GHANA JOURNAL OF EDUCATION AND TEACHING

GHAJET

Vol. 1 No 1, 1999

The Teacher, Communication and Educational Technology for Sustainable National Development

ADEYANJU 'LADE JOEL

FACULTY OF EDUCATION,
OBAFEMI AWOLOWO UNIVERSITY, ILE IFE, NIGERIA

The study investigates the attitude of the teacher to the use of Educational Technology for communicating with learners in the higher education system. A survey of 120 randomly selected subjects comprising 20 teachers and 100 undergraduates of the Obafemi Awolowo University in Ile Ife responded to a questionnaire on the teacher, communication and Educational Technology for sustainable National Development. (TECESND). The descriptive statistics of mean scores and percentages were used to analyse the data. Results emanating from the study showed that some instructional materials like boards, text books, charts and regalia were used by teachers to teach in their various disciplines. In some cases visitations and field trips by teachers and students were encouraged. There is a need to mount up training programmes on the use of 'hardware' materials for teachers. Industrialists, medical and paramedical staff and teachers in training would benefit from easy and effective communication. By so doing, educational technology would be contributing to sustainable national development.

Introduction

The teacher is the pivot on which the success of any programme of educational development and renewal hinges. It is also felt that if students can fulfil the function of impersonal media alone, there will be no need for teachers. It is because most students cannot fulfil them without help that teachers are so important.

The United Nations Development Programme (UNDP) 1996 reported that 45% of the 104 million Nigerians is composed of children below 15 years. Only 22.7million of this number were enrolled in schools, while 3.7 million were in pre-school with age below 6 years, 16.2 million in primary, 2.8 million were enrolled in the junior schools. With this figure, a large percentage of Nigerians would be considered as illiterate.

A major aim of education is to help the child develop his natural abilities. Therefore, creation of an environment that could stimulate, challenge and involve the learner in the art of learning and doing, would be a step towards the development of a nation. But the child has to acquire the rudiments of those things which he ought to know in order to function properly.

The involvement of educational materials in the form of audio visual as well as a combination of the two with some other instructional materials would be a useful strategy to be imbibed by teachers for effective communication with learners.

Literature Review

Geiser (1969) indicates that teachers spend two-thirds of their time disseminating information using the traditional 'talk and chalk' method. Whereas technology changes rapidly, the teacher is yet to look at educational

technology as a tool that could make him more efficient in his teaching because he considers technology as a threat to his job. (Curson, 1994) Frandy (1977), supporting the use of educational technology for information dissemination, describes educational technology as an impressive tool that can be used to a great advantage to implement development and improvement in the educational system. Agun (1980), Akanbi (1986), Akinyemi (1986), Imogie (1987) Adeyanju (1993) and host of other researchers have reported the advantages which the use of media have over the traditional methods that teachers seem to adore.

However, in the traditional classroom, as many as 40 to 100 learners or even more in urban centres are still being taught using the talk and chalk system (The Guardian, 21 October, 1998). One weakness of the traditional method of information dissemination to learners is that the teacher's attention and his teaching most of the time is directed at the 'average' learner. This is why the teacher's method needs an injection of educational technology tool for communication to get to more learners.

In the Obafemi Awolowo University, for example, the closed circuit television (CCTV) which is a fast developing teaching aid has been packed up for over fifteen years. The advantage of using this medium for communication with several learners at the same time has therefore been totally eroded. In recent times of overcrowding of students that emanates from overpopulation of learners, the CCTV could have been used to communicate with students in their various auditorium. The pack up of the CCTV is seen to stress both the teacher and learners efforts.

The computer system is a very useful source by which information can very easily be disseminated. The retrieval of feedback is easy but is expensive for the average teacher to have. There are other areas that serve as information source: Resource centres, the library, and the museums.

However, the multivarious problems that beset resource centres, like cost effectiveness, purchase and use of computers, lack of funds to resuscitate closed circuit television; the problem of purchase of equipment, like new carosel, bulb replacement, etc, demand that low cost, locally produced materials be used by teaches to teach their lessons. Imogie, (1986), Adeyanju (1986) and Akanbi, (1987) in their various researches have stressed the need for the use of locally produced instructional materials for teaching. The extent to which teachers use them or improvise for some of them is a subject of debate.

It is realised that educational information can be disseminated via audio and visual media because they serve as cue to specific knowledge as well as ideas and concepts that are important to remember. Even when these materials are available they are often not used for teaching. The need for teachers to involve teaching aids in their teaching therefore become very essential.

Hudson (1962) observes that a great proportion of communication is provided for the eye to receive and the brain to interprete. A great deal depends on the understanding of the symbols which constitute (verbal) enrichment in the form of pictorial materials that are being used for teaching. Clanzer and Clark (1963) are also of the opinion that pictorial materials have the potential of being translated into and stored in verbal/symbolic form. Rock and Levin (1977) conclude that pictorial materials when properly used, facilitate response to questions and also provide relevant context and necessary background details.

Okunrotifa and Agun (1977) confirmed that the use of educational media in higher institutions was very low. In spite of their usefulness, the researcher found that a very small number of teachers do use some of them. Even in the Faculty of Education of the Obafemi Awolowo University Ife Nigeria, it was observed that a large number of teachers do not yet appreciate the importance of educational technology in curriculum development.

From several studies that have been carried out all over the world on effectiveness of educational technology, the findings that emanated from them are summarised in (Grandy, 1977 : 68) who states that:

> "... any technology can within its physical limitations perform any educational task. Learning and achievement outcomes of students may depend as much on how a medium is used. No sufficient evidence exists to back up the supposition that one medium is inherently more effective and desirable than any other medium ..."

This means that teachers need to have adequate knowledge to be able to effectively use media for communication purposes. The media of information dissemination through television, videotape, recorder, record player, overhead projector, and film strips and several others, can be used by teachers to bring about new innovations as strategies of teaching.

Communication is regarded as one of the vital concepts and requirements of the world's advancing civilization. People communicate to persuade, inform, instruct, give command as well as to have feedback. Communication is expressible by sight, through gestures, by sounds, and by action. The teacher is in the position to select relevant media to enrich his teaching. He however, needs training to be able to do this successfully.

Considering the forces of modernization, the strata that exist in our socio-economic and political systems very often lead to the need for a change. Education is one of the forces such that when people become enlightened, their level of awareness is heightened and this leads them to clamour for development. Sustainable development in nation building is essential and it is education of the masses that can lead to its realisation in Nigeria and in other developing countries.

Objective

The purpose of this paper is to investigate the extent to which Obafemi Awolowo University students have benefited from being taught with educational technology materials. A second purpose is to assess teacher's knowledge of educational technology materials and whether they have ever used specific 'hardware' for instructing learners.

Research Questions

Two Research questions were stated as follows:

1. Will University teacher teach with audio visual materials?
2. Are students being taught with instructional materials?

Methodology

Population:

The poluation for the tudy comprie all students that registered for courses during the 1997/98 second semester of the Obafemi Awolowo University, Ile Ife. One hundred (100) undergraduate students from different disciplines and twenty (20) teachers of the Obafemi Awolowo University, Ile Ife, were selected through stratified randominization as a sample for the study. The twenty university teachers have put in a minimum of 15 years in the service. The selection of participating teachers was carried out with cognisance of the students that registered for courses in each department.

Instrument

The students responded to a twenty-item questionnaire on the teacher, communication and educational technology for sustainable national development (TECESND) The questionnaire items were before use, submitted to a three man panel from the Faculty of Education. Two of them were from Educational Technology department; one other expert was from the department of Educational Foundations and Counselling. The three experts validate the instrument for content, and face validity. Their suggestions were used to modify the final testing instrument before they were administered to the study sample. The testing instrument was considered reliable because it is a modified instrument which Agun (1987) had earlier on used on the Obafemi Awolowo University students that were on a part-time Associateship Certificate in Education.

Data Collection and Analysis

The questionnaire was directly administered to the subjects during the month of October 1998 with the help of five (5) reained research assistants who collected data after the tecture period. The research assistants were briefed ib tge cibdyct if the survey. The author however, carried out both structured and unstructured interviews among the 20 selected lecturers. In addition, the author also monitored the lecturers during their presentation of lectures to observe and record the types of instructional materials that were used. The returned questionnaire that were administered on students was (70) out of (100). This gives a seventy percent of the returned questionnaire that was analysed. On the other hand a hundred perent of teachers response was used. The descriptive statistics of frequency counts, percentages and mean scores were used to analyse the data collected and are presented in the tables that follow.

Results and Discussion

TABLE 1: Subject areas and number of participating teachers Faculty

EDU	EDM	SC1	SOC.SC1.	MEDICINE	ARTS
PHE 03	FNA 03	BOT 01	POL. SC1. 01	ANATOMY 01	ENG. 01
DCE 01	ARCH. 01	BIO. 01	PSY. 01		
IED 03		AGRIC. 01 GEOLOGY 01			
TOTAL 07	04	04	02	01	01

Interpretation

PHE - Physical and Health Education
DCE - Department of Continuing Education
IED - Institute of Education
EDM - Environmental design and Management
FNA - Fine Arts
Arch - Architecture
Psych - Psychiatry

The research question (1) which asks if university teachers will teach with audio visual materials is analysed and presented in the Table 2.

TABLE 2: Opinions of teachers on Media they have used for their teaching *(NO = 20)*

	ITEMS	RESPONSES POSITIVE	NEGATIVE
1.	Have used Instructional Materials to teach	(20) 100%	NIL
2.	Considers media as effective tool for communication.	(20) 100%	NIL
3.	Have undergone some training in the use of instructional materials for teaching.	(09) 45%	(11) 55%
4.	Can improvise instructional materials for teaching and learning process	20 100%	NIL

Interpretation of obtained results indicates very lucidly the idea of what teachers feel about media types and their usefulness int he teaching and learning process.

From Table 2, 45 percent of teachers had training in the use of instructional media materials for teaching. 100 percent had used some materials to teach. Hundred percent consider their use as tolls for effective communication while 100% can improvise for some instructional materials. In the light of the obtained results, teachers are aware of the importance of the use of instructional materials for their teaching.

Table 3 shows the response of university teachers to types of "hardware" and other instructional materials they have used in their teaching.

TABLE 3: Types of soft and hardware instructional materials used by university teachers

Types	Percentage of their use (N=20)	Frequency of use
Overhead projector	12(60%)	Fairly adequate
Transparency	12(60%)	Fairly adequate
Radio	02(10%)	Inadequate
Radio Player	02(10%)	Inadequate
Film Strip	03(15%)	Inadequate
Slide Projector	09(45%)	Fairly inadequate
Television	0 (0%)	

Responses of teachers' frequency and percentage of soft and hardware media usage show that very little of both the soft and hard ware have been used in their teaching. The implication of the above finding indicates that teachers have some ideas of both the hardware and software but are not able to put them to effective use.

Research Question 2

Are students being taught with instructional materials? In order to ascertain whether participating students have experienced being taught with the listed media types, their responses to items 9-17 of the 20 items of the questionnaire that tested their responses were analysed and presented in Table 4.

Table 4: Students response to (TECESND) Questionnaire

(N = 70)			
ITEMS	Strongly Agree SA	Undecided Un	Strongly Disagree SD
1 - 20	Total 490 _ 24.5	175 8.75	723 _ 36.2
Percent	35.3	12.61	52.09

From the analysed data in Table 4, results show a mean score of 36.2 responses for strongly disagreed with the opinion that asked if they (students) have experienced being taught with hardware materials. A mean score for the undecided is 8.8. The inference that can be drawn from the obtained results is that teachers need to actively use instructional materials to teach so as to make their work easy and their lessons less burdensome in the teaching of large classes. A large proportion of students will prefer being taught with enrichment of instructional materials. The response of 52.1 percent of student who would want to be taught with instructional materials, indicates the acceptance of the research question 2.

Students seem to enjoy being taught with enrichment of instructional materials. This finding is a pointer to Grandys (1977) support for the use of the educational Technology materials for improving learning.

Two research questions were tested. The first asks whether teachers will use instructional materials for their teaching. From the analysed data, the overhead projector, transparency and slides have been fairly adequately used by teachers. Radio, film and television have been inadequately used by teachers. In fact, radio film and player were scarcely used. However, from observation, teachers used posters, flip charts and text materials to teach their lessons. Okunrotifa and Agun's (1977) position that teachers at the higher level of education are yet to appreciate the importance of materials for instructional purpose is supported by the present findings.

Research question 2 which asks if students will prefer being taught with enrichment of instructional materials was analysed. With only 35.3 percent of students agreeing that teachers teach them with media, and 52.1 strongly disagreeing. This finding indicates that teachers need to use more instructional materials for the enrichment of their lessons. It appears that teachers use of the talk and chalk system is still very much in use. The Guardian of 21, October 1998 already pointed out this problem. It will therefore be wise for teachers to imbibe the culture of using locally fashioned instructional materials in their teaching as research findings of Agun, Akanbi, Adeyanju, Imogie and others have supported the advantages which media use have over the traditional method of teaching.

Recommendations

1. Workshops for training in preparation and use of instructional materials will lead to a sustainable national development.
2. The improvement of the educational system through provision of qualified teachers ie. trained media specialists who would imbibe the culture of training teachers would lead to a sustainable national development.
3. The curriculum and programmes to be studied in higher educational system should be planned with media specialists who will introduce instructional materials and innactive strategies on how information could be better communicated to learners in schools, hospitals and industries etc.
4. It is pertinent to advise that teachers resource centres be operated in the higher education system.

5. Educational practitioners must be concerned with learner centred teaching; for it is realized that most teaching and learning are teacher centred this should not be so.
6. There is a need for proper information dissemination regarding the importance and use of relevant locally fashioned Instructrial materials for teaching at all the levels of the educational, social and Industrials systems.
7. The media specialist should organise periodic workshops for teachers on training. For it is the cream of the young teachers undergoing training today that will likely build the nation.

Conclusion

Sustainable development in education is essential for the following reasons: population and information explosion, increase in school enrollment and the National policy statement on Universal Education (UPE) which has accelerated the pace of educational development. (Akanbi, 1993)The more educated people in the society gets, the more improved the individual becomes. To this end, Nigeria can through educational technology sustain national development better by giving attention to the changing societal needs. New programmes involving the use of the hands, eyes and the brain should be given top priority. The teaching of the basic skills should be a priority while a new delivery system that encompasses educational technology should be developed so that the teacher's horizon will become extended. To conclude, teachers need retraining in the use of teaching with instructional materials. Teachers need to use self-developed instructional materials that have been tested and found useful for enhancement of learning outcomes. Such materials should include games and simulations Akinyemi, (1997) and also low cost materials like charts, boards, pictorial materials etc, as proposed in Akanbi, Adeyanju, Agun, Imogie and others. The use of these materials will assist learners and reduce the talk and chalk method which is very restrictive to learning.

References

Adeyanju J.L. (1993), 'Improvisation in the teaching of creative arts.' In Akanbi K., Adeyanju and Adekomi K. Ondo. (eds*) Educational Technology in Methodologies of Teaching Humanities.*_ Ife Olu: Publishers. p. 178-183.

Agun, I, and Imogie I, (1988). 'Fundamentals of Educational Technology', in Agun and I, Imogie. (eds) Ibadan. *Fundamentals of Educational Technology,* Y-Books Associated Book Makers (Nig) LTD.Y-Books. Associated Book Makers (Nig.) LTD. Ibadan p.20.

Akanbi D.K. (1986). *Educational Technology in the Teaching of English Language* (Unpublished)

Adeyanju L. and Adekomi B. (1993) Proluge. *Educational Technology in Methodologies of Teaching Humanities.* Akanbi, K, Adeyanju , L. and Adekomi, B. Ondo (eds) Ife Olu publishers.

Akinyemi, K. (1997) *Low Cost Educational Technology, Simple Ideas and Techniques for producing effective Instructional Materials. Handbook for Teachers in developing countries.* Kumasi. University College of Education.

Curson L.B., (1994) 'The utilization of Audio Visual Audio'. *Teaching in Further Education. An outline of Principles and Practice.* London. Redwood books. p.321.

Eloise, (1977) "Students Perceptions of self actualising and non self actualising Teachers" *The Journal of Teacher Education. Vol. 23,* p.383.

Gadenhead A and Newell L, (1973). "Personalising Teacher Education. *Educational Technology. Vol. 13, No. 3,* p. 51-55.

Geiser K.R. (1969), 'Education and Communication: Designing Education for the Future No. 6', in Edgar L. Morphet and David Jesser. (eds) *Planning for Effective utilization of Educational Technology in Education.* Citation Press, New York p. 201-203

Grandy W.F. (1977), "Teacher Education and Technology to accelerate Development, *Teacher Education for Development: International Perspective.* p. 68.

Newton in Geiser (1977) *On Expanding the role of Teacher Education.* (ICET) p.68

Okunrotifa P. O. and Agun I, (1977) Education Technology in Nigeria. *Teacher Education. Education for Development International Perspectives on Expanding the role of Teacher Education. (CET) p.75.*

Pringle, R.J. (1969). Perspective Developments in Communication system. *Designing Education for the future No. 6 (eds) Edgar L. Morphet and David Jesser, Planning for Effective utilization of Technology in Education.* Citation Press New York p. 193-200.