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DETERMINING THE INSTRUCTIONAL MATERIALS TO STUDENTS' RATIO AMONG JUNIOR SECONDARY SCHOOLS IN GUMEL, MAIGATARI, GAGARAWA, SULE-TANKARKAR FEDERAL CONSTITUENCY OF JIGAWA STATE, NIGERIA.

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Abstract

This study aimed at analyzing instructional materials to students' ratio amng Junior Secondary Schools in Gumel, Maigatari, Gagarawa and Sule-Tankarkar federal constituency of Jigawa state, Nigeria. The objective of this study is to determine the current instructional materials to students' ratio, as well as exploring potential implication of the ratio on students' learning. The study adopted a survey research design which involves collection of data directly from a sample population, analyse and make conclusions on the bases of the data. The population of this study comprises all the Junior Secondary Schools in the four local governments of the constituency. However, stratified random sampling technique was adopted in selecting the sample for the study from the population. Data obtained in this study was analyzed using simple ratio statistical tool. Results obtained indicates that instructional materials (particularly audio & audio-visual materials) were general not available in the schools within the four local governments. Major variability in the availability of instructional materials were found between schools within the local government areas and between the local government areas. It is therefore recommended that government and other stakeholders in the education sector in the state should ensure that such materials are made available to schools so as to promote effective teaching and learning. Teacher should as well be trained to acquire appropriate skills on how to improvise such materials where necessary.

Keywords: Instructional Materials, Ratio, Junior Secondary School, Federal Constituency.

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1.0 INTRODUCTION

1.1 Background of the Study

This study determines the instructional materials to students' ratio among Junior Secondary Schools in Gumel, Maigatari, Gagarawa and Sule-Tankarkar federal constituency of Jigawa state. The constituency comprises of four local government areas which include Gumel, Maigatari, Sule-Tankarkar and Gagarawa. These four local governments constitute one of the federal constituencies in the state and are located in the Northwestern region of the state, with Hausa and Fulani as predominant tribes or ethnic groups. The economic activity of the people in these local governments is mainly subsistent farming, but parents do also send their children to school to acquire formal and Islamic education. The state (Jigawa) has an approximate population of 5.6 million people according to 2006 population census, and provision of education is considered as social responsibility of the state and the local governments. However, in spite of all the efforts by government to provide quality education to the citizens of the state, challenges of low students' enrolment (especially in rural areas), shortage of teachers, inadequate teaching and learning materials and out of school children (OOSC) are evident.

The significance of junior secondary schools (JSSs) in the educational landscape of this region cannot be overemphasized. This is because JSSs serve as a link between lower basic education schools (primary schools) and Senior Secondary Schools, thereby preparing the students for more advanced studies. They play a key role in the provision of accessible and quality education, development of essential skills and preparing students for future success.

The need for this study was born out of the believe that instructional materials play a crucial and significant role in making teaching-learning effective, interesting and meaningful. This section of the paper therefore provides an overview of the study which includes study background, statement of the problem as well as objectives for better understanding of the purpose and scope of the study.

1.2 Statement of the Problem

Teaching as a professional career is about imparting knowledge from the teacher to the learners through effective communication (instruction) and interactions between the two parties. This could be made more effective and transformative if content are logically selected and presented to the learners by the teacher through effective utilization of teaching and learning materials or otherwise called instructional materials. However, it was generally believed that most teachers and education managers in Jigawa state became reluctant in providing and utilizing instructional materials during lesson delivery, which may in turn affective teaching and learning. This assertion supported the findings of Tebabal and Kahssay, (2011) who reported that differences in learning outcomes were linked with instructional material used in teaching. Stephen, Adalikwu and Isaac (2013) also reported that Science Education is not achieving the desired objectives especially with high incidence of students' poor performance in chemistry and other science subjects at senior secondary certificate examination. This according to them was due to the failure of educational system to provide adequate and appropriate teaching-learning materials in order to improve academic performance of students. It was on the ground of this, this paper aimed to determine the instructional materials to students' ratio in Gumel, Maigatari, Gagarawa and Sule-Tankarkar federal constituencyso that their availability, adequacy, relevance, distribution and possible gaps could be identified and possible recommendation(s) for improvements could as well be provided.

1.3 Objectives of the Study

The main objective of this study is:

1. To determine the current students' to instructional materials ratio among Junior Secondary Schools in Gumel, Maigatari, Gagarawa and Sule-Tankarkar federal constituency.

This objective if achieved, would enable the research to provide valuable insights and recommendations for further improvements.

1.4 Research Question

The following research question was formulated for answer in this study:

1. What is the instructional materials to students' ratio among Junior Secondary Schools in Gumel, Maigatari, Sule-Tankakar and Gagarawa federal constituency of Jigawa state, Nigeria?

2.0 LITERATURE REVIEW

2.1 Definition and Types of Instructional Materials

Instructional materials (IM) are those essential things the teacher uses in the classroom during teaching and learning to make learning easier, interesting and meaningful. They are sourced/ developed, managed and maintain by the teacher for optimum benefit by both the teacher and the learners. Gangkwi, Nosiru and Adunola (2015) defined IM as contents that convey the essential knowledge and skills of a subject in the school curriculum through a medium or a combination of media for conveying information to a student. Instructional materials in Nigerian secondary schools encompass a wide range of resources used to facilitate teaching and learning (Magaji, Ado, Muhammad, Sani, & Auwalu 2024).Accordingly, Abdullahi (2012) defined instructional materials as all the resources a teacher uses to help him/her explain or elucidate the topic/content/subject to the learners so that the learner will be able to comprehend the topic fully.

According to Sunusi, (2023) instructional materials are classified into: realia (real materials), concrete materials, and abstract materials. Realia includes actual objects and things that can be touched and seen, while concrete materials refer to items that represent real things, such as models and charts. However, Gangkwi, Nosiru and Adunola (2015) classified instructional materials into: **concrete objects** which include objects and phenomena such as minerals and rocks, **representations of concrete objects and phenomena** example three-dimensional materials, **written descriptions** which includes scientific, scholarly, reference, and methodological teaching aids and **Technological instructional media** which are equipment for the transmission and assimilation of information recorded on film.

Within the context of this study, Instructional materials are classified on the bases of the sense organ they appeal to, namely: audio, visual and audio-visual materials. Audio IM are those materials or devices that appeal to the sense of hearing only, example of such materials include radio, tape recorder and record player. Visual materials are those materials that appeal to the sense of sight only. Examples include boards, models, charts, diagram, printed materials and the rest, while audio-visual are those that appeal to the senses of sight and hearing, example include television, video, and computers.

2.2 Importance of Instructional Materials

According to Gangkwai et al, 2015, learning by students occur primarily through interaction with people (teachers, peers, resource persons and parents) and instructional materials (textbooks, workbooks, internet, homework, projects, quizzes, and tests). Students learn by engaging in cognitive, affective and psychomotive processes (domains of learning) that are determined by relationship with people and instructional materials. Instructional materials help to improve students' knowledge, abilities, skills and assimilation. To concretized learning and make it more meaningful, instructional materials must be carefully selected and skilfully utilized by both the teacher and the learners. It is however very important for the teacher to note that while selecting resources for science teaching, such materials must be relevant to the topic and in different variety so that learner's interest and enthusiasm can be captured. Teachers must therefore be familiar with variety of teaching aids (instructional materials) and community resources that are within the immediate environment of the learner.

Moreover, Habu et al, (2024) were of the opinion that instructional materials enhances academic achievements of students in Nigerian secondary schools by providing a tangible context for abstract concepts, making learning more relatable and easier to understand. Olaniyan (2020) believed that instructional materials possess some inherent advantages that make them unique in Arabic studies teaching. According to him, instructional materials provide the teacher with interesting and compelling platforms for conveying information since they motivate learners to want to learn more and more. Also, by providing opportunities for private study and references, the learners' interest and curiosity are increasingly stimulated.

2.3 Previous Researches on Instructional Materials

Several researches have been conducted on the impact of instructional materials on students' academic achievement in basic and post basic schools in Nigeria and beyond. Gumbi, S and Bashar M, (2021), for example conducted a research on the availability and utilization of instructional materials for teaching social studies in public primary schools in Kware local government area, Sokoto state, Nigeria and discovered that the available instructional materials for teaching Social Studies in Primary Schools in Kware Local Government Area are Pictures, Charts, Maps, chalkboards and Flannel boards. Audio- and Audio-Visual materials were found to be absent. The absence of these materials according to them could create a barrier in the concept formation and information processing capabilities of a child. This study further revealed that Instructional materials for social studies instructions were available to a low extent in junior secondary schools in Enugu State, and that books are more available than other non-book materials. Similarly, Comport (2016) found that the majority of audio-visual instructional materials are not available and the available ones are rarely utilized for teaching and learning in public primary schools in FCT, Abuja.

Ann and Okoli (2021) in their study reported that eight out of the ten identified instructional materials were neither available nor adequate for the teaching of office skills in business studies at the secondary school's level in Delta State. However, findings from a study conducted by Onweazu and Michael (2021), indicated that there was no statistically significant difference in the use of instructional materials for teaching primary school pupils' Mathematics in Ilorin Metropolis based on gender, qualifications, teaching qualifications and teaching experience. Result of a study conducted by Gangkwi, Nosiru and Adunola (2015) also revealed that the availability and adequacy of most of the instructional materials and school facilities and instructional

materials were just a little. More so, utilization of most of the instructional materials and school facilities were also just minimal.

A study conducted by Muhaamd and Fayyaz (2011) on the effects of the availability and the use of instructional material on academic performance of students in Punjab (Pakistan) identified that there is a great deficiency in the availability and the use of instructional material. The study concluded that the less availability, misallocation and the deficiency in the use of instructional material lead to the wastage of resources, the less effectiveness of instructional material and lower students' academic performance. Nsengumuremyi and Hesbon (2021) discovered that visual aids are used at moderate level, at which 49.9% strongly agreed that instructional materials used are pre-determined and 47.2% strongly agreed that teaching methods are well prescribed in the lesson plan. Furthermore, a study by Habu et al (2024) revealed an average of 12.3 instructional materials per school, with the most common teacher qualification being BSc Ed. The mode of instructional material to students' ratio (IMSR) is 'Medium', indicating a prevalent standard across schools. Inferential statistics shows a significant association between IMSR and academic achievement, with a Chi-square value of 16.4 (p=0.002). A T-test indicates a significant difference in achievement between schools with low and high IMSR (T-value: -3.25, p=0.01). ANOVA and MANOVA results according to them further confirmed the significant effects of teacher qualifications and IMSR on academic performance. According to Magaji et al (2024) in a separate study reported an adequate average of 150 instructional material per school, with textbooks being the most common type. According to them, the median number of students per school stood at 350, reflecting a typical school size.

3.0METHODOLOGY

3.1 Research Design

This study adopted a survey research design which involves collection of information directly from a sample population through either interview, questionnaire, checklist, focus group or a combination of both. Instructional Material Availability Checklist (IMAC) was specifically adopted as a primary data collection method. The IMAC was designed to elicit responses from the respondents on the availability in terms of number of the materials for use in sampled schools. The data collected was organized, analysed and conclusions drawn on the bases of the results obtained. The results obtained were used as a generalization for the entire population.

3.2 Population, Sample and Sample Selection

The population of this study comprises of all the sixty eight (68) Junior Secondary Schools across the four (4) local government areas in the constituency. However, a stratified random sampling technique was used to select a sample for the study from the population. Each local government constitutes a stratum, making a total of four (4) strata. However, because of the size of the school population across the strata (68), which is seen to be not too large, 60% of the population of the schools was taken as a total sample size. This is in accordance with Ali in Olaniyan, (2020), who proposed that a sample size of at least 30% of the total population is appropriate. Hence, a total of 41 schools constitutes the sample size with a total students sample size of 9729 for this study.

Table 1: Teachers' Demographic Information across the Four LGAs

LGA	Number of Schools	Number of Teachers		Teacher Total	Qualification of Teachers			
		Male	Female		Degree	NCE	Diploma	Others
Gumel	16	94	50	149	77	62	03	02
Maigatari	12	64	05	69	35	31	01	01
Sule-Tankarkar	28	114	10	124	55	64	02	02
Gagarawa	12	44	05	49	26	22	00	01
TOTAL	**68**	**316**	**70**	**391**	**193**	**179**	**06**	**06**

Source: LGEAs of the various Local Government Authority

3.3 Instruments for Data Collection

Instructional Materials Availability Checklist (IMAC) was administered for the purpose of data collection in this study. Only one teacher was selected from each school to provide the required information from the IMAC in order to avoid duplication of response while filling-in the IMAC. However, a simple ratio statistic was used to analyze the data collected for this study.

4.0 DATA ANALYSIS AND RESULT

4.1 Introduction

This chapter presents the statistical analyses, and interpretations of the results of the data collected towards assessing the ratio of instructional materials to student numbers among Junior Secondary Schools in Gumel Emirate of Jigawa state. The actual number of students in each of the secondary schools of the four Local Government Areas of the Emirate were collected along with their levels or years of study. The data are presented along the level of study for each of the schools and the available instructional materials in line with the objective of the study and the research question.

4.2. Determination of instructional materials to students' ratio among Junior Secondary Schools in Gumel, Maigatari, Gagarawa and Sule-Tankarkar federal constituency of Jigawa state, Nigeria.

The main objective of the study is to determine the current instructional materials to students' ratio among Junior Secondary Schools in Gumel Emirate. This objective was investigated with the following research question: What is the instructional materials to students' ratio among Junior Secondary Schools in Gumel, Maigatari, Sule-Tankakar and Gagarawa federal constituency of Jigawa state, Nigeria? In determining the instructional materials to students' ratio among Junior Secondary Schools within the constituency, schools in each of the local government areas were assessed independently on the number of students per level of study and their total along with Audio Instructional Materials (AIM), Visual Instructional Materials (VIM) Audio-Visual Instructional Materials (AVIM) along with total of Instructional Materials (Total IM). Each of the four local government areas is assessed by the number of Junior Secondary Schools with the ratios of the available instructional materials indicated in tables respectively along with the aggregate for all the Local government areas below:

Table 2: Available instructional materials to students' ratio among Junior Secondary Schools in Gumel local government area of the constituency.

Variables	Sch1	Sch2	Sch3	Sch4	Sch5	Sch6	Sch7	Sch8	Sch9	Sch10
JSS I	146	493	38	15	171	205	70	28	68	260
JSS II	110	437	274	27	214	285	25	48	55	340
JSS III	148	318	21	32	283	245	12	151	55	390
Total	404	1248	333	74	668	735	107	227	178	990
AIM	0	0	0	0	0	0	0	0	0	8
VIM	40	10	100	7	40	18	1	1	1	70
AVIM	21	0	0	0	0	0	0	0	0	2
AIM ratio	0:1	0:1	0:1	0:1	0:1	0:1	0:1	0:1	0:1	124:1
VIM ratio	10:1	125:1	3:1	11:1	17:1	41:1	0:1	0:1	0:1	14:1
AVIM ratio	19:1	0:1	0:1	0:1	0:1	0:1	0:1	0:1	0:1	0:1

Table 2 revealed that most of the schools in the first local government area of the Emirate did not have audio instructional materials (AIM) and Audio-visual Instructional Materials (AVIM). The only school that had audio instructional materials was school 10 with 8 units of audio instructional materials. The population of the schools were 404, 1248, 333, 74, 668, 735, 107, 227, 178 and 990 for schools 1 to 10 respectively. The number of Visual Instructional Materials (VIM) was 40, 10, 100, 7, 40, 18, 0, 0, 0 and 70 for the schools respectively. The first school had 21 and 2 for school 10. The other eight schools did not have Audio-Visual Instructional Materials (AVIM). For the ratio of instructional materials to students, school 1 to school 9 had a 0:1 ratio while school 10 had 124 students to 1 of Audiovisual Instructional Materials (AVIM). A ratio of 10 students to 1 (10:1) for Visual instructional materials (VIM) was obtained for school 1 while school 2 had 125 students to 1 (125:1) and school 3, had 3 students to 1 (3:1). The ratio obtained for school 4 was 11 students to 1 (11:1) of Visual instructional materials (VIM). For School 5, 6, 7 8, 9 and 10, the students to instructional materials ratio for stands of Visual instructional materials were 17:1, 41:1, 0:1, 0:1, 0:1 and 14:1 respectively. The observation here revealed that Visual instructional materials (VIM) were generally available to most of the schools while some of the schools did not have any of the three, Audio, Visual and Audio-Visual instructional materials for teaching and learning in the local government area.

A total of seven schools were involved in the second local government area of the Emirate. Table 3 showed the students-instructional materials ratio for teaching and learning in the Junior Secondary Schools within the Local government area.

Table 3: Available instructional materials to students' ratio among Junior Secondary Schools in Maigatari local government area of the constituency.

Variables	Sch1	Sch2	Sch3	Sch4	Sch5	Sch6	Sch7
JSS I	83	19	169	29	205	50	25
JSS II	23	80	268	35	152	54	20
JSS III	33	88	338	48	127	34	22
Total	139	187	775	112	484	138	67
AIM	0	0	0	0	0	0	2
VIM	2	2	0	0	0	0	0
AVIM	0	0	0	0	0	0	0
AIM ratio	0:1	0:1	0:1	0:1	0:1	0:1	34:1
VIM ratio	70:1	94:1	0:1	0:1	0:1	0:1	0:1
AVIM ratio	0:1	0:1	0:1	0:1	0:1	0:1	0:1

The students-instructional materials ratio for teaching and learning in the Junior Secondary Schools within the second local government area as most of the selected (Audio, Visual and Audio-Visual) instructional materials were not available. Apart from Visual Instructional Materials (VIM) which were available in school 1 and 2, none of the other schools had either of the three. Table 3 showed that a students to Visual Instructional Materials ratio was 70:1 while in school 2 it was 94:1. Other schools did not have the instructional materials.
Table 4 showed the students to instructional materials ratio for Junior Secondary Schools in the third local government area of the Emirate.

Table 4: Available instructional materials to students' ratio among Junior Secondary Schools in Gagarawa local government area of the constituency.

Variables	Sch1	Sch2	Sch3	Sch4	Sch5	Sch6	Sch7
JSS I	44	26	34	84	38	83	102
JSS II	40	32	22	58	49	42	110
JSS III	43	25	44	51	58	117	56
Total	127	83	100	193	145	242	212
AIM	0	6	0	0	0	0	0
VIM	0	2	40	55	260	300	40
AVIM	0	0	0	0	0	2	0
AIM ratio	0:1	14:1	0:1	0:1	0:1	0:1	0:1
VIM ratio	0:1	42:1	3:1	4:1	1:2	1:1	5:1
AVIM ratio	0:1	0:1	0:1	0:1	0:1	121:1	0:1

Table 4 revealed that the instructional materials (Audio, Visual and Audio-Visual) were really not available in most Junior Secondary Schools in the third local government area of the constituency. As indicated in the table, only school 2 had 14 students to 1 Audio instructional materials. School 1, 3, 4 5,6 and 7 did not have any. School 2 had 42 students to 1 Visual instructional materials while school 1,3, 4, 5, 6 and 7 had 0,3,4,1,1,5 students to 1 Visual instructional materials respectively. Only school 6 had a 121:1 students to Audio-Visual instructional materials. The rest of the schools did not have Audio-Visual instructional materials for teaching and learning.

The fourth local government area of the constituency had a total sample of seventeen Junior Secondary Schools. Table 5 showed the students-Instructional materials ratio available in the schools.

Table 5: Available instructional materials to students' ratio among Junior Secondary Schools in Sule-Tankarkar local government area of the constituency.

Schools	JSSI	JSSII	JSSIII	Total	AIM	VIM	AVIM	AIM ratio	VIM ratio	AVIM ratio
Sc1	209	216	175	600	0	210	2	0:1	3:1	0:1
Sc2	102	105	107	314	0	110	0	0:1	3:1	0:1
Sc3	21	20	22	63	0	100	0	0:1	0:1	0:1
Sc4	103	96	99	298	0	240	0	0:1	0:1	0:1
Sc5	53	82	101	135	0	35	0	0:1	4:1	0:1
Sc6	52	61	101	113	0	24	0	0:1	5:1	0:1
Sc7	104	89	79	272	0	12	0	0:1	23:1	0:1
Sc8	52	46	60	158	0	6	0	0:1	26:1	0:1
Sc9	14	23	26	63	0	150	0	0:1	0:1	0:1
Sc10	20	18	16	54	0	125	0	0:1	0:1	0:1
Sc11	24	25	79	49	0	10	0	0:1	5:1	0:1
Sc12	34	30	26	90	0	70	0	0:1	0:1	0:1
Sc13	34	26	38	98	0	150	0	0:1	0:1	0:1
Sc14	74	65	68	207	0	207	0	0:1	0:1	0:1
Sc15	31	20	71	51	0	20	0	0:1	3:1	0:1
Sc16	20	25	15	60	0	338	0	0:1	0:1	0:1
Sc17	53	37	37	127	0	49	0	0:1	3:1	0:1

Table 5 revealed that only Visual instructional materials (VIM) were available in most of the Junior Secondary Schools in the fourth local government area of the constituency. For all the Junior Secondary Schools, there were no Audio instructional materials and Audio-Visual instructional materials. But a students to Visual instructional materials ratio of 3:1 was obtained for School 1 and School 2. For School 3 and School 4, there were no Visual instructional materials. But school 5, 6, 7 and 8 had a students to Visual instructional materials ratio of 4:1, 5:1, 23:1 and 26:1 respectively. For School 9 and School 10, no Visual instructional materials. School 11 had a students to Visual instructional materials ratio of 5:1 while school 12, school 13 and school14 had no Visual instructional materials. But school 15 had a students to Visual instructional materials ratio of 3:1 along with School 17. School 16 had no Visual instructional materials.

A summary of the students to Instructional material ratio for all the schools per each of the local government areas in the constituency is presented in Table 6.

Table 6: Available instructional materials to students' ratio among Junior Secondary Schools in four local government areas of the constituency.

Variables	LGA1	LGA2	LGA3	LGA4	LGA Total
JSS I	1494	497	411	1000	3402
JSS II	1541	400	353	984	3278
JSS III	1474	475	338	768	3055
Total	4503	1372	1102	2752	9729
AIM	8	2	6	1	17
VIM	915	4	697	1856	3472
AVIM	23	1	3	4	31
AIM ratio	563:1	686:1	184:1	2752:1	572:1
VIM ratio	5:1	343:1	2:1	2:1	3:1
AVIM ratio	196:1	1372:1	367:1	688:1	314:1

As observed in Table 6, the Junior Secondary Schools in the first local government area of the constituency had a students to Audio instructional materials of 563 to 1 (563:1), 5:1 for Visual instructional materials and 196:1 ratio of Audio-Visual instructional materials. The Junior Secondary Schools in the Second Local government area, the students to instructional materials ratios were 686:1 for Audio instructional materials, 343:1 for Visual instructional materials and 1372:1 for Audio-Visual instructional materials. For the third local government area, the ratios were 184:1 for Audio instructional materials, 2:1 for Visual instructional materials and 367:1 for Audio-Visual instructional materials. The students to instructional materials were relatively higher in the fourth local government area with students to instructional material of 2752:1 for Audio instructional materials, 2:1 for Visual instructional materials and 688:1 for Audio-Visual instructional materials. The total aggregate for the four local governments' students to instructional material ratios were 572:1 for Audio instructional materials, 3:1 for Visual instructional materials and 314:1 for Audio-Visual instructional materials.

DISCUSSION OF FINDINGS

5.1 Introduction

The findings from the investigation on instructional materials to students' ratio among Junior Secondary Schools in Gumel, Maigatari, Sule-Tankakar and Gagarawa federal constituency of Jigawa state, in the study were discussed in this chapter in line with the objectives and research question in this chapter.

5.2 Discussion

In determining the instructional materials to students' ratio among Junior Secondary Schools within the constituency, available Audio Instructional Materials (AIM), Visual Instructional Materials (VIM) and Audio-Visual Instructional Materials (AVIM) were used as indices of the investigation. Findings from the study revealed major variability in the students to Instructional Materials ratio among Junior Secondary Schools within each of the Local government areas and between the four different local government areas in the constituency. For schools in the first local government of the constituency, findings of this study revealed that, most of the schoolsdid not have audio instructional materials and Audiovisual Instructional Materials. The only school that had audio instructional materials was school 10 with 8 units of audio instructional materials. The students' population of the schools were relatively high. But the number of available instructional materials were low with a ratio of

instructional materials to students, school 1 to school 9 as 0:1 while school 10 had 124 students to 1 stands of Audiovisual Instructional Materials. A ratio of 10 students to 1 (10:1) for stands Visual instructional materials was obtained for school 1 while school 2 had 125 students to 1 (125:1) and school 3, had 3 students to 1 (3:1). The study revealed that Visual instructional materials were generally available to most of the schools while some of the schools did not have any of the three, Audio, Visual and Audio-Visual instructional materials for teaching and learning in the local government area. The finding here supported findings from previous study by Ann and Okoli (2021) who in their study reported that eight out of the ten identified instructional materials were neither available nor adequate for the teaching of office skills in business studies at the secondary school's level in Delta State.

The number of Junior Secondary Schools in the second local government area of the Emirate were relatively low as compared with the numbers found in the First. The findings of the study revealed that students-instructional materials ratio for teaching and learning in the Junior Secondary Schools were generally not available. Apart from Visual Instructional Materials which were available in school 1 and 2, none of the other schools had any of the three selected Instructional Materials. Only school 1 and two that students to Visual Instructional Materials ratio was 70:1 while in school 2 it was 94:1. Other schools did not have the instructional materials.

The findings of the study revealed that instructional materials (Audio, Visual and Audio-Visual) were really not available in most of the Junior Secondary Schools of the third local government area of the Emirate. Only school 6 had a 121:1 students to Audio-Visual instructional materials ratio. The rest of the schools did not have Audio-Visual instructional materials for teaching and learning. This finding agreed with previous findings by Comport (2016) who found that the majority of audio-visual instructional materials are not available and the available ones are rarely utilized for teaching and learning in public primary schools in FCT, Abuja.

The fourth local government area of the Emirate had a total number of seventeen Junior Secondary Schools. The Local Government had the highest number of Junior Secondary Schools. The study revealed that only Visual instructional materials were available to most Junior Secondary Schools in the local government area. The study revealed that majority of the Junior Secondary Schools there, were having no Audio instructional materials and no Audio-Visual instructional materials. But a students to Visual instructional materials ratio of 3:1 was obtained for School 1 and School 2. For School 3 and School 4, there were no Visual instructional materials. Schools 5, 6, 7 and 8 had a students to Visual instructional materials ratio of 4:1, 5:1, 23:1 and 26:1 respectively. School 9 and School 10 had no Visual instructional materials. School 11 had a students to Visual instructional materials ratio of 5:1 while school 12, school 13 and school14 had no Visual instructional materials. But school 15 had a Visual instructional materials ratio of 3:1 along with School 17. School 16 had no Visual instructional materials. The finding revealed that Junior Secondary Schools in the local government area had relatively low number of the available instructional materials.

Findings of the aggregate students to instructional materials in the local government areas within the constituency revealed very high students to instructional materials ratio. It was found that students to Audio instructional materials was 563 to 1 (563:1), while that of Visual instructional materials was 5:1and 196:1 ratio was obtained for Audio-Visual instructional materials. The study found that Junior Secondary Schools in the Second Local government area had students to instructional materials ratios of 686:1 for Audio instructional materials, 343:1 for Visual instructional materials and 1372:1 for Audio-Visual instructional materials. In the third local government area, findings revealed ratios of 184:1 for Audio instructional

materials, 2:1 for Visual instructional materials and 367:1 for Audio-Visual instructional materials. The finding of the study revealed that students to instructional materials ratios were relatively higher in the fourth local government area. The ratio of students to instructional material was 2752:1 for Audio instructional materials, 2:1 for Visual instructional materials and 688:1 for Audio-Visual instructional materials while the total aggregate was 572:1 for Audio instructional materials, 3:1 for Visual instructional materials and 314:1 for Audio-Visual instructional materials. The findings here are in support of previous findings by Gumbi and Bashar (2021), who conducted a research on the availability and utilization of instructional materials for teaching social studies in public primary schools of Kware local government area, Sokoto state, Nigeria and reported that the available instructional materials for teaching Social Studies in Primary Schools in Kware Local Government Area are Pictures, Charts, Maps, chalkboards and Flannel boards. Audio- and Audio-Visual materials were found to be inadequate.

5.3 Implication and recommendations for the findings

This study found that instructional materials were general not available in Junior Secondary School within Gumel, Maigatari, Gagarawa and Sule-Tankarkar federal constituency of Jigawa state. Major variability in the availability of instructional materials were found between schools within the local government areas and between the local government areas. These findings could be useful to the state ministries of educational and its Agencies for policy formulation in provision and use of instructional materials in the Junior Secondary Schools within the constituency and other schools in the state where condition is found to be the same. Based on these findings, it is therefore recommended that government at all levels in the state, as well as stakeholders should ensure adequate provision and utilization of the instructional materials (especially audio and audio-visual) in schools for optimum benefits. Teachers should also be encouraged to acquire the necessary skills on how to improvise such materials where necessary.

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