at their pace. Furthermore, the Vblog environment provided the learners with learning experience that shift from surface learning to deeper and meaningful learning. Similarly, students who learn using Ablog perform better than Tblog this can be attributed to the ABlog engaging and sustaining the attention span of the learners.

The study also revealed that preservice teachers taught machine woodwork using Tblog have high retention of than those taught using Vblog and Ablog when previous knowledge is controlled. The present finding is contrary to that of Gambari, Yaki, Gana, Ughovwa (2014) who found that students in conventional teaching method who only had text-based leaning resources (similar to text-blog) had better retention than other groups having access to multimedia learning resources. Contrary to this finding is the findings of Kutigi, Gambari, and Gana (2011) who found that students taught using digital audio instructional package (similar to audio-blog) performed better than those taught using normal classroom instruction (a class where students only had access to text-based learning materials similar to text-blog) in the retention test.

Inconstancy of the present finding with some previous findings on retention when digital instructional package used could be as a result of medium of delivery. Previous studies used compact disc playable in computers while the present student imbedded audio, text and video in blogs and examine the effect. The blog, therefore, is having the feature of interactivity with learning content and fellow students via commenting. More so, the reason why text have high retention than both audio and video blogs could as result of the opportunities provided by text to "copy and paste" portion of learning materials seen not to be clear for furthers discussion among pairs and this is not possible with audio and video blog.

### Conclusion

The study exploits educational opportunities in mobile blogs by exploiting the implication of mobile blog modes

on learning outcomes of academic achievement, retention, attitude toward mobile blog as learning tools and the blog format that is not gender sensitive. Based on the findings of the study the, the study concludes that augmenting lecture method with video blog is more effective than audio and text blog when the purpose of such augmentation is to improve students' academic achievement in machine woodwork; Augmenting lecture method with mobile blog of text only is more effective than video and audio blog when the purpose of such augmentation is to have high level of retention of learnt contents of machine woodwork; the effect of augmenting lecture method with video blog is not bias of gender as audio blog and text blog do; the video blog developed positive attitude in preservice teachers toward mobile blogs as learning tools

### Recommendations

Based on the outcomes of the study, the following recommendations are advanced for the improvement of pre-service teacher education programme in machine woodwork:

- (i) Teaching of machine woodwork using video blog augmented learning should be embraced by woodwork lecturers as this is capable of improving students' academic performance in machine woodwork than any other form of blog;
- (ii) For video blog to enhance high retention of learnt contents of machine woodwork, the video should be supplemented with text;
- (iii) The lecturers of machine woodwork should encourage their pre-service teachers to exploit mobile blog sites related to their courses and share ideas with fellow students via commenting on the blog content. Doing this will improve their knowledge of machine woodwork.

### References

- [1] Abimbade, O.A. (2011). University of Ibadan Social Science Pre-service Teachers' Gender Perspective towards Computer Self-efficacy, Internet Skills and Attitude towards Educational Blogging. Unpublished Thesis for Master of Education, Department of Teacher Education, University of Ibadan.
- [2] AlFadda, H., & Al-Yahya. M. (2010). Using Web Blogs as a Tool to Encourage Pre-Class Reading, Post-Class Reflections and Collaboration in Higher Education. *US-China Education Review* 7(7), 100-106.
- [3] Aminu, T. (2012): The Comparative Effects of Instructional Models on Lecture Method on The Academic Performance and Retention among Senior Secondary School Biology Students with a Particular Reference to Zaria Inspectorate Division. Unpublished M.Ed Thesis Ahmadu Bello University, Zaria.
- [4] Anaza, A. (2018). *Fundamentals of Educational Technology and Training*. Okene: Dele Printing Press.
- [5] Awada, G. & Ghaith, G. (2014). Effect of Using the Blog Educational Tool on Writing Achievement and Motivation for Legal Writing. *International Journal of Education and Research*. 2(12)
- [6] Baruah, T. D. (2012). Effectiveness of Social Media as a tool of communication and its potential for technology enabled connections: A micro-level study. *International Journal of Scientific and Research Publications*, 2(5)
- [7] Chibio, A.O. (2012). *Concept of Achievement in Education*. Longman Ibadan, Nigeria.
- [8] Comas, A., & Valentine, C. (2009). Mobile Blogs in Language Learning: Making the most of Informal and Situated Learning Opportunities. *ReCALL*, 21(1), 96-112.
- [9] Creswell, J. W. (2009). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (3rd ed.). Thousand Oaks, California: SAGE Publications. Ind.
- [10] Dike, N. & Tim J., (2010). The Need for Standardizing Achievement Test in Science School. *40<sup>th</sup> Annual Conference Proceeding of Science Teachers Association of Nigeria (STAN) Heinemann Educational Books* (Nig.) Plc. 272-275.
- [11] Gambari, A. I., Shittu, A. T., Daramola, F. O. & Jimoh, M. A. (2016). Effects of Video Instructional Packages on Achievement of Senior Secondary School Students in Mathematics in Minna, Nigeria. *ATBU, Journal of Science, Technology & Education (JOSTE)*. Vol. 4 (2).
- [12] Garciaa, E., Moizerb, J., Wilkinsc, S. & Haddoudb, M. Y. (2019). The effects of Student Learning in Higher Education Through Blogging in the Classroom. *Computers & Education*
- [13] Hsu, H. Y, Wang, S. K., & Comac, L. (2008). Using Audio-blogs to Assist English-Language Learning: An Investigation into Student Perception. *Computer Assisted Language Learning*, 21(2), 181-198.
- [14] Hsu, Y. & Ching, Y. (2012). Mobile Microblogging: Using Twitter and Mobile Devices in an Online Course to Promote Learning in Authentic Contexts. *International Research in Open and Distance Learning*.

- [15] Huang, S.T (2009): Pedagogical Application of Mobile Blogs: An Investigation into ESP Learners' Perception. *British Journal of Educational Technology*, 42 (5), 736-746.
- [16] Hway G. & Tsai C. (2011): Research Trends in Mobile and Ubiquitous Learning: A Review of Publications in Selected Journals from 2011 to 2010 *British Journal of Educational Technology* 42(4), E65-E70.
- [17] Jury E. (2012). Innovative Method for Teaching Woodwork at Technical College in Kaduna State. *Journal of Vocational and Technical Education*, Gidan Waya.
- [18] Kutigi, A., Gambari, A. I. & Gana, E. S. (2011). Effect of Digital Audio Instructional Package on the Performance of Senior Secondary Students in Oral-English in Minna, Nigeria. *Journal of Arts and Education*, 4(2), 134-145.
- [19] Muralidharan, S.; Rasmussen, L.; Patterson, D.; & Shin, J.H. (2011), 'Hope for Haiti: An Analysis of Facebook and Twitter usage during the Earthquake Relief Efforts', *Public Relations Review*, 37(2), 175-177
- [20] Mutum, D, & Wang, Q. (2010). Consumer Generated Advertising in Blogs. In Neal M.Burns. Terry Daugherty. Matthew S. East in. *Handbook of Research on Digital Media and Advertising: User Generated Content Consumption*. 1. IGI Global. pp. 248-261.
- [21] Pitler, H. (2007). *Using Technology with Classroom Instruction that Works*. ASCD & MCREL.
- [22] Shih, R. C. (2010). Blended Learning Using Video-Based Blogs: Public Speaking for English as a Second Language Students. *Australasian Journal of Educational Technology*, 26(6), 883-897.
- [23] Usman, I. (2010). The Relationship between Students' Performance in practical Activities and their Academic Achievement in Integrated Science Using NSSTEP Mode of Teaching. Unpublished Ph.D Dissertation A.B.U Zaria.
- [24] Williams, C. & Augustine, S. E. (2018). Podcast Versus Vodcast and Students' Academic Achievement in Information and Communication Technology (ICT) A Research Course. *British Journal of Education*. Vol.6, No.1, pp.103-110