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EFFECTS OF GOOGLE CLASSROOM AND STILL IMAGES ON ACADEMIC ACHIEVEMENT AND INTEREST OF SENIOR SECONDARY SCHOOL ANIMAL HUSBANDRY STUDENTS FOR FOOD SECURITY IN BENUE STATE, NIGERIA

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Abstract

The study investigated the effects of google classroom and still images on academic achievement and Interest amongst senior secondary school animal husbandry students in Benue State, Nigeria. The study was guided by four specific purposes, research questions and null hypotheses. The study adopted quasi experimental research design with the population of 878 Senior Secondary II students. A sample of 90 Senior Secondary II students from three secondary schools were selected using multi-stage sampling technique. Animal Husbandry Achievement Test (AHAT) and Animal Husbandry Interest Inventory (AHII) were used for data collection. Reliability of the instrument was established using Kuder Richardson formula (K-R_{21}) which yielded a coefficient of 0.94 for the AHAT and Cronbach alpha method was used to determine the reliability coefficient of AHII and a reliability coefficient of 0.87 was obtained. The experiment was carried out in eight weeks during which data were collected at various intervals using the AHAT and AHII. Data collected were analysed using mean to answer the research questions and Analysis of covariance (ANCOVA) to test the null hypotheses at 0.05 level of significance. In Animal husbandry using google classroom had the highest mean academic achievement followed by still images. There was a significant difference in the mean academic achievement of students taught animal husbandry using google classroom, still images and conventional method. There was no significant difference between the mean academic achievement of male and female students taught animal husbandry using google classroom. It was concluded that the use of google classroom and still images enhanced students' academic achievement and interest in animal husbandry.

Keywords: Animal Husbandry, Academic Achievement, Academic interest, Google classroom, Still Images, & Food Security.

Introduction

The global population growth is on the increase leading to high demand for animal proteins and products. This increase in demand calls for the expansion of livestock industry. The livestock industry plays a crucial role in providing employment, food security and economic growth. It is an essential sector that contributes significantly to the nation's Gross Domestic Product (GDP). The need for the expansion of livestock industry to meet up with the demand for animal products means that more hands should be trained to take up entrepreneurial opportunities in livestock industry. Consequently, during the secondary school curriculum review in 2009, Animal husbandry was introduced as a trade subject in senior secondary school to equip students with the knowledge, skills and attitude required for sustainable management of farm animals. Animal husbandry refers to the practice of breeding, raising, and caring for domesticated animals such as livestock, poultry and other creatures, for food, fibre, labour and other products. Animal husbandry is aim at enabling students to acquire the relevant skills for self-independence and economic empowerment.

Animal Husbandry Curriculum of Senior Secondary Certificate Examination (SSCE)in the view of the Nigerian Educational Research and Development Council NERDC (2009) was designed to train students in practical rearing of animals. According to Okereka & Princewill (2015), Animal Husbandry is an applied science and a vocational subject with emphasis on the acquisition of knowledge and skills associated with the rearing of animals in line with the approved curriculum to meet the key targets of the National Economic Empowerment and Development Strategy (NEEDS).

The objectives of Animal Husbandry according to NERDC (2009) are: to stimulate

and sustain students' interest in practical animal husbandry, enable students to acquire knowledge in animal husbandry, prepare students for further studies and occupation in animal husbandry, and to train students on how to generate income using the training and skills they have acquired. In the context of this research, Animal Husbandry is a vocational subject that teaches the skills, knowledge and aptitude that learners will use to engage in animal production.

The pioneer students of this curriculum graduated in 2014 with low academic grades in the senior secondary school external examinations. According to West African Examination Council (WAEC) Chief Examiner's reports for 2015, 2018, 2019 and 2023 there was poor achievement in Animal Husbandry among candidates in Nigeria. According to Asogwa, Isiwu & Ugwoke (2021), about 94% of the graduates lacked the entrepreneurial skills to embark on animal husbandry. Due to the important roles that animal husbandry plays in the economy of Nigeria, the trend of poor academic achievement is seen by educators as an impending doom of economic downturn and food insecurity in the country at large. The extent of knowledge which the students can reproduce after an examination is termed Academic Achievement.

Academic Achievement refers to the measurement of learning level achieved by students. Academic achievement is considered a key indicator of the effectiveness of educational instructions (Mesfin, et al, 2022). Madu & Ezeamagu (2013) defined Academic achievement as the quality and quantity of a student's work feat. Akem (2017) sees Academic achievement as success or result gained by students after being exposed to a learning program. Achievement is a yardstick which determines the success or failure of teaching-learning process. Contextually, Academic achievement is the extent to which a student

can do well in animal husbandry after being taught using different methods as indicated by their scores in a test. There are various factors that affect students' Academic achievement ranging from teachers, social, psychological, educational, economic, family, personality and institutional factors. Aande & Shaahu (2020) reported that lack of practical skills by students of animal husbandry has been a major problem in the teaching and learning of this very important subject. If the students are engaged in practical skills, it will make the subject to be of interest to students. The gains of google classroom and still images in teaching and learning may depend on students' interest in animal husbandry. Interest is a persistent tendency to pay attention and enjoy some activities or contents (Balogun, 2013). Interest is the measure of positive feelings that an individual has about activities, persons or ideas (Garba, 2021). Interest is generally regarded as enduring though modifiable by experience and/or persuasion and as predispositions to action. The level of interest that students have towards animal husbandry will determine whether they can be successful or not. If students have high interest towards animal husbandry, they will be willing to pay attention and actively participate in classroom activities which could go a long way in improving their academic performance. However, if students have low interest towards animal husbandry, then little or no success can be achieved. Positive interest towards animal husbandry is very important as it motivates students to learn (Okeke & Okey, 2012). The lack of interest on the part of the students might be caused by in-appropriate use of teaching strategies such as lecture, chalk and talk or other conventional methods by the teacher (Garba, 2021). Interest in this context is the likeness and positive feeling of students in the teaching and learning of animal husbandry subject, However, if animal

husbandry teachers could use students centred instructional strategies like google classroom and still images that actively engage the learner and appeal to the learners' sense of vision, hearing and touching, it may capture the interest of both male and female students in animal husbandry.

However, Asogwa, et al (2021) observed that some teachers of animal husbandry in senior secondary schools deliver most of their lessons without the use of instructional materials not minding that their non-usage of instructional materials during classroom instruction could be one of the factors of students' poor achievement in the subject. This then calls for better and improved approaches to the teaching of animal husbandry. In light of this, the researcher sought to find out if the use of google classroom and still images as teaching method would improve students' academic achievement, interest and retention in animal husbandry.

Google classroom is an application designed to help students and teachers communicate, collaborate, organize and manage classroom instructions and assignments, go paperless, and much more (Bell, 2015). Similarly, Dickinson (2020) viewed Google Classroom as a free service that allows a teacher to share files (documents, video, pictures and audio), create assignments, grade assignments and communicate with students in a paperless way. The author explained that the first time you log in to the google classroom website (classroom.google.com.) you will see a screen requiring you to choose your role either as teacher or student. The importance of google classroom includes: accessibility, paperless functionality, personalized learning, effective feedback, collaboration, time saving and data analysis (Heggart & yoo, 2018). A teacher can create and join classes in google classroom while a student can only join classes in google classroom.

Dickinson (2020) further stated that as a teacher, when you create a class, google classroom will generate a class code that you can give to your students that will allow them to join your class. This six-digit code is unique to the domain of the teacher and her class, and the class code can be found in the left sidebar of the Stream, and in the students' tab. The teacher can also send invitations to students to join the class. To invite students, they must be in your Google contacts. Google apps admin may have created students' contacts or groups for you. If not, you must add all your students to your contacts. After setting up your class, go to the students' tab and click the invite button, search for each student or group and check the box to select and click invite students and invitation is sent to students who will now accept and join the class.

Google classroom contains various sections. The major section is the stream. The Stream is where teachers view and add announcements, assignments, discussion topics and comments for the students to view and access them (Dickinson, 2020). If enabled by the teacher, students can also add posts and leave comments. The stream is described by Bell (2015) as an interactive section where discussion, argument, watching of videos and pictures, listening to audio, sharing of ideas and experiences, documents and notes take place. The teacher can easily post announcements or attachments to the stream page by clicking on the share something with the class box. The stream contains a section for assignment where the teacher can create or post assignments. The students can click on the title of the assignment to open the assignment details page and click the turn in button when they have completed the assignment and are ready to submit. When a student clicks the Turn-in button, a pop-up will prompt them to confirm their submission. Once submitted, the Turn-in button changes the ownership of

the file from the student back to the teacher, and the student can no longer edit the file. On the left side of the page is where the teacher can issue grades for the assignment and return work to students. Sometimes assignments are not digital, but you can still use google classroom to track assignments and give feedback. In such a case, the teacher asks students to take a snapshot and submit through google classroom. In the context of this research, Google classroom is a platform that use practical videos, pictures and documentaries of various animal husbandry processes, activities and practices that was streamed to students to provide them with similar experiences as if they were in face to face class. The content of the lesson can also be delivered to students through pictures and images that do not move. Those images that convey the contents of lessons that are motionless are called still images.

Still images are visual representations that do not move (Steven, 2011). Still images refer to photographs, paintings or other visual elements that do not involve motion. Still images allow the content creator to convey information which can be more freely interpreted by the user. A picture does indeed paint a thousand words, but the meaning of the picture will vary from user to user. Students at all levels of education can understand a phenomenon better when they can see it. Still images help students visualize and understand complex concepts such as animal anatomy, behaviour and husbandry practices, it is used to illustrate key concepts thereby making it easier for students to grasp and retain information and it enhances students' engagement and interaction (Clark & Mayer, 2016). This is why authors of textbooks attempt to illustrate scientific concepts with photographs and diagrams. Today's students are surrounded by visual media in their everyday lives. The advent of World Wide Web opened access to even more up-to-the minute, state of the art

scientific images that can be used in teaching of concepts. Sinai (2021) affirmed that students are already immersed in a world of photographs and quick videos. It is literally how they communicate now.

The use of still images in the classroom is a pedagogical strategy aimed at engaging students who have grown up in a media-rich environment. While teaching with images has been at the core of disciplines like art history for decades, all courses can benefit from the use of visual materials in the classroom. Hall (2013) asserted that images are effective way of presenting abstract concepts or groups of data. Instructors have reported that their use of images in the classroom has led to increased students' inter-activity and discussion. In this research, still images are motionless pictures that were projected with voice note to convey the content of the lesson in animal husbandry to students. Teaching with images can also help develop students' visual literacy skills, which contributes to their overall critical thinking skills and lifelong retention (Liga & Emaikwu, 2015). The skills acquired during the teaching of this subject in secondary schools could lead to food security when students upon graduation are gainfully engaged in Animal husbandry practices. Food security according to FAO (2020) refers to the availability, access, utilization, and stability of food supplies, ensuring that all people have enough safe, nutritious food to lead active, healthy lives. Food security is defined as a state where all people, at all times, have physical, social and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life (High Level Panel of Experts on Food Security and Nutrition, 2020). In the context of this paper, food security is the availability, access, utilization and stability of Animal production and practices. The continuous involvement and engagement of people in

Animal husbandry practices in order for the Animal proteins and products to be available in continuous supply is a thing of concern if the students in the secondary who are thought this vocational subject fail to embark on its production and practices.

Statement of the problem

There is poor academic achievement amongst students of animal husbandry which may be due to inappropriate teaching methodology, lack of interest and inactivity of students amongst others. If the students continue to have trouble in understanding the content of the subject, then the aims and objectives of animal husbandry would be defeated. Also, the researchers observed that many of the students upon leaving secondary schools tend to choose career parts in crops production and few go for Animal production courses. May be alternatives to the conventional teaching method such as google classroom and still images need to be tried out, hence this study.

Purpose of the study

The general purpose of this study is to investigate the effect of google classroom and still images on academic achievement and interest amongst secondary senior school Animal Husbandry Students for Food Security in Benue State. The specific purposes of the study were to investigate the:

1. Mean academic achievement of students taught animal husbandry using google classroom, still images and conventional method.
2. Mean academic interest of students taught animal husbandry using google classroom, still images, and conventional method.
3. Mean academic achievement of male and female students taught animal husbandry using google classroom.
4. Mean interest of male and female students taught animal husbandry using google classroom.

Research Questions

The study was guided by the following research questions:

1. What are the mean academic achievement of students taught animal husbandry using google classroom, still images and conventional method?
2. What are the mean interest of students taught animal husbandry using google classroom, still images and conventional method?
3. What are the mean academic achievement of male and female students taught animal husbandry using google classroom?
4. What are the mean interest of male and female students taught animal husbandry using google classroom?

The following null hypotheses were formulated and tested at 0.05 level of significance:

1. There is no significant difference in the mean academic achievement of students taught animal husbandry using google classroom, still images and conventional method.
2. There is no significant difference in the mean interest of students taught animal husbandry using google classroom, still images and conventional method.
3. There is no significant difference in the mean academic achievement of male and female students taught animal husbandry using google classroom.
4. There is no significant difference in the mean interest of male and female students taught animal husbandry using google classroom.

This research is hinged on Connectivism Learning theory. George Siemens and Stephen Downes propounded the connectivism learning theory in 2005. Connectivism learning theory states that knowledge is distributed across a network of connections, and therefore that learning consists of the ability to construct and traverse those networks. In other words, learners absorb new knowledge through the connections that they make. Connectivism learning theory puts the learner at the centre.

Methodology

The study adopted a quasi-experimental research design

The population for the study was 878 SS II students from public senior secondary schools in Benue State which offered animal husbandry as one of the vocational subjects during the 2023/2024 academic session (Benue State Ministry of Education, 2023). There are 64 secondary schools that offer animal husbandry in Benue State. There are 486 male students and 392 female students that offered animal husbandry in Benue State.

The sample for the study comprised of 90 senior secondary II animal husbandry students which were made up of 58 male and 32 female students selected from 3 secondary schools in Benue State. Multi-stage sampling technique was adopted in selecting the sample. Stage 1- The schools were stratified into three strata according to educational zones in Benue State. Stage II-One local government area was selected randomly from each of the zones. Stage III-Purposive sampling technique was used to select one coeducational school that offer animal husbandry from each of the selected local government areas. The use of purposive sampling technique was to ensure that each school selected offers Animal Husbandry and co-educational to remove gender bias since gender is a moderating variable in the study.

Two instruments were used in this study for data collection. They are Animal Husbandry Achievement Test (AHAT) and Animal Husbandry Interest Inventory (AHII). In addition, lesson plans prepared by the researcher were used for instruction. Animal Husbandry Achievement Test (AHAT) was used for data collection on academic achievement in Animal Husbandry. The AHPT was adapted from the West African Examination Council past questions. The AHAT had a 50 item of 4-option objectives test with items drawn to cover the three topics that were taught to the students. The topics were: Animal Nutrition (meaning and classes of animal feeds), Sources of Animal Feedstuff and Livestock Ration. Each

question attracted 2 marks, giving a total of 100 marks. The researcher drew a table of specification with reference to Bloom's taxonomy of educational objectives for the development of the AHAT. Mean and Mean gain were used to answer the research questions. Analysis of Covariance (ANCOVA) was used to test the null hypotheses at 0.05 alpha level. The use of ANCOVA was considered appropriate to take care of the possible lack of initial equivalence in the groups since intact classes were used. Null hypothesis was rejected when the p-value was less than 0.05 and was accepted when the p-value was equal to or greater than 0.05. Also, post-hoc of multiple comparisons was done using Tukey test to ascertain where the significant difference occurred among the three treatments used. The Research Questions were valued in such a way that mean gain showed effectiveness.

Presentation of Result

The results of the data analysis and interpretation are presented in tables according to the research questions and hypotheses formulated for the study.

Research Question 1: What are the mean academic achievement of students taught Animal Husbandry using google classroom, still images and conventional method?

Table 1: Mean Academic Achievement of Students Taught Animal Husbandry Using Google Classroom, Still Images and conventional method

Method	Pre-test	Post-test	Mean Gain
Google classroom	40.47	62.44	**21.97**
Still images	51.57	66.89	**15.32**
Control	32.72	37.79	**5.07**

Table 1 showed that during the pre-test, students in the google classroom method had a mean academic achievement score of 40.47 and those in the Still Images method had a mean academic achievement of 51.57 while those in the control group had a mean academic achievement of 32.72 during the pre-test. Table 1 also revealed that in the post-test, students taught Animal Husbandry using google classroom had a mean academic achievement score of 62.44, those taught Animal Husbandry using still images had a mean academic achievement of 66.89 and the mean academic achievement of students taught using the conventional method (control) was 37.79. Table 1 further showed that the mean gain for students taught using google classroom was 21.97 and the mean gain for students taught using still images was 15.32 while the control group had a mean gain of 5.07. The means gain showed that google classroom was the highest in enhancing students' academic achievement follow by still images while the convention method was the least. This showed that the methods were effective.

Hypothesis 1: There is no significant difference in the mean academic achievement scores of students taught Animal Husbandry using google classroom, still images and conventional method.

Table 2: ANCOVA Analysis of the Mean Academic Achievement of Students Taught Animal Husbandry Using Google Classroom and still Images

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	α-value
Corrected Model	44269.630[a]	2	22134.815	109.003	.000	0.05
Intercept	837783.704	1	837783.704	4125.669	.000	
Methods of teaching	44269.630	2	22134.815	109.003	.000	
Error	54218.667	267	203.066			
Total	936272.000	270				
Corrected Total	98488.296	269				

The result in Table 2 showed that the p-value (.000) is less than the α-value of 0.05. This showed that there was a significant difference (p=0.00 <0.05) in the academic achievement of students taught Animal Husbandry using google classroom and still images. The null hypothesis was rejected. This necessitated a post-hoc using Tukey test to ascertain the source of significant difference.

Research Question 2: What are the mean interest of students taught animal husbandry using google classroom, still images and conventional method?

Table 3: Mean Interest of Students Taught Animal Husbandry Using Google Classroom and Still Images

Method of Teaching	Pre-test mean	Post-test mean	Mean Gain
Google classroom	2.56	3.28	0.72
Still images	2.33	3.32	0.99
Control	2.21	2.38	0.17

Table 3 revealed that during the pre-test, the mean interest scores of students taught Animal Husbandry using google classroom was 2.56. The mean interest scores of students taught Animal Husbandry using still images was 2.33 while the control group had a mean interest of 2.21. Table 4 also revealed that in the post-test students taught Animal Husbandry using google classroom had a mean interest of 3.28 while students taught using still images had a mean interest of 3.32. In the post-test, the mean interest of students in the control group was 2.38. The mean gain was 0.72 for the google classroom, 0.99 for the still images and 0.17 for the control group. This means that students taught using still images had the highest mean gain, follow by those taught using goggle classroom while the control group had the lowest mean gain.

Hypothesis 2: There is no significant difference in the mean interest scores of students taught Animal Husbandry using google classroom, still images and conventional method

Table 4: ANCOVA Analysis of Mean Interest Scores of Students Taught Animal Husbandry Using Google Classroom, Still Images and Conventional Method

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	α-value
Corrected Model	49.857[a]	2	24.929	171.979	.000	0.05
Intercept	2424.124	1	2424.124	16723.674	.000	
Methods of teaching	49.857	2	24.929	171.979	.000	
Error	38.702	267	.145			
Total	2512.683	270				
Corrected Total	88.559	269				

The result in Table 4 showed that the p-value 0.00 is less than the α-value of 0.05. This showed that there was a significant difference ($p=0.00<0.05$) in the mean interest of students taught animal husbandry using google classroom and still images. The null hypothesis was rejected. This necessitated a post-hoc using Tukey test to ascertain the source of the significant difference.

Research Question 3: What are the mean academic achievement of male and female students taught Animal Husbandry using google classroom?

Table 5: Mean Academic Achievement of Male and Female Students Taught Animal Husbandry Using Google Classroom.

	Gender	Pre-test	Post-test	Mean gain
Google classroom	Male	40.12	62.67	22.55
	Female	40.92	62.15	21.75
Control	Male	39.68	55.04	15.36
	Female	40.48	47.46	6.98

Table 5 revealed that male students in the Google classroom method had a pre-test mean of 40.12, while female students had a pre-test mean of 40.92. Also, male students in the control group had a mean of 39.68 while female had a mean of 40.48 in the pre-test. During the post test, male students taught Animal Husbandry using Google classroom had a mean academic achievement of 62.67 while female students taught Animal Husbandry using Google classroom had a mean academic achievement of 62.15. Table 10 further showed that male students taught Animal Husbandry using Google Classroom had a mean gain of 22.55 while female students had a mean gain of 21.75. In the control group, male students had a mean gain of 15.36 while female students had a mean gain of 6.98. The mean gain indicated that google classroom improved the academic achievement of both male and female students in Animal Husbandry more than the conventional method.

Hypothesis 4: There is no significant difference in the mean academic achievement of male and female students taught Animal Husbandry using google classroom.

Table 6: ANCOVA Analysis of Mean Academic Achievement of Male and Female Students Taught Animal Husbandry Using Google Classroom

Source	Type III Sum of Squares	df	Mean Square	F	Sig. p-value	α-value	Rmk
Corrected Model	454.775[a]	1	454.775	2.323	.13	0.05	NS
Intercept	230179.219	1	230179.219	1175.523	.00		
Gender	454.775	1	454.775	2.323	.13		
Error	17231.281	88	195.810				
Total	249233.000	90					
Corrected Total	17686.056	89					

P>0.05, NS= Not Significant, RMK=Remark

The result in Table 6 showed that P=0.13>0.05 at the gender. That showed the there was no significant difference (P=0.13 > 0.05) in the mean academic achievement scores of male and female students taught Animal Husbandry using google classroom. The null hypothesis was not rejected.

Research Question 4: What are the mean interest scores of male and female students taught Animal Husbandry using google classroom?

Table 7: Mean Academic Interest Scores of Male and Female Students Taught Animal Husbandry Using Google Classroom

Method	Gender	Pre-test	Post-test	Mean gain
Google Classroom	Male	2.56	3.27	0.71
	Female	2.57	3.31	0.74
Control	Male	2.22	2.39	0.17
	Female	2.20	2.30	0.10

Table 7 revealed that during the pre-test, the mean interest scores of male students taught Animal Husbandry using google classroom was 2.56 while female students had a mean interest of 2.57. On the other hand, male students in the control group taught Animal Husbandry using the conventional method had a mean interest of 2.22 and female student in the control group had a mean of 2.20. During post-test, male students taught Animal Husbandry using google classroom had a mean interest of 3.27 while female students had a mean interest of 3.31. The mean gain for the male and female students in the google classroom was 0.71 and 0.74 respectively. The mean gain for male and female students in the control group was 0.17 and 0.10 respectively. The mean gain showed that google classroom improved both male and female students' interest in Animal Husbandry more than the conventional method.

Hypothesis 4: There is no significant difference between the mean interest of male and female students taught Animal Husbandry using google classroom.

Table 8: ANCOVA Analysis of Mean Interest of Male and Female Students Taught Animal Husbandry Using Google Classroom

Source	Type III Sum of Squares	Df	Mean Square	F	Sig. p-value	α-value	Rmk
Corrected Model	.020[a]	1	.020	.604	.44	0.05	NS
Intercept	595.887	1	595.887	17749.365	.00		
Gender	.020	1	.020	.604	.44		
Error	2.954	88	.034				
Total	599.731	90					
Corrected Total	2.975	89					

P = 0.05, NS= Not Significant, RMK=Remark

The result in Table 8 showed that the P=0.44>0.05 at the gender. That showed that there was no significant difference in the mean interest scores of male and female students taught Animal Husbandry using google classroom. The null hypothesis was not rejected.

Findings of the Study

Based on the data collected and analysed, the following findings were made:

1. Students taught animal husbandry using google classroom had the highest mean academic achievement followed by still images while the conventional method was the least. There was a significant difference between the mean academic achievement score of students taught animal husbandry using google classroom, still images and conventional method.
2. Students taught animal husbandry using still images had the highest mean interest score followed by those taught using goggle classroom and the control group had the lowest mean interest score. There was a significant difference among the mean interest scores of students taught animal husbandry using google classroom, still images and conventional method.
3. Male students taught animal husbandry using google classroom had mean academic achievement scores slightly above that of female students. There was no significant difference between the mean academic achievement scores of male and female students taught animal husbandry using google classroom.
4. Female students taught animal husbandry using google classroom had mean interest scores slightly above that of male students. There was no significant difference between the mean interest scores of male and female students taught animal husbandry using google classroom.

Discussion of the Findings

The finding on academic achievement of students taught Animal Husbandry using google classroom and still images revealed that students taught animal husbandry using google classroom had the highest mean academic achievement followed by those taught still images while the conventional method was the least. Test of the hypothesis showed that there was a significant difference in the academic achievement of students taught animal husbandry using google classroom, still images and conventional method. This means that Animal Husbandry could be better taught using google classroom and still images. The finding agrees with Rilwan & Umoru (2021) who found that Google classroom had positive effects on the academic achievement of students. The finding also collaborates with Anekwe & Amadi (2020) who found that the use of google classroom was effective in enhancing the academic achievement of trainee teachers who were taught Computer Education using google classroom.

Google classroom and still images had been effectively utilized for the purpose of instruction in animal husbandry class to help enhance students' academic achievement as evident in the significant difference found in the present study. This is because the use of google classroom and still images incorporates different activities that appeal to students' attention. The use of google classroom and still images allow the teacher to incorporate the element of creativity in their instructional design where student-centered activities could be conducted in different forms to solve a problem. Having pictures, videos and

real life objects as it is the case in google classroom and still images is beneficial to the students, particularly when problems are complex and require innovative thinking. This might be responsible for the significant difference found in the present study.

Findings on interest of students taught Animal Husbandry using Google classroom, still images and conventional method revealed that students taught Animal Husbandry using still images have the highest mean interest score follow by those taught using goggle classroom and the control group have the lowest mean interest score. Furthermore, there was a significant difference among the mean interest scores of students taught Animal Husbandry using google classroom and still images. This means that the use of google classroom and still images enhanced students' interest in Animal Husbandry more than the conventional method. This finding affirmed that of Anekwe & Amadi (2020) who found that google classroom enhanced students' interest. The finding also collaborates that of Audu & Ali (2020) who found that Animated Pictures Instructional Package (Still images) was able to fascinate students' interest in animal husbandry.

The findings that there was a significant difference in the interest scores of students taught animal husbandry using google classroom, still images and conventional method was possible because the google classroom and still images have instructional packages inform of beautiful videos, pictures and simulations that have the capacity to captivate students' attention. This was also further affirmed by Wahyu, et al

(2019) that in today's world students' interest is fascinated by ICT based instructional strategies since the students spend most of their time with computers, and phones. Thus using an instructional strategy that present similar experiences to what already attract students interest will likely fascinate their interest.

The findings also agreed with Okoyefi (2014) who found that four mode application techniques (still images) enhance retention of concepts learnt by students.

This finding is possible because the use of google classroom and still images enabled learners retained the new knowledge better when animal husbandry concepts were presented using google classroom and still images. The use of google classroom and still images enabled teachers to offer different pathways for students to learn rather than just filtering all information and learning through the scholastic intelligence thus empowering more students to succeed in retaining the knowledge. The google classroom and still images were child-centered and enabled teachers to visualize the students' learning, instruction and assessment. Thus, google classroom was used as tools to enable more students learn through numerous ways that enhances their interest, caters for individual differences and thus making learning meaningful. This is responsible for the high mean retention of students taught animal husbandry using google classroom and still images in this study.

The result on academic achievement of male and female students taught using google classroom showed that male students taught animal husbandry using google classroom had mean academic achievement slightly above that of female students and there was no significant difference between the mean academic achievement of male and female students taught animal husbandry using google classroom. This implies that the

use of google classroom was gender friendly in enhancing students' academic achievement in animal husbandry. The finding gave credence to Alireza & Sheela (2011) who found no significant difference between male and female students in their level of achievement when taught usingof information and communication technology (ICT) based approach (goooogle classroom). The findings also agreed with that of Wahyu, et al (2019) that there was no significant difference between the mean achievement of male and female students taught using google classroom. The finding also agreed with that of Thangapappa (2014) that there was no significant difference between the mean achievement scores of male and female students.

The present study found no significant difference in the mean academic achievement of male and female students in google classroom. This is because the effective use of google classroom could bridge the gender gap as findings have shown that the instructional strategy is gender friendly. In the google classroom, the teacher continually shifted method of presentation to students centred and often combined various creative ways to deliver content. Therefore, not only were students more likely to learn and teachers more likely to bring their creativity to the fore, but other opportunities were also presented keeping in mind that google classroom is multidimensional and students have the potential to change. The active participation of both male and female students could be responsible for the bridging of the gender gap in students' academic achievement in google classroom.

The finding on interest of male and female students taught using google classroom revealed that female students taught animal husbandry using google classroom had mean interest scores slightly above that of male students. However, there was no significant difference between the

mean interest scores of male and female students taught animal husbandry using google classroom. This implied that the use of google classroom is gender friendly in capturing the interest of both male and female students. The findings confirmed the earlier finding by Ibia & Nnyanga (2012) who found no significant difference in the mean interest scores of male and female students in the experimental group. These findings of no significant difference in the interest mean scores of male and female students could be possible because of the active participation of both male and female students in google classroom.

The finding on academic achievement of students based on gender revealed that male students taught Animal Husbandry using still images had mean academic achievement scores slightly above that of female students. However, there was no significant difference between the mean academic achievement of male and female students taught animal husbandry using still images. This implied that there is difference in the mean academic achievement in regard to gender in the group that was taught using still images. This finding is in conformity with Okoyefi (2014) who found no statistical significant interaction effect of method and gender on mean achievement score of students when taught using visual materials. The use of still images in teaching animal husbandry enabled the teacher to present concepts using pictures which enhanced understanding of even abstract concepts thereby enhancing academic achievement of both male and female students. The finding also affirmed the assertion by Olajide & Akpan (2023) that teaching animal husbandry with pictorial teaching aids can enhance students understanding of the concepts.

The findings on the interaction effect of still images and gender revealed that male students taught animal husbandry using still images had mean interest scores slightly

above that of female students. However, there was no significant difference between the mean interest scores of male and female students taught animal husbandry using still images. The findings agreed with Sinai (2021) who found no statistically significant difference between the mean interest of male and female students when taught using still images. This finding is so because still images attracted the attention of both male and female students thereby promoting their interest in animal husbandry. The use of colorful pictures and real life objects in still images classroom could be responsible for capturing the attention of both male and female students in animal husbandry. The implication of this finding is that if teachers could use still images in teaching animal husbandry concepts it will capture students' interest towards the subject.

Conclusion

The use of google classroom and still images enhanced students' academic achievement and interest in Animal Husbandry. The continual poor achievement of students in Animal Husbandry can be improved upon if Animal Husbandry teachers use these instructional strategies. There was no gender difference in the academic achievement, interest and retention of students when taught Animal Husbandry using google classroom and still images. The use of google classroom and still images narrowed the gender gap in Animal Husbandry achievement and interest. If animal Husbandry practices are well adopted and students learned to practice upon graduation, it will lead to food security in Benue State and the Country at large.

Recommendations

Based on the findings and conclusion of this study, the following recommendations were made:

1. Animal husbandry teachers should insensitively incorporate the use of google classroom and still images to appeal to students' senses to enhance their academic achievement.
2. Animal husbandry teachers should use google classroom and still images so as to attract the interest of students in Animal husbandry subject.
3. Teachers and students should learn and be conversant with the use of google classroom so that even when there is an unfavourable situation such as lockdown, flood or insecurities teaching and learning can continue in Animal Husbandry.
4. Teachers should use images to illustrate step by step procedures in animal handling, and explain complex anatomical structures, and husbandry practices for effective teaching and learning of Animal Husbandry.