Instructional Media Design, Teaching Experience and Knowledge of Improvised Instructional Media as Determinants of Teachers' Performance in Secondary Schools in Uyo Senatorial District

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ABSTRACT

The study sought to find out the joint effect of instructional media design, teaching experience and knowledge of improvised instructional media as determinants of teachers' performance in secondary schools in Uyo Senatorial District. Two objective and hypothesis were formulated to guide the study. The study adopted a survey-research-design. The population of the study included all the male and female teachers and students in 96 secondary schools in the 6 local Education Committees (LEC) of Uyo Senatorial district of Awa Ibom state. The researcher developed an instrument tagged "Media Utilization Questionnaire (IMUQ) and Questionnaire on Students' Perception of Teachers' Performance (QSPTP)" for data collection. To ensure that the instrument is reliable, split-half reliability estimate using 0.86 and 0.73 reliability coefficient was run on the questionnaire. The hypotheses were analysed using T-test and Multiple Regression analysis. From the result of the findings, it was observed that there is significant effect of teachers' knowledge of instructional media utilization on teachers' performance as perceived by the students. Also that there is a joint influence of design strategies, teaching experiences and teachers' knowledge of improvised instructional materials on teachers' performance. It was recommended among others that teachers should try to present their lessons using appropriate instructional communication principles and practice, having a good knowledge of their subject matter, making use of varieties of local resources and also integrating them in or matching them with instruction.

KEYWORDS: Teachers' knowledge, instructional media, teachers' performance, students' perception

Introduction

A common goal of teachers everywhere is to make lesson presentation vital and alive and lasting for their students. This goal can often be reached most effectively through the use of instructional media and devices used as media for transmission of concepts and ideas deemed important in curriculum requirements. According to Golstein (1996), it is possible today for teachers to create instructional materials to correlate the curriculum without special materials and equipment, and that it can be accomplished with little expense in relation to the local production of some inexpensive instructional materials is both practical and necessary. Effective utilization of these materials can contribute greatly to the improvement of teaching and learning (Gbamanja, 1994).

Abimbade (1991) defines instructional media as a broad-range of resources that can be used to facilitate effective and efficient communication in the teaching-learning process. Ngoka (1999) recognizes the role of instructional media personnel (including teachers) as great and noble. He sees media as the heart of learning in our secondary schools whose importance need not be underrated. Studying supplication of media in secondary schools in Nsukka Local Government Area of Anambra state, Ngoka (1994) observed students' interest in the use of media in the classroom. Hence it is necessary to enrich the learning environment with a variety of learning experiences and media.

For instructional media to be used extensively, effectively and efficiently within a given instructional setting and for learning to take place, instructional media must be planned, produced, selected and evaluated (Ibe-Bassey, 1991). Such materials are matched to the learners characteristics, objectives and content. For the purpose of distinct clarification, the researcher decided to review empirically the various processes of instructional media, such as instructional media design strategies, instructional media production, selection and instructional media utilization.

Statement of Problem

It has been observed that many of our classrooms are devoid of charts, drawings, pictures, and models. One could say that Nigerians are not making effective and efficient use of the opportunities offered by the introduction of educational technology (media) into the teaching-learning process. Media had been noted to serve as a catalyst that spark or ignite in the minds of the learners immediate response, awareness, understanding and consciousness of the messages embedded in them. Improper use of media by teachers has on several occasions led to the introduction of more historical confusion than were intended to prevent. Regrettably, some available materials are not so suitable given that most of them were not formatively evaluated before being mass produced. This study therefore arises on the need to evaluate the joint effect of instructional media design, teaching experience and teachers' knowledge of improvised instructional media on teachers' performance.

Objective of the Study

1. To assess the effect of teachers' knowledge of instructional media utilization on teachers' performance as perceived by the students.

2. To determine the joint effect of instructional media design, teaching experience and teachers' knowledge of improvised instructional media on teachers' performance.

Research Hypothesis

The following hypotheses guided the study:

1. There is no significant influence of teachers' knowledge of instructional media utilization on teachers' performance.

2. There is no significant joint effect of instructional media design strategies, teaching experience and knowledge of improvised instructional materials on teachers' performance.

Literature Review

Instructional media are used in our primary, post primary and tertiary institutions of learning. Such materials are channels of communication through which content stimuli are presented to the learners (Ibe-Bassey, 2004). These materials or media can direct attention, inform, evoke a response, guide thinking and finally instruct the learners very effectively. Effective use of instructional media in any classroom encourages interest in learning and assures motivation, individualized instruction and immediacy in learning (Ibe-Bassey and Agba, 1991). Utilization of media is associated with the function of teachers as managers of instruction (Asuquo, 1998). The teachers lose nothing except their unnecessary sweat and early tiredness if they use instructional media effectively. Students gain a lot from the functions and the judicious application and use of these media in instruction.

According to (Ibe-Bassey, 2004), the characteristics of instructional media are presented on the following types of materials;

A. Non-Projected Visual Instructional Materials:

These instructional materials do not generally require projections for viewing and using in any given instructional situation. They are used extensively in rural areas where the source of electricity and little funding for instructional materials do not exists. Non-projected visuals include:

(i) Still pictures

(ii) Graphic materials

(iii) Models and regalia

(i) **Still pictures**: These are photographic or photograph-like representation of people, places, events or things. They contain symbolic information, which are abstract in nature. Photographs and illustration in textbooks, periodicals, catalogue, magazines, study prints, are all forms of still pictures. Like other instructional media, they can be used to communicate abstract ideas into more realistic format, gain and maintain attention of learners. They can be used at all levels of instruction. Still pictures are two-dimensional, because of their small sizes they are not suitable for a large group instruction but for independent and small group instructions. A good picture must have good composition, a clear message to be presented, good contrast and sharpness with effective colours.

(ii) **Graphic Materials**: in most of our schools, these materials are usually called ‘graphics’. Teachers and students can produce them locally. They are non-photographic, two-dimensional materials designed specifically to communicate any message to the learners. Graphic materials are usually illustrated with verbal and symbolic visual cues. For instructional purposes, graphic materials contain images that are visually symbolic rather than being fully representational. They require special attention if students must interpret the symbolic cues semantically. The use of appropriate visual design tools and elements can help learners to interpret the images meaningfully. Graphic materials come in the following formats:

Drawing: These include sketches and diagrams. Sketches are graphic arrangement of lines used to represent persons, places, ideas and concepts. Drawing lack details.

Charts: They are symbolic representations of abstract information. Generally, a chart is a combination of graphic and pictorial medium used to visualize relationships between key facts and ideas. Usually charts contain clear and well-defined instructional process and are used to express only one major concept of configuration of concepts. Visual design tools of arrangement, balance, colour, fidelity and harmony are used in presenting information in charts. Very erroneously they are called 'teaching aids'.

Charts are diverse in nature and a resourceful teacher can select and even produce any one of them for instruction. These include:

- Organization chart, Classification chart, Time line chart, Tabular chart, Flow chart, Pocket chart, Well chart, and Flip chart

The last three types of charts are used extensively in our schools for several forms of instruction at all levels.

Graphs: these are visual representations of numerical data. They are used to compare qualitative and quantitative information simply and quickly. They can be used to illustrate relationships between units of data and trends in the data. Like charts, graphics are of different types, which include: Line graph, Pictorial graph, Bar graph/histogram, Circle or pie graph, etc

The use of any of these graphs depends on the complexity of the information the instructor wishes to present to the learners. Some of the graphs are used extensively in mathematics. Others are: posters, and cartoons.

iii. Models and Realia: Models and realia are used in any instructional situation to present direct, concrete and purposeful learning experiences. Most models are three-dimensional while realia are not. Models and realia can lead learners to discover facts, stimulate imagination as in classifying of abstract ideas and teaching skills. Realia are real things and objects, which may include: life specimens, coin, tools, artifacts, plants and animals. Realia are not commonly considered as visuals because visuals imply representation of an object rather than the object itself. Models are three dimensional representations of real things or objects. They can be larger, smaller or of the same size as the object to be represented. Generally, models contain and represent more details than realia. Other instructional materials are:

B. Projected Visual Instructional Materials

C. Transparent Projected Visual Instructional Media – Overhead projectors, overhead transparencies, slides, filmstrips, etc.

D. Opaque Projected Visual Instructional Materials

E. Film, Television and Video programmes

F. Audio Instructional Media – phonograph and records, cassettes and tapes, cards, reel-to-reel tapes and cassettes, radio and telephone programmes and language laboratories.

G. Interactive Instructional Media – Computer Based Education (CBE), Computer Managed Instruction (CMI), Computer Supported Learning Aids (CSLA) and Computer Assisted Instruction (CAI).

According to Elekwa & Eze (2002), improvised instructional materials are utilized frequently in the teaching – learning process in the following was: either to introduce a lesson, used as the main body of the lesson or used as a piece of recapitulatory material designed to assist in the process of consideration of knowledge. This implies that the abstractions and lack of clear perception on the part of the learner of the logical events in any subject perhaps could be attributed to the neglect by some teachers regarding the use of instructional media. Obiawu (1994) noted that apart from the fact that the utilization of instructional materials helps learners in their learning, they also help the teachers in their teaching.

Just as teachers perceive the various academic backgrounds, needs and individual differences of the students, the students also perceive the varied teaching performances of their teachers and particularly their use of instructional media in the classroom. The levels of students perception varied according to the levels of knowledge acquired by the students in their daily encounters with their teachers within and outside classroom. Perception per say is that process by which sensory information is actively organized and interpreted by the brain (Goldstein, 1996). This means that students who have perceptual abilities have the potentiality of interpreting and obtaining meaning from the stimuli in the classroom or environment. Mabel (2004) maintains that students benefit from education when they learn from their teachers the kind of attitudes to develop toward the school, classroom and out-of-classroom situations such learning can possibly serve to shape the students up and prepare them for a successful future life.

Teachers' encounter in the classroom involves practical activities based on the right sense of judgment and ability to unravel abstract ethical values and bring them to concrete educational practice so that learning can occur. It is worthy of note that many teachers do not have the wherewithal, adequate formal training, teaching experience, skills, choice or the method of teaching and proper commitment towards the use of instructional materials. Effective instructional materials usage is based on the teachers' level of skill and training background. Some teachers' background in media resources, design and development is gained through pre-service and in-service training whereas a greater number have no such exposures. Thus, those with training background in media development will be able to initiate, adapt and even create local instructional materials (Brown, 1994). These local instructional materials can facilitate effective learning because they have cultural relevance to the learners (Mbang, 2004).

Teachers' experiences are based upon short, average and long years of teaching in the classroom. Okon (2000) states that very long years of teaching experience enhances teaching and learning situations and also improve their performance in terms of acquired skills and methods. Short years of teaching experiences a very low turn-out or result on the part of students. Such teachers' understanding is very low and inconsistent. An average years of teaching experience is classified as half-baked and subject to haphazard presentation of lesson and utilization of instructional media.

Teachers' focus therefore must be directed toward the technique of expanding the range of resources used for teaching and learning and emphasis also directed towards individual learners and their unique needs and the use of systematic approach in the development of learning resources. However, where adequate resources are supplied and made available, other things taken into consideration, learning processes can proceed faster than where materials are either not supplied or insufficient. And so when materials are available and accessible in secondary schools in particular, teaching experience and efficiency are employed by the teacher while learner responds positively to learning in the classroom (Ibe-Bassey, 1997).

Methods

Research Design

For the purpose of the study, survey research design was used.

Area of the Study

The area for the study was Uyo Senatorial district which covers Uyo, Nsit Ibom, Etinan, Uruan, Nsit Atai, Ibesikpo Asutan, Itu, Ibiono, and Nsit Ubium, inhabited by Ibibio speaking people.

Population of the Study

The population of the study included all the male and female teachers and students in 96 secondary schools in the 6 local Education Committees (LEC) of Uyo Senatorial district of Awa Ibom state. The population of the teachers was estimated at 2,864 representing 1,534 males and 1,330 females. The enrolment figure of Senior Secondary Two (SS2) students in the area at the time of the study (2007/2008 academic session) stood at 32,689 representing 17,962 males and 14,727 females.

Sample and Sampling Technique

The sample consisted of 600 secondary school teachers and 360 SS2 students from 30 selected secondary schools. Stratified random sampling technique was used in the study to categorise the sampled area into 6 strata. The hat-and-draw method was further used to randomly select 5 secondary schools from each strata making a total of 30 schools and 12 SS2 students.

Instrumentation

The instruments for data collection were designed by the researcher. They are: Instructional Media Utilization Questionaire (IMUQ) and Questionaire on Students' Perception of Teachers' Performance (QSPTP).

Validity of the Instrument

Face, content and construct validation of the two instruments were ascertained by experts in measurements and evaluation.

Reliability of the Research Instrument

In order to ensure the reliability of the instruments, split-half reliability estimate using 0.86 and 0.73 reliability coefficient was run on the questionnaire.

Method of Data Analysis

Data generated was analysed using T-test and Multiple Regression analysis.

Hypothesis Testing and Discussion of Findings

Hypothesis One

The null hypothesis states that there is no significant effect of teachers' knowledge of instructional media utilization on teachers' performance. In order to test this hypothesis, two variables were identified as follows:

1. Teachers' knowledge of instructional media utilization as independent variable

2. Teachers' performance as dependent variable.

T-Test analysis was used in comparing the mean scores of teachers' knowledge of instructional media utilization and teachers' performance, in order to produce t-value.

Table 1: T-test Analysis of the Effect of Teachers' Knowledge of Instructional Media Utilization on Teachers' Performance

VARIABLES	N	X	SD	T
High utilization	441	56.24	8.10	26.91*
Low utilization	159	36.92	6.63	

***Significant at 0.05 level; df = 598; critical value = 1.96**

From Table 1, the obtained t-value was 26.91; the calculated value was tested for significance by comparing it with the critical t-value (1.96) at 0.05 level with 598 degree of freedom. The obtained t-value (26.91) was found greater than the critical t-value (1.96), hence the result was significant. The result signifies high positive influence on the two variables. It means that the higher the teachers' knowledge of instructional media utilization, the higher or the more effective the teachers' performance in the classroom and vice versa. The significance of the result caused the null hypothesis to be rejected while the alternative one was accepted. The result therefore means that there is significant effect of teachers' knowledge of instructional media utilization on teachers' performance. The findings of this study is in support with the opinion of Imogie (1991) who stated that the use of instructional media by the teachers stimulates students through both visual and auditory controls, especially where the classes are large.

Hypothesis Two

The null hypothesis states that there is no significant joint effect of design strategies, teaching experience, and teachers' knowledge of improvised instructional media materials on teachers' performance. In order to test this hypothesis, three independent variables and one dependent variable were identified as follows:

1. Effect of design strategies, teaching experience and Teachers' knowledge of instructional media utilization as independent variable

2. Teachers' performance as dependent variable.

The variables were subjected to multiple regression analysis in order to generate the predicted (ŷ) value of Y (teachers' use of instructional media for teachers' performance) and X^1 for the value of X (teaching experience and knowledge of improvised instructional materials).

Table 2: Model summary of the joint effect of design strategies, teaching experience and knowledge of improvised instructional materials on teachers' performance

MODEL	R	R-SQUARE	Adjusted r-square	Std. error of the estimate
1	0.950[a]	0.903	0.902	3.595.

***Significant at 0.05 alpha level; df = 598; critical value = 0.062**

Table 2 presents the calculated R-value as (0.950). This calculated value was tested for significance by comparing it with the critical R-value (0.062) at 0.05 alpha level with 598 degree of freedom. The obtained R-value (0.0950) was greater than the critical R-value (0.062). The R-value coefficient of 0.0903 predicts 90% of the joint effect of design strategies, teaching experience and knowledge of improvised instructional materials on teachers' performance. Hence the result was significant. The result signifies high positive influence on the variables. It therefore means that the higher the joint effect of teachers' knowledge of design strategies, improvised instructional materials and teachers' experiences, and teaching experiences, the higher the teachers' performance. The significance of the result caused the null hypothesis to be rejected while the alternative one was accepted. The result supports the view of Ibe-Bassey (1991) on the use of instructional media, which states that the teacher should prepare himself, the classroom and the students, present the media properly and then follow up, sometimes by questioning and answering questions to assess the quality of experience gained and of the input made so far.

Conclusion

The study concludes that:

1. There is significant effect of teachers' knowledge of instructional media utilization on teachers' performance as perceived by the students.

2. There is a joint influence of design strategies, teaching experiences and teachers' knowledge of improvised instructional materials on teachers' performance.

Recommendations

1. Teachers should be encouraged to acquire skills in the systematic planning, development, design, production, selection as well as the use of local materials in facilitating learning in students.

2. Resource material base of schools should be expanded by sourcing for local raw materials for the development and production of alternative instructional materials to replace or supplement the imported ones.

3. Teachers should try to present their lessons using appropriate instructional communication principles and practice, having a good knowledge of their subject matter, making use of varieties of local resources and also integrating them in or matching them with instruction.

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