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ASSESSING ATTITUDES IMPACTING THE UTILIZATION OF INSTRUCTIONAL MATERIALS BY AGRICULTURAL SCIENCE TEACHERS IN GOMBE STATE SECONDARY SCHOOLS

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Abstract

The study explores the attitudes of Agricultural Science Teachers (AST) in Gombe State secondary schools toward the use of instructional materials. The study aims to understand the factors influencing these attitudes and the extent to which teachers utilize instructional materials in their teaching practices. The study's introduction highlights the importance of teaching in the holistic development of learners and emphasizes the role of instructional materials, skills, and attitudes in effective teaching. The research identifies a gap in understanding AST attitudes toward instructional material utilization, despite its potential benefits. The purpose of the study is to assess these attitudes and objectives include determining teachers' attitudes toward the improvisation of instructional materials, identifying factors influencing these attitudes, and evaluating AST attitudes toward instructional material utilization. Through a descriptive survey research design, data was collected from 266 respondents (administrative staff and teachers) across 132 secondary schools in Gombe State. The study employs various statistical analyses, including t-tests and mean comparisons, to examine the research questions and hypotheses. Findings reveal that AST are concerned about time constraints and durability when it

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comes to improvising instructional materials. Factors influencing attitudes include policy formulation, corruption, students' attitudes, government support, and inadequate remuneration. Additionally, the study finds that AST utilize instructional materials to a slight extent in their teaching practices. The study recommends the implementation of professional development programs to enhance teachers' improvisation skills and strategies, collaborative efforts to address factors inhibiting instructional material use, and the development of a long-term strategy for sustained improvement in instructional material utilization.

Keywords: Agricultural Science, Attitudes, Impact, Instructional Materials, Secondary Schools, Teachers, Utilization

INTRODUCTION

Teaching as an attempt to help someone acquire or change some skills, knowledge, ideal or appreciation. One of the cardinal objectives of teaching is to assist the learners develop physically, intellectually, emotionally, morally and socially in a manner that they will be able to exploit it maximally (Nwosu, 2016). According to Onike (2007), a teacher occupies an important position and is a key element in the operation of the school system. The quality of the services a teacher offers is highly influenced by the teaching aids, "competencies, expertise, enthusiasm, devotion, commitment, dedication, profession, training, attitude, and personality of the teacher". According to Muijs and Reyrolds (2015), a teacher's method of instruction is a crucial factor in fostering effective teaching and learning for students. As a result, teachers who have access to instructional materials have a responsibility to turn their students into moral, capable, and responsible and morally sound citizens of the nation.

Isacc, Joseph, and Valentina (2018) defined a teacher's attitude as their expectation of a favorable or unfavorable result when improvisation is used in the classroom based on how they believe the academic and social community will react to improvisation in the curriculum. What is taught, how it is taught, and who is anticipated to be able to understand it are all influenced by the teacher's attitude toward the subject matter (Darling Hammond, 2005). What and how teachers choose to teach can frequently be influenced by social viewpoints on the goals of education in relation to the subject matter (Kelly, 2009). Therefore, in addition to their own values, teachers' attitudes may be influenced by the various ways in which improvisation is perceived in their social setting.

The National Policy of Education of the Federal Republic of Nigeria [FRN] (2007) states that science and vocational education should be among the subjects taught to students in order to equip the students to live successfully in the modern age of science and technology. It has been observed that science and vocational education is a veritable tool for the scientific advancement of any nation. Resources for the teaching and learning of science and technology (agricultural science included) must be developed adequately and used wisely in our secondary schools in order to accomplish this.

Temu and Kitalyi (2011) argued some instructors are ill-prepared to handle some of the system's difficulties, such as the fact that classes are typically large, the lack of instructional resources, and gender imbalances. Kabugi (2013) discovered additional difficulties in teaching and studying agricultural science due to inadequate teaching resources, including school farms, agricultural instruments, and agriculture classrooms. Without the use of educational tools, several subjects, like agriculture economics, farm machinery, and farm power, were particularly challenging to the students. There are numerous practical exercises involved in the agricultural science course. Because of this, a shortage of funding will prevent the subject from being taught and learned effectively. This is because such resources are necessary for practical work. Lack of textbooks, bad management, and inadequate finance are a few of the issues that hinder the teaching and learning of agricultural science, according to Konyango (2010). Similar to this, Ssekamwa (2009) argues that practical education in fields like agricultural science has become less successful due to a lack of funding and insufficient funding. In light of this, Nwosu (2016) said that passionate teachers go above and beyond to make their classes enjoyable and fascinating by inventing the necessary educational resources.

According to Abah (2007), defined improvisation is the act of using alternative materials and resource to facilitate instruction whatever that is lack of shortage of some specific first hand instructional materials. Azebike (2004) defined improvisation as a means to make or do hastily without extensive preparation and using those materials that are locally available and do not involve high cost as substitute to the factory make or imported ones. Improvisation is the act of construction materials from locally available materials that can adequately replace or function in a place of the original materials which otherwise may be very expensive or in short supply or unavailable (Eriba & Regina, 2011).

Most of the factors responsible for the low improvisation and utilization of instructional materials by Agricultural Science Teachers (AST) has to do with physical and materials conditions. It is important to bear in mind what the teacher feels about the use of instructional materials against the fear by the AST that they lose their central role in the classroom.

Statement of the Problem

The effective use of instructional materials is essential for enhancing the quality of education, particularly in the field of agricultural science. However, there appears to be a gap in understanding the attitudes of AST in Gombe State secondary schools toward the utilization of instructional materials. Despite the potential benefits of instructional materials in improving teaching and learning outcomes, there seems to be varying degrees of reluctance or resistance among teachers to integrate these materials into their instructional practices. The identification and examination of the attitudes that impact the utilization of instructional materials by AST in Gombe State secondary schools are crucial to addressing this issue and fostering more effective teaching methodologies and learning experiences."

Purpose of the Study

The purpose of the study was to assess the attitudes impacting the utilization of instructional materials by AST in Gombe State secondary schools. The specific objectives of the study were to;

i. Determine the attitude of teachers toward the improvisation of instructional materials in teaching Agricultural Science in secondary schools in Gombe State?
ii. Determine the factors influencing teachers' attitudes toward the improvisation of instructional materials in teaching agricultural science in secondary schools in Gombe state?
iii. Determine the attitudes of AST towards the utilization of instructional materials in teaching agricultural science in secondary schools in Gombe state?

Research Questions

The following research questions were raised to guide the study;

i. What is the attitude of teachers toward the improvisation of instructional materials in teaching Agricultural Science in secondary schools in Gombe State?

ii. What are the factors influencing teachers' attitudes toward the improvisation of instructional materials in teaching agricultural science in secondary schools in Gombe state?

iii. What are the attitudes of AST towards the utilization of instructional materials in teaching agricultural science in secondary schools in Gombe state?

Hypotheses

The study was guided by the following null hypotheses were tested at 0.05 level of significance.

Ho_1: There is no significant difference in the mean responses of teachers and administrators on the attitude of teachers toward improvisation of instructional materials in teaching agricultural science in secondary schools in Gombe state

Ho_2: There is no significant difference in the mean responses of teachers and administrators on the factors influencing the teacher's attitude toward improvisation of instructional materials in teaching agricultural science in secondary schools in Gombe state.

Ho_3: There is no significant difference in the mean responses of teachers and administrators on the agricultural science teacher's attitude toward utilization of instructional materials in teaching-learning process in secondary schools in Gombe state.

METHODS

The research utilized a descriptive survey research design to assess the attitudes impacting the utilization of instructional materials by AST in Gombe State secondary schools. The study focused on Gombe State in Nigeria, providing geographical context and details about its local government areas. The population of the study was 698 respondents from the 132 secondary schools in Gombe. The respondent comprised 266 administrative staff and 432 teachers of Agricultural Science in Gombe state of Nigeria. A sample size of 156 respondent was used for the study. This consist of 87 teaching staff and 69 for the administrator using Taro Yamane formula. The study adopted stratified simple random sampling technique to select five (5) secondary schools in each of the education zones in Gombe state making a total of 20 Secondary Schools. The data collection instrument, a

structured questionnaire, was developed by the researcher and validated by three experts from the department of Vocational Education Modibbo Adama University Yola. The instrument's reliability was established through a trial test and Cronbach Alpha and the coefficient index was 0.863. Data collection involved personal contacts with the assistance of research assistants, followed by data analysis using SPSS version 23.0. Different scales were used to answer the research questions, and t-tests were applied to test hypotheses.

RESULTS

Research Question 1: What is the attitude teachers' toward improvisation of instructional materials in teaching agricultural science in secondary schools in Gombe state?

Table 1: Mean responses on the attitude of teachers' toward improvisation of instructional materials

S/N	ITEMS	$n_a = 62$			$n_t = 84$		
		$\bar{x}_a$	σ_a	Remark	$\bar{x}_t$	σ_t	Remark
1.	AST like teaching without instructional materials	2.31	0.46	W	2.29	0.70	W
2.	Producing instructional materials is time consuming	4.10	0.30	S	4.07	0.97	S
3.	AST don't know how to produce some of the instructional materials needed in teaching Agricultural Science	2.35	1.16	W	2.33	1.24	W
4.	The instructional materials is too complex to produce	2.50	0.72	W	2.14	1.32	W
5.	AST hardly fined time for improvising of instructional materials	3.61	1.23	S	3.56	1.19	S
6.	Using improvising instructional materials make me shy in teaching Agricultural Science.	2.61	1.50	LF	2.60	1.12	LF
7.	I prefer teaching without use of an instructional materials	2.29	1.70	W	2.20	1.16	W
8.	My student's loss interest anytime I use improvised instructional materials during my teaching and learning process.	2.66	0.77	LF	2.57	1.38	LF
9.	AST lack support from school administrators when improvise	4.58	0.76	S	4.55	0.61	S

	instructional materials						
10.	Some of the instructional materials do not last long as such, i don't normally use them.	4.18	0.97	S	4.11	0.97	S
11.	AST feel satisfied whenever they improvise instructional materials.	4.37	0.94	S	4.35	0.69	S
12.	My students encourages me to improvise instructional materials	1.90	0.30	W	1.99	1.08	W
13.	Inadequate preparation discourage me from improvising instructional materials	4.21	0.79	S	4.12	1.08	S
14.	Improvisation help me to improve on my teaching and learning of Agricultural Science.	4.13	0.34	S	4.06	1.20	S
15.	My school encourages me to improvise instructional materials in teaching Agricultural Science.	2.18	0.93	W	2.01	1.48	W
		3.20		**LF**	**3.13**		**LF**

$\bar{x}_t$ = *Mean response of Teachers,* δ_t = *standard deviation of Teachers,* $\bar{x}_a$ = *Mean rating of Administrators,* $\bar{x}_G$ = *Mean of means,* σ_a = *standard deviation of Administrators,* n_t = *Number of Teachers,* n_a = *Number of Administrators, VS = Very Strong, S = Strong, LF = Laissez Fair, W = Weak*

Table 1 answered research question one. Showed the teachers' attitude toward improvisation of instructional materials in teaching agricultural science in secondary schools in Gombe State. The table showed that the respondents as indicated in item 2, 5, 9, 10, 11, 13 and 14, the teachers express strong attitude in the improvisation of instructional materials in teaching agricultural science in secondary schools in Gombe State with mean value which ranges between 3.61 and 4.37; and having a standard deviation range between 0.30 and 1.23 respectively. The respondents further revealed that the teachers showed moderate level of attitude towards improvisation with mean value which ranges between 2.50 and 2.66; and standard deviation of range value between 0.72 and 1.50 respectively. The respondents in item 1, 3, 5, 7, 12 and 15 indicated with mean value range between 1.90 and 2.35, and having a standard deviation range between 0.30 and 1.70 that the administrators and teachers showed low level of attitude. The overall mean of 3.20 indicated that the administrators and teachers' showed moderate level of attitude toward improvisation of instructional materials in teaching agricultural science in secondary schools in Gombe State.

Research Question 2: What are the factors influencing AST' attitude toward improvisation of instructional materials for teaching agricultural science in secondary schools in Gombe state?

Table 2: Mean Response on the factors influencing AST' attitude toward improvisation of instructional materials

S/N	ITEMS	n_a = 62			n_t = 84		
		$\bar{x}_a$	σ_a	Remark	$\bar{x}_t$	σ_t	Remark
16.	Schools are to be providing instructional materials from their internally generated revenue.	4.37	0.87	Agreed	4.29	0.57	Agreed
17.	Improvisation of instructional materials are capital intensive	3.95	1.31	Agreed	3.82	1.20	Agreed
18.	Lack of proper maintenance affect teacher's attitude toward improvisation of instructional materials.	3.60	0.43	Agreed	3.52	0.96	Agreed
19.	Poor policy formulation and implementation affects teachers of agricultural science in improvisation of instructional materials.	4.35	0.83	Agreed	4.30	0.49	Agreed
20.	Corruption in education system discourages agricultural science attitude toward improvisation of instructional materials.	4.23	0.42	Agreed	4.20	0.74	Agreed
21.	Students' attitudes towards educational facilities affects AST in improvisation of instructional materials	4.37	0.79	Agreed	4.30	0.49	Agreed
22.	Periodic increase in tuition fee help AST to have enough time to use in improvisation of instructional materials.	2.03	0.63	Disagreed	1.96	1.25	Disagreed
23.	Compromise by regulatory body affects the improvisation of instructional materials in our school.	3.98	1.25	Agreed	3.95	0.46	Agreed
24.	Increase in student enrollment has negatively influencing teachers in improvisation of	2.05	0.22	Disagreed	1.95	1.22	Disagreed

	instructional materials.						
25.	Insufficient fund received from government discourages AST to improvise instructional materials.	3.85	0.81	Agreed	3.77	1.43	Agreed
26.	Deficient government concerns affects the AST in improvisation of instructional materials.	4.08	1.11	Agreed	4.05	0.69	Agreed
27.	Lack of awareness of necessary modern instructional facilities discourages teachers of agricultural science to improvise instructional materials.	1.84	0.75	Disagreed	1.77	1.07	Disagreed
28.	Lack of adequate trained manpower to use facilities affects agricultural science in improvisation of instructional materials.	2.21	0.93	Disagreed	2.19	1.47	Disagreed
29.	Poor salary of teachers has weakens drives to purchase personal facility or engage in skill improvement	4.74	0.44	Agreed	4.71	0.45	Agreed
30.	Vandalism of few available instructional materials discourages AST for improvisation.	4.02	0.69	Agreed	3.90	1.37	Agreed
31.	Poor maintenance culture affects AST in improvising of instructional materials.	1.95	1.09	Disagreed	1.90	0.67	Disagreed
32.	Over population of students above the available facilities affects AST in improvisation of instruction materials.	4.10	0.30	Agreed	3.90	0.87	Agreed
33.	Institutions should always provide instructional materials from their internally generated revenue.	3.87	0.34	Agreed	3.83	0.90	Agreed
34.	Inadequate support from the PTA affects the improvisation of instructional materials in our schools	1.98	0.13	Disagreed	1.95	1.21	Disagreed
		3.37		**Disagreed**	**3.30**		**Disagreed**

$\bar{x}_t$ = *Mean response of Teachers,* δ_t = *standard deviation of Teachers,* $\bar{x}_a$ = *Mean rating of Administrators,* $\bar{x}_G$ = *Mean of means,* σ_a = *standard deviation of Administrators,* n_t = *Number of Teachers,* n_a = *Number of Administrators,*

Table 2 answered research question two. Showed the factors influencing AST' attitude toward the improvisation of instructional materials for teaching agricultural science in secondary schools in Gombe state. The table showed that the administrators and teachers agreed with item 16, 17, 19, 20, 21, 23, 25, 26, 29, 30, 32 and 33, as factors influencing AST' attitude toward improvisation of instructional materials for teaching agricultural science in secondary schools in Gombe state with mean value which ranges between 3.98 and 4.74; and standard deviation range between 0.30 and 1.31 respectively. The administrators and teachers with mean values which ranges between 1.77 and 2.21; and standard deviation of range value between 0.22 and 1.47 respectively disagreed with item 18, 22, 24, 27, 31, and 34 on the factors influencing AST' attitude toward improvisation of instructional materials for teaching agricultural science in secondary schools in Gombe state.

Research Question 3: What are the attitudes of AST toward utilizing instructional materials in the teaching-learning process in secondary schools in Gombe state?

Table 3: Mean and standard deviation of administrators and teachers on the attitudes of AST toward utilizing instructional materials

S/N	ITEMS	n_a = 62			n_t = 84		
		$\bar{x}_a$	σ_a	Remark	$\bar{x}_t$	σ_t	Remark
35.	Agricultural science teacher utilizes Hatching troughs, cutting knives and fishing boxes during practical lessons	1.40	0.76	NU	1.37	0.49	NU
36.	Agricultural science teacher utilizes electronic teaching materials like overhead projector opaque projectors, computer systems during lessons	1.77	0.98	SU	1.65	0.74	SU
37.	Agricultural science teacher utilizes demonstration pond Fishing tools and equipment's such as hook and line, gillnets and basket	1.48	0.86	NU	1.45	0.50	NU
38.	Agricultural science teacher utilizes simple farm tools like hoe, rake shovel, spade and axe during teaching agricultural science lesson	4.32	0.47	U	4.27	0.91	U
39.	Agricultural science teacher utilizes	1.45	0.84	NU	1.33	0.47	NU

	animal science teaching materials like burdizzor, flier scapel thermometer						
40.	Agricultural science teacher utilizes soil science teaching materials such as soil sample, spectro photometer ph. Meter etc. during teaching	1.87	1.00	SU	1.82	0.78	SU
41.	Agricultural science teacher utilizes used knapsack pressure sprayer to teach agricultural science in my school	1.82	1.11	SU	1.80	0.74	SU
42.	AST uses hand sprayer and hand sprayer with container in their practical lessons.	1.58	0.69	SU	1.55	0.90	SU
43.	I used root pruners and secatour to teach agricultural science in my school.	1.19	0.60	NU	1.12	0.33	NU
44.	I used planting hoes to teach agricultural science during practical lessons in my school.	3.98	0.13	U	3.33	0.47	MU
45.	Agricultural science teacher utilizes used wheel barrows, head pan and machetes in my school to teach agricultural science.	1.40	0.49	NU	1.36	0.48	NU
46.	Agricultural science teacher's uses water pumps for easy learning in your school.	1.69	0.71	SU	1.52	0.63	SU
47.	Agricultural science teacher utilizes measuring tape, hand trowel, spade and pick axe during practical lessons.	4.03	0.65	U	4.01	1.23	U
		2.15		**SU**	**2.04**		**SU**

$\bar{x}_t$ = *Mean response of Teachers,* δ_t = *standard deviation of Teachers,* $\bar{x}_a$ = *Mean rating of Administrators,* $\bar{x}_G$ = *Mean of means,* σ_a = *standard deviation of Administrators,* n_t = *Number of Teachers,* n_a = *Number of Administrators,*

Table 3 answered research question three. Showed the attitudes of AST toward utilizing instructional materials in teaching agricultural science in secondary schools in Gombe state. The table indicated that the administrators and teachers agreed that the teachers utilizes item 38, 44 and 47 with the mean value which ranges between 3.98 and 4.32; and standard deviation range between 0.47 and 1.23 respectively. The administrators and teachers with mean values which ranges between 1.52 and 1.87; and standard deviation of range values between 0.63 and 1.11 respectively indicated that teachers slightly utilize item 36, 40 – 42 and 46. The respondent indicated that item 35, 37, 39, 43 and 45 are not

utilized with mean values which ranges between 1.36 and 1.48 and standard deviation between 0.48 and 0.78 respectively. The overall mean of the respondents indicated with a mean of 2.15 and 2.04 that the teachers to a slight extent utilize improvised instructional materials in teaching of AST in secondary schools in Gombe state.

Hypothesis One: There is no significant difference in the mean responses of teachers and administrators on the attitude of teachers toward improvisation of instructional materials in teaching agricultural science in secondary schools in Gombe state

Table 4: t-test analysis of responses of administrators and teachers on the attitude of teachers toward the improvisation of instructional materials

Group	N	$\bar{x}$	σ	Df	t	p	Decision
Administrators	62	3.20	0.34				
				144	1.416	0.16	NS
Teachers	84	3.13	0.25				

KEY: $\bar{x}$ =Mean, σ = Standard Deviation, n = Number of Respondents, df = Degree of Freedom, t = Observed t-value, p = Probability value (2-tailed)

Table 4 answered hypothesis one. The table showed that the administrators have mean value of 3.20 and standard deviation of 0.34 and the teachers have mean of 3.13 and standard deviation of 0.25 at 144 degrees of freedom. The p-value of 0.16 which is greater than the 0.05 level of significance. This implies that there is no significant difference in the mean responses of teachers and administrators on the attitude of teachers toward improvisation of instructional materials in teaching agricultural science in secondary schools in Gombe State. Therefore the hypothesis is accepted.

Hypothesis 2: There is no significant difference in the mean responses of teachers and administrators on the factors influencing the teacher's attitude toward improvisation of instructional materials in teaching agricultural science in secondary schools in Gombe State.

Table 5: t-test analysis of responses of administrators and teachers on the factors influencing the teacher's attitude toward improvisation of instructional materials

Group	N	$\bar{x}$	σ	Df	T	P	Decision
Administrators	62	3.37	0.15				
				144	1.779	0.08	NS
Teachers	84	3.30	0.30				

KEY: $\bar{x}$ *=Mean,* σ *= Standard Deviation, n = Number of Respondents, df = Degree of Freedom, t = Observed t-value, p = Probability value (2-tailed)*

Table 5 answered hypothesis two: The table showed that the administrators have a mean value of 3.37 and a standard deviation of 0.15 and the teachers have a mean of 3.30 and a standard deviation of 0.30 at 144 degrees of freedom. The p-value of 0.08 is greater than the 0.05 level of significance. This implies that there is no significant difference in the mean responses of teachers and administrators on the factors influencing the teacher's attitude toward improvisation of instructional materials in teaching agricultural science in secondary schools in Gombe State. Therefore the hypothesis is accepted.

Hypothesis 3: There is no significant difference in the mean responses of teachers and administrators on the agricultural science teacher's attitude toward utilization of instructional materials in teaching-learning process in secondary schools in Gombe state.

Table 6: t-test analysis of responses of administrators and teachers on teacher's attitude toward utilization of instructional materials

Group	N	$\bar{x}$	σ	Df	T	p	Decision
Administrators	62	2.16	0.42				
				144	2.21	0.21	NS
Teachers	84	2.05	0.14				

KEY: $\bar{x}$ *=Mean,* σ *= Standard Deviation, n = Number of Respondents, df = Degree of Freedom, t = Observed t-value, p = Probability value (2-tailed)*

Table 6 answered hypothesis three: The table showed that the administrators have mean value of 2.16 and a standard deviation of 0.42 and the teachers have mean of 2.05 and standard deviation of 0.14 at 144 degrees of freedom. The p-value of 0.21 which is greater than the 0.05 level of significance. This implies that there is no significant difference in the mean responses of teachers and administrators on the agricultural science teacher's attitude toward utilization of instructional materials in teaching agricultural science in secondary schools in Gombe state. Therefore the hypothesis is accepted.

DISCUSSION

The findings of the study with regard to research question one revealed AST' see improvisation of instructional materials as time consuming, so, they hardly find time to improvise instructional materials. More so, AST lack support from school administrators and improvised instructional materials lack durability if eventually produced. Although, instructional materials help to enhance teaching/learning of Agriculture and the AST are satisfied if instructional materials are produced, to a very high extent AST are inadequately prepared for improvisation of instructional materials for teaching Agriculture in the secondary school in Gombe State. The hypothesis supporting this research question also revealed that there was no significant difference in the mean responses of administrators and teachers on the attitude of AST toward improvisation of instructional materials in teaching agricultural science in secondary schools in Gombe state. These finding are in agreement with Isacc, Joseph and Valentina (2018) who reported that science teacher's attitude toward improvisation is poor as most teachers feel reluctant to improvise instructional materials. Emphasizing on the effect of instructional materials in teaching and learning processes, Isacc, Joseph and Valentina asserted that teacher with positive attitude to improvisation will make the production of it with ease. To further buttress the findings, Ogbe and Omenka (2017) who conducted a study on improvisation and utilization of resources in the teaching and learning of science and mathematics reported that science teachers are lazy towards improvisation of instructional materials.

The second finding of the study with regard to research question two revealed that the factors influencing AST Attitudes towards improvisation of instruction materials they include: poor policy formulation and implementation, corruption in education system, students' attitudes towards educational instructional materials facilities, high cost of production deficient government concerns, and poor teachers' remuneration, vandalism of few available instructional materials and over population of students above the available facilities. In line with the research question, the hypothesis revealed that there was no significant difference in the mean responses of teachers and administrators on the factors influencing the teacher's attitude toward improvisation of instructional materials in teaching agricultural science in secondary schools in Gombe State. This finding is in tandem with Bawa and Ibrahim (2019) who examined the use of local materials to supplement learning process. Bawa and Ibrahim reported that unavailability of instructional materials in rural areas, high cost of materials are among the factors hindering teacher in

agricultural science subject from improvisation. This finding is also supported by Owuamanam (2017) who reported that creativity, innovation, lack of technical know-how are among the factors inhibiting the improvisation of learning instructional materials.

The third findings of the study revealed that AST showed that AST uses farm tools like hoe, shovel rack, axe, hand trowel and spade in teaching agricultural science in secondary schools in Gombe state. The hypothesis backing up the research question three revealed that there is no significant difference in the mean responses of teachers and administrators on the agricultural science teacher's attitude toward utilization of instructional materials in teaching agricultural science in secondary schools in Gombe state. The finding is in concord with Lawrence (2016) who conducted a study on the availability and utilization of instructional materials for teaching chemistry in senior secondary schools. Lawrence reported that teachers barely utilizes instructional materials in the teaching and learning processes as most of the teachers observed in the study taught their lessons without instructional materials except in some few cases. Furthermore, Keshav (2017) supported the finding as the author reported that availability of instructional materials does not translate into its uses and as such many teachers do not use instructional materials in lesson delivery. Keshav further reported that the attitude of non-usage of instructional materials among teacher are dominantly among teachers who had spent considerable years of service in the teaching profession and are too confident in their abilities without considering the different learners in the class.

CONCLUSION

In conclusion, the study reveals that AST in Gombe State Secondary Schools exhibit apprehensions about the improvisation of instructional materials due to perceived time constraints and concerns over durability. Moreover, inadequate support from school administrators contributes to the challenge. Although satisfaction is derived from the production of instructional materials, the study highlights a deficiency in teachers' preparation for improvisation. The factors influencing instructional material improvisation encompass issues related to policy formulation, corruption in the education system, students' attitudes, insufficient government support, teachers' salaries, instructional material vandalism, and student overpopulation. Furthermore, the study finds that AST utilize instructional materials to a slight extent in their teaching practices. The lack of significant

differences in attitudes and perceptions between teachers and administrators suggests a consensus on the concerns surrounding instructional material improvisation and utilization within the context of agricultural science education in Gombe State Secondary Schools.

Recommendations

Based on the findings from the study, the following recommendations were made:

i. Recognizing that AST perceives improvisation as time-consuming and lacks preparedness for it, there is a need for comprehensive professional development programs. These programs could provide training on efficient improvisation techniques and strategies to help teachers overcome time constraints and enhance their skills in creating instructional materials.
ii. Addressing the factors influencing teachers' improvisation of instructional materials requires proactive policy measures. Education authorities and policymakers in Gombe State should collaborate to formulate and implement policies that combat corruption in the education system, promote efficient resource allocation, and address issues related to students' attitudes and overcrowding
iii. Efforts to enhance the attitude and utilization of instructional materials should be part of a long-term strategy. Continuous engagement, resource allocation, and monitoring of progress are essential for sustainable improvements in instructional material development and utilization in agricultural science education within Gombe State secondary schools.

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