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<i>Authors</i>	<i>Articles</i>	<i>Pages</i>
AYENI A. O.	Training and Employment of Technical College Graduates in Oyo State.....	1
ODINKO, MONICA N. AND IROEGBU, VICTORIA	Effects of Pre-Primary Education on Cognitive and effective Learning Outcomes among Primary School Children in Nigeria	10
E.A. OKWILAGWE AND F.V. FALAYE	Teachers' Instruction and Evaluation Needs in Imparting Basic Social Studies Knowledge at the Primary School Level: Basic Social Studies Knowledge at the Primary School Level: Implications for Teacher Training	23
ADAMS O. U. ONUKA	A Review of Fund Allocation to the Nigeria Federal University System (1992-2002)	35
J. ABIOLA ADEMOKOYA AND A.M. OYEWUMI	Effects of Hearing Level, Type of School and Gender on Career Choice of Hearing Impaired Adolescents	49
ERWAT, E.A.	Information Acquisition and Management Capacities as Determinants of Administrators' Decision-making Effectiveness in Tertiary Institutions in South-Western Nigeria	60
HENRIETTA A. YARQUAH	Assessment as an Important Component of the Teaching and Learning Process: The WAEC (Ghana) Point of View	68
BENSON ADESINA ADEGOKE	Effects of Single-Sex and Co-Educational Schooling on Students' Cognitive Achievement in Integrated Science	76
IKUJUNI, J.A. ; ENI-OLORUNDA, J.T. AND DADA, O.C	Distinctive Methodology and Watered-down Approach as Strategies in Language Acquisition of the Educable Mentally Retarded Children	84
IBODE OSA FELIX	Effects of the Use of Video Tape Instruction on Students Achievement in English Language	94
TAJUDEEN AKANJI	Educational Strategies for Mobilizing Youths for Peace in Nigeria	105
PEACE N. IBEAGHA	Coping in Nigerian Remand Homes: The place of Individual Differences, Environmental Factors and Situational Characteristics.....	113
ALIMBA, N. CHINYERE	Managing Group Conflicts in the Educational System	127
IJATUYI, O. A.	Factors Affecting Awareness of Environmental Information and Management of the Physical Environment of Female Inhabitants of Selected Local Government Areas of Ondo State, Nigeria	138
T.W. YOLOYE; UGO VALERIE AIMAKHU AND J.O. ADELEKE	Assessment Strategies for Promoting Higher Order Thinking Skills in Public Secondary Schools.....	149
IFEOMA ISIUGO ABANIHE, IBIENE TANDI LONG JOHN	An Observational Study of Classroom of Science Student Teachers in Port Harcourt, Nigeria.....	161

Effects of the Use of Video Tape Instruction on Students Achievement in English Language

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Abstract

The study investigated the effect of video tape instruction on Senior Secondary School Students' achievement in English Language. The study also examined the interaction effects of treatment and academic ability on students' achievement in English Language.

Simple random sampling was applied in selecting 213 students from four co-educational public secondary schools in Ibadan city. The study used a 2 x 2 factorial analysis of ANOVA and three null hypotheses were tested. Two instruments, namely English Language Achievement Test (ELAT) and Video Tape Guide for English Language (VTIGEL) which were the instructional strategies, were adopted from Ibode (2004). Data Analysis was done by using the Analysts of variance procedure.

The results that there is significant main effect of treatment (video tape and control) on students' achievement in English Language ($FC_i, 213 = 47.922., P > 0.05$). The result also revealed that there is significant main effect of academic ability on students' achievement in English Language ($FC_i, 213 = 38.708 P < 0.5$). The high academic ability students were significantly better than the low ability students in their achievement in English Language. The findings further revealed that there is no significant interaction effect of treatment and students academic ability in their achievement in English Language ($FC_i, 213 P > 005$).

Based on the findings of the study, recommendations were made for the gradual introduction of video tape instruction into the secondary school system as a supplement to the existing methods of instruction.

Introduction

The process of systematic application of hardware and software equipment and materials to the process of teaching and learning has enabled video tape instructional technique to emerge as one of the instructional media contributing effectively to learning both at home and in the classroom. Ortiz (1990) and Goldman (1990) subscribe to the dynamic impact of video tape instruction on learning. They declare that video tape instruction is an effective means of instruction, especially in subject areas like engineering, medicine and education.

The video educational instruction is a forerunner to computer based instruction, but despite the presence of video and its potentials in education, this medium of instruction is rarely seen to be used in schools. Yet, according to Salawu (1999), video tape could be counted among the catalogues of instructional media that have recently found their way into teacher education and teaching.

Although, some scholars (Kearney 1997, and Barbatsis 1978) contest the effectiveness of video tape as a means of instruction, it is known that video tape instruction can be used to repeat instruction and information as many times as desirable. It also makes learning more concrete and realistic. In apparent appraisal of the power of vision accompanying video instruction, Knupter (1993) declares that the history of mass communication suggests that manipulation of visual images can have as powerful effect on human behaviour as the manipulation of written words.

The video tape instruction is interactive, for, it provides students with meaningful opportunity of interacting directly with the instruction. According to Barford and Weston (1997), video tape instruction could serve the students as a substitute for lectures; it could also help teaching staff as a supplement to lectures. Barford and Weston added that it could also serve as a group or individual learning package.

Naturally, everybody is equally talented or endowed; so the ability of a person becomes relevant where performance is in question. In this case, the performance of a learner under the teaching and learning process, to some extent, is an indicator of his/her academic ability. But what essentially is academic ability? Educators and psychologists have always been interested in the measurement of two general areas, namely "what a person can do" and "what a person will do" (Thorndike and Hagen, 1969). The measurement of "ability"

in form of aptitude test/achievement test is the measurement of what one had achieved, whereas, the measurement of 'what a person will do' is centred on personality measurement. Therefore, academic ability is a term sometimes used to refer to a learner's achievement deriving from school instruction which the student has undergone or intellectual inhibition acquired over the years.

Educators are, therefore, understandably interested in knowing whether or not students are measuring up to the desired ability. This is an attempt to identify underachievers – those students who are working below recommended ability and overachiever – those students working above some expected level of performance. The method of teaching could be regarded as the vehicle through which a message is delivered. The conventional method of teaching, therefore, could also be regarded as the hitherto, existing traditional methods of instruction in the normal classroom setting. There are several conventional methods of instruction which have been used in our educational system over the years. Among such conventional methods of instruction are Montessori method, Socratic method, Project method and Field Trip method.

Among the conventional method of instruction, no one method could be said to be most appropriate. Rather, classroom experience shows that in most cases, two or more teaching methods are combined by teachers in classroom practice. In this regard, Yoloye (1995) cautioned that there is no such thing as the correct method of teaching because a variety of methods may be applicable to the same topic or subject. A method that is more fruitful than another in a particular context may become much less effective in a different context.

Even then, if the existing conventional methods of teaching and learning have so far contributed to the level of students' achievement as obtained today, there is still need to search and incorporate modern methods of instructional technologies which the advanced world has long accepted into their classrooms.

The study investigated the effect of the use of Video Tape Instruction (VTI) on students' achievement in English Language.

Hypotheses

- Ho1: There is no significant main effect of treatment on students' achievement in English Language.
- Ho2: There is no significant main effect of academic ability on students' achievement in English Language.
- Ho3: There is no significant interaction effect of treatment and academic ability on students' achievement in English Language.

Research Design

The study makes use of 2 x 2 randomized pre-test, post-test factorial design in a quasi-experimental setting.

Variables in the study

The design crossed the independent and the moderator variable to provide for a 2 x 2 factorial analysis of ANOVA.

Population

All the Senior Secondary School II Students in Ibadan Municipal, Oyo State constitute the population.

Sampling and Sample

Simple random sampling was applied in selecting four co-educational schools from two Local Government Areas which were also randomly selected. The same technique was also employed to pick one SS2 arm (intact Class) in the selected schools. From this, participants in the experimental and control groups were selected.

Instruments

The instruments used were:

(i) *English Language Achievement Test (ELAT)*

This is a 60 item multiple choice English Language test with four options per item, adopted from Ibode (2004). This instrument has a reliability estimate of 0.72

(ii) *Video Tape Instructional Guide for English Language (VTIGEL)*

The Video Tape Instructional Guide for English Language (VTIGEL) is a programmed instructional package for the purpose of instruction in the classroom. The instruction guide which contains lexis, structure and comprehension passages was adopted from Ibode (2004). The programmed Video Tape consists of a lesson plan for each lesson, and each of the lesson plan contains specifics such as:

- The subject;
- The content (topic);
- The objective to be achieved at the end of the instruction;
- The instructional materials; and
- The assessment.

The VTIGEL has a reliability value of 0.74.

(iii) *Teacher Operational Guide for English Language Instruction (TOGELI)*

The Teacher operational guide for English Language is an instructional guide employed in teaching the control group by utilizing the conventional method

of teaching. It consists of lesson plan written for each lesson. Each of the lesson plans contains specifics like:

- The subject;
- The content (topic);
- The objective to be achieved at the end of the instruction;
- The instructional materials;
- The specific activities; and
- The assessment.

The TOGELI was adopted from Ibode (2004), and it has an inter-rater reliability value of 0.76.

(iv) *Academic Ability Test (AAT)*

This is sixty-item multiple choice achievement test with five options per item. It was adopted from Olunloyo (1999) "Steps to Verbal Reasoning". The items in the academic Ability Test (AAT) were trial – tested on 200 SS2 students in Ibadan North East Local Government Area of Oyo State to determine the discrimination and the difficulty levels of the items. Kuder-Richardson formula 20 which reflects the internal consistency of dichomously scored items was used to establish both internal consistency and content validity of the test items, and it produced a value of 0.75.

Treatment Procedure

Some English Language teachers were trained on how to use the treatment packages and instrument, which was initially admonitions on the subjects, the English Language Achievement Test (ELAT). The English Language achievement test scores served as pre-test (covariates scores).

Subsequently the treatment conditions were provided to the experimental and control groups. Simple random sampling was used to decide the specific treatment to be allocated each intact class of selected schools. The experiment lasted 6 weeks. At the end of this, the English Language achievement test was administered.

There are two treatment groups, namely:

Data Collection Strategy

Video Tape Instructional Guide for English Language was the first treatment package. The students watched and listened to the recorded English Language Video lessons.

The video tape was recorded in such a way that the voice and image of the teacher (who was a qualified English Language teacher) were clear. The general activities taking place within each lesson were also recorded in the video tape classroom instruction. The video tape contains the teaching of each lesson

under classroom condition (i.e. classroom, student and teacher), each lesson lasting 30 minutes. The remaining 10 minutes out of 40 minutes, was used by the teacher to receive feedback (in form of questions) from students.

Students in the control group were exposed to normal classroom situation (conventional method of instruction), in which the teacher used Teachers' Operational Guide for Instruction (TOGELI) in teaching the students. The TOGELI is the teachers' traditional lesson notes, comprising subject, content, objectives, instructional materials, specific activities and assessment currently used by the teacher in everyday teaching.

Method of Data Analysis

The data that were generated in this study were classified into pre-test and post-test scores for treatment group. The data were analysed using analysis of variance (ANOVA) using the pre-test scores as covariate. Where the main effect was significant, multiple classification analysis (MCA) aspect of anova was employed to detect the direction of difference between the respective groups of treatment and academic ability.

Findings

Table I:

Analysis of variance ANOVA of Post-Test Mean Score of Students' Achievement in English Language by Students Academic Ability

Source of Variation	Sum of Square	Df	Mean Square	F	Sign.
Covariates	9488.943	1	9488.943	168.403	.00
Pre-test	9488.943	1	9488.943	168.403	.00
Main Effect	2810.150	2	1405.075	24.936	.00
Treatment	2700.218	1	2700.218	47.922	.00
Reasoning ability	38.708	1	38.708	.687	.40
2-Way Interaction	152.105	1	152.105	2.699	.10
Treatment x Academic Ability	152.105	1	152.105	2.699	.10
Explained	12451.198	4	3112.800	55.244	.00
Residual	12001.816	213	56.347	55.244	.00
Total	24453.014	217	1122.678s		

Significant (P. 0.05).

Table II:
Multiple Classification Analysis (MCA) of Pre-Test Mean Score by Treatment and Students' Academic Ability

Variation + Category	N	Unadjusted Dev'n	Eta	Adjusted Independents Coverage Dev'n	Beta
Treatment					
Video	113	6.59		4.26	
Control	105	-7.10		-4.6	
			.65		.48
Reasoning Ability					
High	111	.67		.72	
Low	107	-6.9		-.88	
			0.6		.03
					.503
					.709

Hypothesis I:

There is no significant main effect of treatment on students' achievement in English language.

The ANOVA Table 1 shows that there was a significant main effect of treatment (Video and Control) on students' achievement in English Language ($F \{1;213\} = 47.922, P > 0.05$). Since the value of "F" is significant, it means that the hypothesis on the main effect of treatment (video tape instruction and control) on students' achievement in English Language is rejected. The MCA presented in table II shows that experimental group (video tape instruction) had adjusted mean score of 33.873 ($29.583 + 4.29$), while the control group (conventional method of instruction) had an adjusted mean score of 24.973 ($29.583 - 4.61$). This shows clearly that the experimental group (video type instruction) is significantly better than the control with respect to students' achievement in English Language.

Hypothesis II:

There is no significant main effect of academic ability on students' achievement in English Language.

The ANOVA, as presented in table 1, shows that there was significant main effect of students' academic ability (High and Low) on their achievement in English Language ($F \{1;213\} = 38.708, P < 0.5$). Since the value of "F" is significant, it follows that the hypothesis on the main effect of students' academic

ability on achievement in English language is rejected. The high ability students had an adjusted mean score of 30.303 (29.583 + .72) while the low academic ability student had an adjusted mean score of -.288.703 (29.583-.88) clearly demonstrating that the high academic ability students were significantly better than the low academic ability students with respect to students' achievement in English Language.

Hypothesis III

There is no significant interaction effect of treatment and students' academic ability on students' achievement in English Language.

Analysis of ANOVA, as presented in table 1 revealed that there is no significant interaction effect of treatment and students' academic ability on their achievement in English Language ($F(1, 212) = P > 0.050$). Since the value of F is not significant, it follows that the hypothesis on the interaction effect of treatment and students' academic ability on achievement in English Language is not rejected.

Discussion of Result

According to the findings of this study, there was a significant main effect of treatment (Video and Control) on students' achievement in English Language. The learners taught via video were clearly better in their English Language achievement than those learners instructed with conventional method of instruction (control). The significant better performance of learners in the video tape group is in line with the findings of Sperling (1988), Goldman (1990) and Longe (1991) who claimed that the video is more effective in improving students' achievement than the conventional method of instruction. The significant performance of the learners under video tape instruction is also a confirmation of the assertions of Ortiz (1990) and Salawu (1999) who affirmed video tape as a veritable means of instruction in the classroom. However, this result runs contrary to Kearney (1970) and Barbatsis (1978) who contested the effectiveness of video tape as a means of instruction. But the fact remains that video tape as a means of entertainment or instruction is part of the information technology which has come to create a revolution in the socio-political economic and educational lives of the people in modern societies.

The findings of the effect of treatment on academic ability show that high academic ability students performed more significantly in English Language than the low academic ability students though both were exposed to video tape instruction.

This result is at variance with Osasona's (1987) who found no significance in the performance of both high and low achievers when exposed to video

tape instruction. Osasona's finding may be adduced to the nature of his instrument or the impact of the environment where he conducted his study. The fact remain that high academic ability is an indication of superior intellectual performance which has also reflected in the English language achievement of this set of achievers. Table 1 indicated a value of beta for academic ability as 0.6 which implies that the variations in students' academic ability accounted for 36 percent (0.62×100) of the variation in students' achievement in English language.

Also the study found that there was no significant interaction effect of treatment and students' academic ability on their achievement in English Language. This implies that treatment (video tape instruction and conventional method instruction control) are not sensitive to students' achievement in English language.

Conclusion

The study has shown that students exposed to Video Tape Instruction (VTI) performed significantly better in their achievement in English Language than those students exposed to conventional method of instruction. In the same vein, high academic ability, as revealed by the study boosts students' achievement in English Language as against low academic ability.

In conclusion therefore, the introduction of instructional technology, in the form of video tape instruction has become very necessary in the face of modern technologies, which are gradually overtaking conventional method of teaching. The influence of high academic ability on the achievement of students, which the study found, underscores the need for learners to strive to improve their academic ability since it has proven to be an important factor in English Language achievement.

Recommendations

1. There is need for video tape instruction to be gradually introduced into the teaching and learning process in Nigeria to supplement the existing method of instruction.
2. There is need for secondary schools in Nigeria to be equipped with video tape instructional materials.
3. There is also need for some teachers to be trained on the handling and use of video tape equipment in Nigeria.
4. There is urgent need for educational authorities in Nigeria to re-appraise instructional methodologies in schools.

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