

Effects of Instructional Materials on Teaching of Civic Education to Pupils with Hearing Impairment in MTC, Jos, Plateau State

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Abstract. The study reported upon in this article was conducted to examine the effects of instructional materials on academic performance levels of pupils with hearing impairment in Model Teaching College, Jos in the subject area of Civic Education. Two hypotheses were formulated and tested in the study, using a pretest/posttest research model. Twenty learners were randomly sampled and used for the study. A modified, teacher-constructed test kit was used for collection of data. A simple control/experimental test design, with ten respondents in each group was utilized, in administering the test. The data generated was synthesized and analyzed using t-test at a significance level of 5%. The results of the data analysis necessitated the eventual negation (rejection) of the major study hypothesis that there is no significance difference between the use of instructional materials and the performance of pupils with hearing impairment in Civic Education instruction. At end of the study, it proffered a number of recommendations which included that teachers should be subjected to be encouraged to make more efficient use of instructional materials during teaching processes in schools. It also recommended the need for governments to facilitate the provision of more fully equipped resources rooms, with sufficient number of teaching materials that can be used to improve the current quality of civic education lessons. Finally, the study suggested that further studies need to be carried out on newer, more innovative methods for teaching civic education to pupils with profound hearing loss.

Keywords: Civic education; Hearing impairment; Instructional Materials;

1. Introduction

The organ utilized for human hearing is commonly known to be indispensable for ensuring the overall wellbeing of individuals in society. It is in this light that the ability to hear and to function effectively in a predominantly verbal environment is of immense significance to the attainment of success of learning and teaching processes carried out in the average schools setting. These processes in turn are dependent on active listening and verbal interactions between teachers and pupils/students. Thus, incidences of hearing loss which sometimes afflict pupils can adversely affect and impede the expected success of learning and teaching efforts of teachers and pupils alike, not only in civic education but also in other subject areas.

It is imperative that sustained efforts must be made by school educators and administrators alike to harness instructional materials to help address the huge challenges faced by hearing impaired individuals for them to enjoy full educational access in the Nigerian educational system. It needs to be pointed out that the limited use of appropriate instructional materials in schools is not a new phenomenon to the teaching profession in Nigeria. Moreover, instructional materials usage in civic education class for the hearing impaired is a painstaking exercise. While the use of instructional materials with normal, 'non-hearing impaired' learners may require much less effort on the part of the average classroom teacher, the same cannot be said for the use of similar materials by the teacher of hearing-impaired pupils and students in Nigerian schools. When instructional materials are used appropriately by teachers, whether it is with normal, non-hearing-impaired or hearing-impaired individuals, such usage can serve to stimulate and to

create a conducive atmosphere for teaching and learning of all categories of school-going children.

1.1 Statement of the Problem

The main point of emphasis in carrying out this study is to investigate and document the degree of availability as well as adequacy of instructional materials investigated and observed in classroom use for promoting and enhancing the teaching and learning of civic education lessons by learners with hearing impairment. It is against this background that the presentation in this article has attempted to highlight the results and findings that emerged from a recent study carried out to assess and determine the effect of instructional materials on teaching Civic Education to selected pupils with hearing impairment. Pupils with hearing impairment have been observed to experience difficulty in benefiting from teaching and learning and are not being supported by the use of instructional materials. It is for this general reason that the authors of this article chose to conduct the study on effect of instructional materials on academic performance of civic education among pupils with hearing impairment in Model Teaching College, Jos South Local Government Area, in Plateau State, Nigeria.

It is clear from casual observation of educational practice in Jos, Plateau State in particular that teachers are not making judicious use of instructional materials in order to enhance and facilitates teaching and learning in different subjects specifically, in teaching civic education as a subject area. From a recent preliminary field survey carried out by the present researchers, some teachers have been observed to hurriedly issue verbal instructions to pupils with obvious hearing impairment, without bothering to take into consideration the obvious fact that they were dealing with a specific category of learners who have special educational needs. These needs could have been partially addressed (or remedied) through the use of teacher-improvised instructional materials, especially materials that capitalize on the visual, touch or smell senses of the pupils. This failure on the part of the teachers observed to incorporate the use of improvised instructional materials obviously negates the essence of one of the teaching/curriculum objectives outlined in the national curriculum of NERDC (2013). The contents of this document emphasize the use of instructional materials in schools from nursery to secondary school levels in Nigeria.

1.2 Purpose of the Study

The study being reported upon in the present article was designed to examine the effects of instructional materials on teaching Civic Education to students with hearing impairment in MTC Jos South LGA. Specifically, the study tried to (a) find out the level of performance of students with hearing impairment in Civic Education in MTC Jos, without the use of instructional materials; (b) to examine whether the use of teaching materials enhance instructional strategy in teaching of Civic Education as a classroom subject among students with hearing impairment in MTC Jos South LGA.

1.3 Research Questions

The study formulated two main questions for investigation, namely,

- What is the level of performance of students with hearing impairment in Civic Education without the use of instructional materials in MTC Jos?;
- To what extent do instructional materials enhance teaching and learning of Civic Education as a classroom subject in MTC Jos?

1.4 Hypotheses

The study formulated two hypotheses for empirical testing, listed as follows:

- There is no significant relationship between the availability of instructional materials and level of positive performance of pupils with hearing impairment in Civic Education of MTC Jos South LGA;
- There is no significant relationship between the use of instructional materials and the positive performance of pupils with hearing impairment in Civic Education as a classroom subject in MTC Jos South LGA?

1.5 Scope of the Study

The study was conducted in MTC Jos South LGA which includes special needs pupils with hearing impairment, The studies was strictly limited to MTC Jos. Schools like as Ilmaiya Model School and Dominion Integrated School Jos North which also host a significant number of special needs learners in Jos North were not included in the study.

2. Concept of Hearing Impairment

Hearing impairment is an umbrella term which refers to a condition whereby there is a decrease in an

individual's ability to hear and discriminate sound (Babudoh, 2008). The official definition provided by the Individuals with Disabilities Education Act (IDEA 2013) describes the term, 'hearing impairment' as "...an impairment in hearing, whether permanent or fluctuating, that adversely affect a child's educational performance but is not included under the definition of "Deafness". In one sense, being able to understand and adequately define the clinical (or physiological) condition of deafness is a necessary key to understanding what sort of disabilities are captured under the specific label 'hearing impairment'. A hearing loss above 90dB is generally considered deafness, which means that a hearing loss below 90dBs is classified as hearing impairment.

The National Dissemination Centre for Children with Disabilities (NIATAY) explains that hearing loss falls into four categories: conductive, sensori-neural, mixed and central. These identify the location in the human body in which the hearing impairment occur. Hearing aids and other sound amplifying assistive technologies often work for students with conductive hearing loss, as their impairments stem the outer or middle ear, such does not hold true with sensori-neural, mixed and central hearing losses, as these impairments stem from the inner ear, the central nervous system or a combination of the two. In generic terms, hearing loss is often perceived as being of different categories, ranging from slight, mild, moderate, severe or profound, depending on how well an individual is able to hear the fundamental acoustic frequencies commonly associated with human speech and the varying organizational patterns which are known to characterize different human languages in the world today.

Expert physiologists and audiologists also generally agree that there are two broad types of hearing impairments, namely: congenital and adventitious hearing loss. Congenital hearing loss usually occurs when an individual is either born with a hearing impairment or he becomes hearing impaired before meaningful language is acquired. This condition is often known as pre-lingual hearing impairment. Individuals with congenital hearing impairment usually experience problems in acquiring speech because speech is primarily learned through audition and reproduction of what is heard. Adventitious hearing loss, on the other hand, refers to a physiological condition whereby an individual becomes hearing impaired after having acquired speech capability in earlier life. This type of hearing loss is often known as post-lingual hearing

impairment, happening from 3 years of age up to adulthood.

Hearing impairment can also be defined and classified in other ways. For example, it can be classified under the categories of Deafness and Hard of hearing. The first category, deafness, can refer to situation whereby an individual's hearing is disabled to an extent that precludes the perception and understanding of speech sound through the ear alone with or without amplification. Those in this category have a severe (66 – 80dB) or a profound (90dB and above) hearing loss. The second category, hard of hearing, refers to a condition whereby an individual's hearing is disabled to an extent that makes the understanding of speech difficult through the ear alone with or without amplifications. Under this category are people with mild (26- 45dB) and Moderate (46-65 dB) hearing loss (Berke, 2017).

An additional scheme for categorizing hearing loss also distinguishes between Neural and Sensory sources of losses, depending on the biological site which is identified as responsible for bringing about such hearing loss. Sensory-hearing loss results from malfunctioning or damage done to the cochlea, a delicate part of the inner structure of the human ear. The inner ear can become damaged through the excessive use (or misuse of) drugs, exposure to excessive noise levels, or chronic ear disease. Neural hearing loss, on the other hand, often results from damage done primarily to the auditory nerve-endings also located in the inner structure of the human ear. In some very extreme cases, it may even be possible for both sensory and neural hearing impairments to occur at the same time, when the delicate hair cell structure in the inner ear is damaged. If this occurs, incoming air vibrations and neural impulses associated with the human sense of hearing may fail to be adequately transmitted to the brain. This type of hearing loss is fatal and irreversible (permanent).

The challenges associated with hearing impairment in the educational setting essentially revolve around difficulties in carrying out some classroom –related tasks, which include but not limited to, understanding basic distinctions of grammar, spelling and vocabulary in language use; taking notes while listening to lectures; participation in normal classroom discussions; formulating and presenting oral reports, etc.

3. Concept and Types of Instructional Materials

The concept of instructional materials has been interchangeably used in education with concepts such as teaching aids and teaching apparatus, instructional media and educational technology. However, instructional materials are tools, instrument and resources used in educational lessons to facilitate the achievement of stated objectives. Instructional materials are tools locally made or imported that help to facilitate teaching-learning process (Abdullahi, 2010). They also enable both teachers and students to participate actively and effectively in lesson sessions. They give room for acquisition of skills and knowledge and development of self-confidence and self-actualization. Aina (2010) assert that instructional materials are those materials or resources use in teaching exercise to promote greater understanding to the learning experience. According to her, they are used to provide the richest possible learning environment which helps the teachers and learners to achieve specific objectives. They also assist the teachers to communicate more effectively and the learners to learn more meaningful and permanently. They help the teacher to promote teaching and learning activity. According to Abiferin (2015), instructional materials can be categorized into three types, namely, (a) remodeled type which teachers or students can create by modeling (or creating an exact replicate) of a damaged instructional material; (b) improvised type which may be hurriedly manufactured by teachers or students in the absence of the actual one that could have been used and; (c) commercial type which are produced by instructional media experts for distribution on a commercial scale. Instructional materials provide the core information that students will experience, learn and apply during teaching and learning. With instructional materials, the student is able to feel with his hands or other senses in a practical sense what he needs to learn which often times become permanently entrenched in the learner allowing him to apply such knowledge in similar situations for his benefit and that of others (University of Wisconsin, Continuing Studies Learning Design Development and Innovation, 2021). Consequently instructional materials need to be carefully selected, planned, organized, refined and designed so as to achieve maximum effects while considering the breadth and depth of content to be taught so that teaching and learning can be optimized. (University of Wisconsin, Continuing Studies Learning Design Development and Innovation, 2021).

Accordingly, the term instructional materials shall include printed materials and multimedia materials and shall include materials used in the classroom and

available in libraries (Urban Dale Community School District, 2021). They represent whatever materials are used in the process of instructions and indicate a systematic way of designing, carrying out and employing human and non-human resources to bring out more meaningful instructions (Remillard & Heck, 2014). In this way, the teacher becomes more effective and positively influences students in achieving targeted and set objectives of teaching and learning thereby ensuring that learning outcomes are guaranteed and can subsequently be transferred to other similar situations.

4. Role of Instructional Materials in the teaching of Civic Education

According to Longpoe (2015), Civic Education is a subject that deals with rules, and conducts of man in a civilized environment, this is to say rules and regulations enacted by the law and traditional institutions as well as sanctions for the violators. It is indeed a sort of life styles and concentration on human interaction in an environment whether politically, socially, economically technologically and psychological for harmonious living. Civic education is value laden and value free education being imbibed or dispensed inside and outside the classroom for the purpose of producing prospective citizens for the society. Civics education deals with the rights and obligations of citizens in a society. It is the deliberate education of pupils or students to develop citizenship and democratic values so as to enable them participate fully and actively in the development of their society. It is directed at developing the right kinds of behavior which will enable the individual to develop the right kinds of skills values and attitudes to be able to function within the democratic space while working towards the development of his society (Winthrop, 2020). Citizenship education uses the theoretical, political and practical aspects of citizenship and includes the rights and duties which individuals are expected to perform as functioning members of a society so as to promote, protect and defend and develop their societies. In this regard, individuals are transformed into patriotic citizens which is essential for the sustenance of democracy and democratic forms of government (Branson, 1998).

Instructional materials are significant in educational circles because they contribute towards improving students' inherent natural abilities, knowledge and skills to efficiently assimilate information which they need to maximize their overall learning experiences within the school system. Instructional materials provide the necessary physical media through which

the intents of the curriculum are experienced. Some people tend to learn better through the stimulation of one or more of their respective sensory abilities. Thus, the senses of sight, hearing, touch, smell and taste exert varying degree of dominance in the process of acquiring knowledge in the lives of different individuals. Instructional materials arouse learner's interest. Instructors need to be aware that when a learner's interest is stimulated through one of his sensory organs, this interest ought to be further sustained by the use of appropriate educational instructional materials. Teacher needs to continuously seek to create realistic problem solving activities for learners to engage in, in order to further sustain their interest to learn new things and experiment with new ideas.

For instance, when a classroom teacher takes his/her students out for field work, their interest will likely be stimulated. Instructional materials are used as checks to the teacher's knowledge and means of transmission. Therefore, for the intended learning to take place, the teacher must communicate effectively with the learner. According to Sasson (2009), the quantity of materials depends on the number of learners using them, organization of the materials, group arrangement, time management, and records management. For example, to ensure the availability and adequacy of instructional materials, a typical science lesson should be designed to be learner-centered, instead of teacher-centered, in order to adequately motivate young learners of school-going ages. This is because such children get the opportunities to personally engage in innovative activities, utilizing available instructional materials, instead of merely listening passively to verbal explanations by teachers in the classroom setting.

5. The Use of Instructional Materials Academic Achievement

Academic achievement refers to a successful accomplishment of performance in particular subject are. It is indicated by grades, marks and scores of descriptive commentaries. Academic performance also refers to how students deal with studies and how they cope with or accomplish different task given by their teachers in a fixed time or academic year (Mberekpe 2013) Fajola (2008), used the notion of

7. Method of Data Analysis

The data collected in the course of the main study was analyzed using t-test for independent samples at a significance level of 0.05. The analytical formulas applied for synthesis of the data derived in the study was the following:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1^2}{N_1} + \frac{S_2^2}{N_2}}}$$

Where: \bar{X}_1 represented the mean score of high group

academic self-concept in referring to individuals' knowledge and perception about themselves in academic achievements, and convictions that can successfully perform a given academic task at designated levels. According to Bichi (2009), inadequate equipment and facilities, lack of opportunity for the child to have direct experience with learning materials and inappropriate use of teaching strategies are major causes of poor academic performance.

6. Research Methodology and Procedures

The research design employed for the study was quasi-experimental, incorporating the pretest/posttest model. Twenty (20) pupils with hearing impairment in primary six (6) were sampled and used for the study. The main instrument used for data collection was a modified, teacher-designed test kit containing ten (10) multiple choice objective items which covers some basic aspects of Civic Education. Before the conduct of the main study, a pilot test was conducted in order to assess the reliability of the test instrument through 'estimate stability' and the data analysis was conducted using Cronch-Bach Alpha method, the correlation coefficient obtained was 0.7. The instrument used during both the pilot and main phases of the study was subjected to validity and reliability judgment of test and measurement experts in order to ascertain the level to which the contents of the test instrument would measure what purports to measure. The main study test kit, remodeled after the conduct of pilot test, was administered and graded at both the pretest and post-test phases of the study. A simple purposive technique was adopted for selecting the respondents who took part in the study, matching an equal number of male respondents against female respondents. The study respondents were thereafter divided into two equally mixed groups (control and experimental) for the pretest and posttest testing phases of the study. Members of the control group were exposed to classroom instruction without the use of instructional aids. After an interval of two weeks, members of the experimental group were taught with treatment (instructional materials) and a test was administered at the end of each teaching and learning of Civic Education subject.

\bar{X}_2 represented the mean score of high group
 S_1 and S_2 = represented the two sample variances
 N_1 and N_2 = represented the two sample sizes
 Level of significant or alpha = .05
 Degree of freedom (df) = ($N_1 + N_2 - 2$).

The data generated from the synthesis, analysis and resultant t-test computations in the study are summarized and presented in respective tables and discussion sections below.

Table 1: Distributions of Pupils According To Gender

Pupils	No. of Respondents	Parentage
Male	10	50%
Female	10	50%
Total	20	100%

The data in Table 1 above show that 10 pupils (representing 50% of the study respondents) were male and another 10 pupils (50% of the respondents) were females. Indication from gender analysis is that the percentage of male is equal with their female folks with hearing impairment were selected for the study.

Table 2: Distributions of Pupils According To Class

Class	No. of Respondents	Parentage
Primary 6	20	100%
Total	20	100%

Table 2 above; show that 20 which is 100% of the respondents with hearing impairment were drawn from Primary 6 used and for the study.

Analysis of Hypotheses

Hypothesis One: There is no significant relationship between the availability of instructional materials and the level of positive performance of pupils with hearing impairment in Civic Education of MTC Jos.

Table 3: Pretest Result from Civic Education Control Group.

Students	Total
Child 1- Male	50
Child 2- Female	60
Child 3- Male	40
Child 4- Female	20
Child 5- Male	50
Child 6- Female	30
Child 7- Male	60
Child 8- Female	40
Total Mean	$\bar{x} = \frac{\sum x}{n} = \frac{350}{10} = 43.8$

Summary of Table 3 above:

Variance (S) of the 8 pupils as computed on a rough paper is = 11.2
 Number of students (n) = 8
 Mean (X) = 43.8

Table 4: Posttest Results from Civic Education Control Group.

Students	Total
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Child 1- Female	70
Child 2- Male	70
Child 3- Female	50
Child 4- Male	70
Child 5- Female	60
Child 6- Male	60
Child 7- Female	90
Child 8- Male	70
Child 9- Female	80
Child 10- Male	70
Child 11- Female	60
Child 12- Male	70
Total Mean	$\bar{x} = \frac{\sum x}{n} = \frac{820}{12} = 68.3$

Summary of Table 4 above:

Variance (S) of the 12 pupils as computed on a rough paper is = 10.6

Number of students (n) = 12

Mean (X) = 68.3

The data for testing Hypothesis One was drawn from the data of pretest and posttest, and was tested using t-test at 0.05 significance level. The following results were obtained as shown in Table 5 below provides details of the results obtained statistical computations of both pretest and posttest carried out on the study respondents.

Table 5: Summary of Hypotheses One:

Group	Number of pupils.	dfSignif. Level	Calc Value	Crit. Value
Pretest (Control group)	8	18	0.05	16
Posttest (Experimental group)	12			2.10

8. Discussion and Interpretation of the Study Results

The figures in Table 5 showed that pretest and posttest which involve 20 elements all together. The degree of freedom obtained from both tests was 18 at the significance level of 0.05 (or 5%). Similarly, the calculated value from t-test was 16 and critical value from tabulation was 2.10. These results provided the study with sufficient statistical evidence to reject the hypothesis which states that *there is no significant relationship between the availability of instructional materials and the level of positive performance of pupils with hearing impairment in Civic Education of MTC Jos*. The rejection of Hypotheses One lead to the reverse acceptance of the hypothesis which states that there is a significance difference between the use of instructional materials and performance of pupils with hearing impairment in Civic Education in MTC Jos.

It is clear from the t-test results obtained in respect of Hypothesis One provided above lead to the empirical conclusion that there is significance relationship existing between the use of instructional materials and academic performance of pupils with hearing impairment in MTC Jos. The decision that leads to the rejection of Hypothesis One is based on the

computed result which revealed a calculated t-test value of 16, while the critical value standing at 2.10 at a significance level of 0.5. This test outcome serves to corroborate a similar research finding reported in Aiyaleso (2014), where it was established that one of the most valuable decision which need to be taken in the course of teaching pupils with hearing impairment is the necessity to provide critical instructional materials. From the t-test results obtained in Table 5 above, it is quite evident that clear that teachers involved in educating children with hearing impairment need realize the necessity to embrace the extensive use of instructional materials in Civic Education instruction, in order to facilitate greater educational understanding among this particular category of learners.

9. Conclusion

In view of the major finding that has emerged from the study reported in this article, it is evident that academic achievement of pupils with hearing impairment in Civic Education can be considerably improved with the adequate provision and increased utilization of instructional materials during teaching and learning processes in general. It is therefore, necessary for teachers remain mindful of the use of instructional materials specifically on pupils with

hearing impairment in order to facilitate the understanding of Civic Education during teaching and learning activities.

10. Recommendations

On the basis of the results and accompanying finding of the study reported upon in this article, it would be out of place to proffer the following broad recommendations, with pedagogical implications:

- There should be supervision of teachers to ensure the use of instructional materials during teaching and learning process.
- Government agencies need to provide fully equipped resources room with sufficient modern multimedia teaching resources to be used during the teaching of Civic Education lessons in schools, especially 'special needs' institutions.
- Erring teachers who violate the stipulated rules of the school for the use of teaching materials during teaching and learning activities should be made to face sanction.
- Non-Governmental Organizations (NGOs) need to be encouraged and motivated to assist such special needs' institutions as MTC Jos, in building a standardized, resource unit/room, specifically equipped for instruction in Civic Education. Such a center can build and keep stock of such essential teaching aids and materials as educational charts, maps, atlases, etc.

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