An Empirical Survey of Technology Application in Teaching Geography in Nigerian Secondary Schools

[1]Sofowora O. A. and [2]Egbedokun A.

Abstract

The main thrust of this study was to find out the extent of application of the new technologies in teaching and learning Geography in secondary schools in Nigeria. The present study is very important and necessary because many teachers are still very apprehensive about using the new technologies in instruction. In addition is the fact that, there are little empirical data on the level of preparedness and the extent of utilization of ICTs in instruction in Nigerian secondary schools. This study was therefore carried out to provide empirical data on the extent of the integration of the new technology in teaching and learning Geography in Nigerian Secondary Schools. The study employed the descriptive survey design. The sample for the study is made up of 214 Geography teachers drawn from secondary schools in Osun State. The schools and the teachers were selected through stratified sampling techniques based on school types, location, Local Education Area and gender.

A structured questionnaire was used to collect data from the participants. It was divided into five sections and was validated using construct validity. The co-efficient of reliability was 0.68. The findings showed that 55% of Geography teachers had access to computer but did not have the pre-requisite ICT skills. Out of the modern technologies available for teaching Geography, the most commonly used are: instructional television (54%), instruction radio (59%) and video (59%).Other findings showed that 54% of Geography teachers do not know the instructional value of CDROM/ interactive web packages available free for teaching Geography. Not only this, 84% of the teachers also rarely use the news groups .While 42% rarely make use of multi- media presentation in teaching Geography. Where as many of these facilities are available free on the web for teachers use. Lastly, lack of skills and cost of utilization ranked highest as one of the factors preventing teachers from using the new technologies in teaching Geography.

KEY WORDS *Information and Communication Technologies, Multi-media, instructivist/constructivist approaches, Internet, news group*

Introduction

Of all the subjects in the school curriculum in at secondary level in Nigeria, Geography seems to be the most difficult subject to teach. Some of the reasons put forward are, nature of the subject and the way it is being taught. It is believed that Geography is taught in a way that discourages open questions, inquiry and active participation. The effect of this is that the mind and imagination of students are closed. Adejuyigbe and Majasan (1970) said:

the study of geography from its inception was through verbal description of geographic features, which made the study very abstract and quite uninteresting.

Adesida (1985) also revealed that the undue emphasis on theoretical aspect of Geography to the detriment of scientific and experiential approach had made the subject very abstract and also uninteresting. The resultant effect of all the above is that the subject no longer attracts young scholars due to the dull, uninspiring and stereotyped approach being adopted. Ajaegbuna (1969) criticized those who argued that geography is a dull and difficult subject. He argued that geography lessons are often very dull because there is too much chalk and talk and no enough pupils participation.

Other problems associated with the teaching of Geography in secondary schools in the country are the low enrolment of students in the course and the poor method of communication. Students see Geography as a collection of "dead statements" presented as facts (Ajaegbuna 1969). Not only this, they found Geography concepts confusing and unfamiliar. The skeptical attitudes of their parents and their teachers to the subject have also constituted a problem. The effect is that students run away from the subject. Which have culminated in the low enrolment of students in the subject at the University level in Nigeria.

Balderstone and Lambert (2000) showed that Geography thinking among individual student in secondary schools is confusing and inarticulate. Okunrotifa (1970) also showed that students were just made to learn geography concepts in the abstract form and were subjected to too much imagination of geographic features instead of learning through

[1, 2]Department of Educational Technology Obafemi Awolowo University, Ile-Ife, Nigeria oasofowora@yahoo.com

practical observation. Times Educational supplement (1961) showed the expressed mounted pressure advocating for the removal of Geography from the school curriculum. The blind argument put forward by this group was that, Geography had no divine right to be part of educational experience of young people. Other problems identified include shortage of specialist teachers in the field, non-availability of relevant instructional materials and textbooks.

Ogunranti (1997), Naish et-al (1987) Naish (1988), Leask (1995). Roberts (1996) and Smiths (1997) wrote differently emphasizing the importance of relevant instructional materials and the need to diversify the strategy for teaching Geography. Roberts (1996) suggested that teacher should be discouraged from using didactic method of teaching to a more creative, experiential learning involving project method and to particularly encourage the move towards discovery and investigative approaches in situation well structured by the teacher. Teachers also should be encouraged to be a guide, a facilitator and to abandon the traditional expository approach in favor of an active and open learning.

Smith (1997) also criticizing the teaching strategies employed by most teachers said: "There is sometimes narrowness in the range of teaching methods characterized by over long expositions, over-directed style inhibiting curiosity, initiative and discussion mediated by and through the teacher, all of which reduce opportunities for developing thinking."

It is the belief that the application of appropriate media materials in teaching can help solve the problems faced in the teaching of Geography. It is a long belief in Educational Technology that media materials are essential for effective teaching and learning. Ogunmilade (1984) said Educational Technology can help to rectify the imbalance in the total process of teaching and learning.

Lumsdaine (1963) said where information is difficult to explain verbally, where specific procedure must be performed and the exact interpretation is needed, the use of instructional material will not only illustrate the instructor's concept to the learner but also add emphasis to the essential points. Agun (1982) also opined that instructional materials are the most important devices that teachers can use to enhance the quality of instruction and to diversify teaching.

Arundale (1965) explained that children learn in two-ways, orally and visually. Many of the students however learn more rapidly when oral teaching is linked with something they can see, touch or handle. Arundale explained further that a teacher cannot be certain that his/her verbal description will convey the correct impression especially if he/she finds it difficult to compare the things being described with those things the students are already familiar with. He concluded that this difficulty can be removed immediately if mediated instruction is available. Mclendon (1965) was of the opinion that when used properly, media materials can eject impressions that heighten interest and facilitate the development of appreciation. The research evidence by Dale (1963) summed up the importance of instructional materials in the teaching-learning situation as follows:

- It supplies a concrete basis for conceptual thinking and hence reduces meaningless verbal responses from the student;
- learning is made more permanent and reality of experiences are provided which stimulates self-creativity in the students and continuity of thoughts is developed;
- it reinforces and adds effectiveness to teaching procedure (p. 7).

The implication of the aforementioned option is that Geography cannot be effectively taught if teachers are not adequately skilled in the, planning, design production, selection and usage of relevant instructional materials. Another important implication is that since Geography is believed to be difficult subject to teach, research efforts should be directed towards finding effective methods for teaching the subject.

The Place of Geography in The School Curriculum

The Nigerian Educational System has consistently under-gone far reaching changes since the 1960's. These changes manifest in the introduction of the 6-3-3-4, the new 6-3-9 system of Education, the National Council on Education, the Nigerian Educational Research and Development Council (NERDC), and the Universal Basic Education (UBE). The recent restructuring and the development of the Geography curriculum both at the Junior Secondary School and the Senior Secondary levels are very significant parts of these

changes. The adoption of the new 6-3-9 system of education brought with it some provisions for Geography whose secondary school education terminates at the end of the first three years. Provision was also made for students whose programme will continue for the next three years at the senior secondary school level. Since this study is based on the senior secondary schools, emphasis will be laid on the Senior Secondary School Geography curriculum. The former curriculum was limited to factual, examination-oriented approach, but today, there is greater emphasis on the educational and experiential implications for the students. In the past teachers are much more concerned merely with turning out students who are loaded with facts and terminologies in Geography. Today, the curriculum had changed. It has become a matter of investigation, inquiry and experiential. Emphasis is now placed on the relevance of Geography to life. The new objectives that now guide the formulation of Geography curriculum are:

- teaching of Geography should provide a vehicle for the child development, to help him acquire the art of using knowledge or to learn something about his cultural heritage;
- provide necessary background to citizenship and to intimate the students into a particular mode of thought;
- offer a unique mean of furthering inquiry and high intellectual growth in students;
- to help man to live, place himself in the world and to learn his true position and what his duties are;
- to equip the students to understand other people and their environment;
- develop positive attitudes to race, culture, and to other peoples environments and places; and

Technologies and Methods of Teaching Geography

There are evidences supporting the introduction and use of new technologies in instruction. The World Bank (2004) opined that ICTs should be considered within education for the purpose of reforming curriculum, reinforcing teaching/learning and to improve leaning. The UN Secretary of State (2005) speaking on the role of technology in education said we must ensure that Information and Communication Technologies (ICTs) are used to help unlock the doors of education. As a result, Millennium Development Goals (MDG's) came up with this policy "to co-operate with the private sector, to make available the benefits of new technologies, especially ICTs to increase educational opportunities and unlock the door of education.

As a result of this, new technologies are being disseminated into educational institutions at a rapid rate. For the new technologies to be effectively utilized, teachers at all levels need not only to be proficient in the technologies but must also be well versed in its effective integration into their instruction. The major area Nigeria could meet this expectation is the teacher's preparation in the methods class. It is in the methods class that the students can see their teachers modeling the use or lack of use of the technology. The use or lack of use of the new technologies may widely affect the students in future as regard whether to use them or not. Other problem associated with the new technologies is the preparation of the pre-service teachers and their level of proficiencies in its usage in education. According to Bull, Bell, Mason and Garaofalo (2002) the use of technology in instruction should either be to improve efficiency or to re-conceptualize the curriculum.

Using Technology to Increase Efficiency in the classroom

The use of technology in teacher education to improve classroom efficiency have been supported by several scholars among which are Chickening and & Erhmann (1996) Freeman (1997), Leat and McAleavy (1998), Hepp et-al (2004). According to Kozma et –al (2004) those advocating for the use of technology, describe a range of potential impacts that new technologies have when applied to education. According to Leuhrman (1971) and Bull et-al (2002) technology application in classroom may be in the area of computer assisted instruction under this, Geography teachers may use the new technologies for word processing, grading, record keeping, web page production and lectures.

The use of Technology to re-conceptualize curriculum

In Geography, there have been several efforts at using technology to re-conceptualize the curriculum; prominent among these efforts are the Anneberg Media and the Havard-Smith

Center for Astrology. Others are the National Geography Association, NAGEO and NGWw web-sites. They encouraged the application of ICT using Geography Web-Site and Video. The effort of the Geography Association is also worthy to mention. All these efforts are geared towards encouraging the use of ICT to reform teaching and learning of Geography. The approach used was the constructivist/instructiveist approach. The instructiveist approach emphasizes the use of computer-assisted teaching of skills or Geography knowledge while constructivist approach involve an active process in which teachers are to help learners construct new idea or concepts. The current move at re-conceptualizing geography curriculum emphasizes the combination of both instructiveist and constructivist approach. This is so because we are interested in using technology to help learners learn in a more meaningful and motivating contexts. As a result there has been call for restructuring the curriculum. Balderstone and Lambert (2000) suggested some creative methods like; inquiry method, project method, drama, discussion, modeling, film making and application of ICT. Thomas and Macmahan (1997) observed that teaching thinking is hard and that it demands some changes in teaching style. These scholars therefore call for a better teaching strategy that will provide the learner with concrete and real life experience to exemplify and clarify more meaningfully, some of the principles and concepts in Geography. Huckles, (1997) also spoke about the need to reform the curriculum. According this scholar we must acknowledge the fact the subject has distance itself from the current changes in the society and development in modern curriculum theories and pedagogy. Leat (1997, p. 145) therefore suggested the integration of the new technologies which would make the subject more stimulating and challenging.

Leat and McAleavy (1998) opined that ICT is an essential requirement in teaching Geography. Barnet and Milton (1995) on the need to increase classroom efficiency and reconceptualize the curriculum using technology said.

Two third of those who says they found school completely dull and uninteresting describe working with ICT interesting. Half of those who claim they always behave badly at school get so interest in working with computers that they don't want to stop.

Examples of New Technologies for Teaching Geography.

There are different kinds of product of technology that are useful for teaching Geography. They includes; internet, interactive digital television, video, web-based instruction, Intelligent Tutoring Systems, photography, computers/computer Assisted instruction, video conferencing and discussion group. There are capabilities that CAI can do that other media cannot do. CAI has been found to be very effective in expressing geographical data, cartography, remote sensing, simulation of Geographical System, population forecasting and other Geographical Information Systems. Today, automated and digital maps have replaced the traditional maps. Michael (1969 p. 575) spoke of its advantages:

The evidence clearly indicates that CAI teaches at least as well as live teacher on other media that, there is a saving of time to learn, that students respond favorably to CAI, it can be used to accomplish impossible veracity in branching and individualizing instruction, it will perform miracles in processing performance data.

Wilce (1998), in an article on what is teaching in a new technological future said; Teachers of tomorrow will have no choice but to become web-workers and not suffers, coaches and facilitators, they are not to pass on knowledge but to encourage the development of high ordered skills as source evaluation and data interpretation not to mention the next century's most vital skill of all time management. The educated adults of tomorrow will be those who know how to cut straight to the core of any task and able to sort necessary information from superfluous, manage their time, divide up their lives and set limits on how much time they intend to devote to each part.

The problem of adoption of ICT in Teaching in Nigeria

While there had been a giant attempt at integrating the new technologies into instruction in other advanced countries, Nigeria is not yet fascinated by the potential of technology to enhance teaching and learning. Many of our schools are lagging behind in integrating technology into instruction. Teachers are apprehensive about improving

and modifying instruction by incorporating the new technologies. Perhaps it was the lingering apprehension that made some scholars to oppose/criticize its use in Geography and to conclude that the subject has distance itself from current changes in the society and development (Huckle, 1997). It is against this background that this study was designed to determine the extent to which Geography teachers are using the new technologies in teaching Geography in Nigerian Schools.

Rationale for this study

In the Nigeria there is little empirical data about the level of the preparation of Geography teachers to use the new technologies. Most conclusions about these categories of teachers and technology training are inferred from the general literature. Also there has been no systematic research investigating the use of technology in Geography methods. This therefore gives impetus to determine, if teachers of Geography are using the new technologies in their classrooms. The study is significant in that it will provide information about the current status of utilization of modern technology in Nigerian secondary schools. It will also provide baseline data for future policy regarding technology training and the development of strategic plans aimed at encouraging technology-based innovation in teacher education programs. It is also hoped that this study will trigger off more research studies that will inform/encourage implementation of new technology in teacher education.

Objectives of the Research

The following objectives are addressed in this study. Find out if the Geography teachers are exposed to new technology; whether they are aware of the new technologies and whether they are also available for teaching Geography. Investigate the extent of integration of these new technologies into teaching Geography in secondary schools. Examine the factors that inhibits teachers from using the new technologies and find out the types of the new technology used in teaching Geography in secondary schools.

Research Method

This study employed descriptive survey research design. The sample for the study consisted of 214 geography teachers drawn from secondary schools in Osun State. The schools were selected based on location, local government area, school type (i.e. public or private, rural and urban) while the teachers were selected base on gender and subject. The survey questionnaire was sent to Geography teachers' in Osun State. The questionnaire consisted of open-ended questions divided into five sections namely:-

Section 1 dealt with the demographical data, the second section addressed the teacher's awareness and the technologies available in the schools for teaching, the third section investigated the types of technologies used in teaching geography. While the fourth and the last sections examined the extent of integration of the technologies into Geography curriculum and reasons for not using the new technologies. The questionnaire was validated by team of experts from Educational Foundations and Counseling, Educational Technology Departments and secondary schools teachers that were not part of the sample used for the collection of data. A reliability test was carried out; the reliability coefficient 0.68 was obtained.

Results and Discussion

Accessibility and Exposure to computer as part of the new technologies

Out of the sample only 55% of the teachers were having access to computer while 45% has no access. With reference to schools, the respondents were asked to indicate the availability or otherwise of the technologies. Find below the result of the data analyzed (see Table 1)..

Table 2, revealed the availability or other wise of the most common and the most widely utilized of the technologies. It showed the percentage of teachers having access to some of the technologies for teaching these include instructional television (54%), instructional radio (59%), video instruction (59%). While 84% of the teachers rarely use News group, 54% of the respondents also do not use interactive-web-packages on Geography and 42% also do not use multi-media presentations. This implied that the more sophisticated new technologies are generally unavailable for usage in schools.

From the data analyzed in respect of how often teachers of Geography used technology in teaching the data showed that 75% of the teachers use instructional television while78% use instructional radio and only 55% of them use software educational

packages often (see table 3). It was further revealed that 61% of the geography teachers have no access to Geography Laboratory, as high as 85% have not used Digital camera, and while 84% of them do not know the instructional values of News group. In addition, is the fact that 54% of the teachers have no access to CDROM/ interactive educational resources available for teaching Geography and 46% also have no access to the internet. The above have serious implications and setback for teaching and learning especially with the shortage of modern and relevant text books in the schools. In order to find out the reasons why other teachers do not use specific ICT resources in their classrooms, find below the result of the data analyzed.

Factor of Low Utilization of ICT

From the data analyzed in respect of the factors responsible for low utilization of ICT related resources in teaching Geography in schools, it was gathered that lack of appropriate skills ranked highest. This was followed by cost of using them while lack of time ranked lowest (see Table 4). It therefore implied that Geography teachers in the Nigeria are not equipped with the necessary skills to utilize the new technologies in teaching Geography. However, there are research evidence on the potential of the new technologies in improving classroom teaching and in enhancing higher cognitive outcomes in the learners (Bull et-al 2002, Hepp et –al 2004 and Kozma et-al 2004). The above findings may partly be responsible for the inefficiency, low level of motivation and poor performance of students in Geography examination at the SSCE/WASCE level (WAEC). A critical examination of the West African Examiners Council Report,(see Table 5) right from year 2000 up to 2005, revealed that there had been consistently high rates of students failure in the subject. Other factors responsible for this as reiterated in the Chief Examiners Report are poor methodology of teaching, lack of inadequate use of modern technologies, inability of students to master geography features. If this situation is to be corrected; then there is the need to adopt a more creative and better teaching strategy which will give opportunities to develop higher-ordered thinking and higher performance among the students. There cannot be effective and efficient teaching and learning where students are not motivated. It is believed that if teachers will employ modern technologies in teaching Geography, the subject may be more stimulating and challenging. Hence students will develop positive attitude to it thereby improving their performances.

Conclusion

From the findings of the study, the following summaries are advanced.

Although 55% of the Geography teachers have access to computers but majority of them do not have the pre-requisite ICT knowledge and skills needed. Of the modern technologies available, for teaching Geography in schools are: instructional television, instructional radio and video instruction. While those that are rarely being used are: CD-ROM interactive web packages , Geography software and lastly news group .Lack of appropriate skills and cost of utilization ranked highest as a contributory factor for not using the available technologies in teaching Geography.

In order to promote the use of modern technologies in teaching Geography in schools in the country, the following recommendations were suggested: all categories of teachers must be equipped with the pre-requisite skills in using modern technologies. Future training and development in ICT should focus on its applications and benefits for the teachers and students and not simply on how to use them.

In Nigeria, the present mode of training i.e. training teachers in the use of ICT resources before making it available to them on a day-to-day basis should be discouraged as it will not yield any positive result. Government should come out with an ICT policy and must be backed up financially.

Geography teachers need to update their knowledge about modern approaches to teaching. This could be done through workshop, conferences and seminar. Teachers should be encouraged to apply modern technologies to re-conceptualize the curriculum and make schooling and learning more interesting. To make a success out of this programme, better facilities like steady supply of electricity must be ensured. The present erratic power supply being experienced in the country is not good for technological advancement.

References

Adesina, A.M. (1985), Practice into Theory in the Teaching of Geography in Nigerian Secondary Schools. Thesis Presented to the Faculty of Education, University of Ife.

Adejuyigbe, O and Majasan J.A. (1970) Curriculum Innovation in Nigerian High school Geography. University of Ibadan, Paper presented at the High School Geography conference at University of Ibadan.

Agun, J.I. (1982), The Place of Instructional Materials in Curriculum Development. *Education and Development vol.* 2 (2) 503-510.

Ajaegbuna, H.I. (1969), The challenges to Geographers and Geography Teachers in Nigeria. Paper presented at the High School Geography Conference at University of Ibadan.

Arundale, R.C. (1965), project Work in Religious Education. Wallington Surrey. The Religious Education Press.

Balderstone, D and Lambert, D. (2000), Learning to Teach Geography in the Secondary Schools. Routledge, Taylor and Francis Group: London.

Bland, K, Chambers B. Dannert, K and Thomas, T (1996), Field Work in Bailey, P and Fax, p (eds) Geography, Teachers Handbooks. Sheffield. *The Geography Association* pp 165-175.

Bull, G., Bell, R., Mason, C.L and Grofalo, J (2002), Information Technology and Elementary/Secondary Education Handbook an Information technology for education and training (pp 543-556). In H, Adelsberger, B, Collins and J.M Pawlowsk, (eds.). Heidelberg Germany: Springer-verlag.

Chrisman, E and Bridget J. (1997), Progressive Comparison of the Effect of Computer Assisted instruction. *Journal of Research on computing in Education,* **29**(4), 325-338.

Chickering, A Erhmann, S.C and (1996), "Implementing the seven principles: Technology an Leve" *AAHE Bulletin* 87.

Dale, E. (1963), Audio Visual Methods in Teaching (Revised Edition) New York. The Dryden Press.

Fieldhussen, J. and Michael, S. (1969). A Review of Development in Computer Assisted Instruction in Wittich, and Schuller, (eds.). Educational Technology its Nature and use. New York: Harper and Raw.

Freeman, D (1997) Using Information Technology and The New Technology in Geography. In Tilburg, D and William, A.N. (eds.). Teaching and Learning Geography London; Route ledge pp 202-217.

Hepp, P; Hnostroza, J, Erique; L, Ernesta and Rehbein, L. (2004), Technology in Schools: Education, ICT and the knowledge Society. Washington: World Bank (http://www/.world bank.org/education/pdf/ICT-report-oct04.

Kozma, R., McGhee, R., Quellmalz, E and Zalles, D. (2004). Closing the Digital Divide: Evaluation of the World Links program. *International Journal of Educational Development*, **24**(4), 361-381.

Leat, D, and McAlleavy, T. (1998), Critical Thinking in the Humanities. *Teaching Geography* **21**(2), 112-114.

Least, M. (1995), Teaching styles in Learning to Teach in the Secondary School. A companion to school Experience. London: Rout ledge pp 245-255.

Lumsdaine, A.A. (1963), Instrument and Media of instruction. Handbook of Research in Reaching. American Education Association Chicago: Rand McNally.

McClendon J.C. (1965), Social Studies in Secondary School Education. New York: Macmillan Company Ltd.

Naish, M. Rawling, E and Hort, C. (1987), The Contribution of a Curriculum Project in Geography Longman.

Naish, M. (1988), Teaching Styles in Geography in R, Geber and J, Lindstone (ed) *Developing skills in Geography Education* pp 11-19.

Ogunmilade, C.A. (1984) Media in Education University of Ife Press, Ile-Ife.

Ogunranti, A (1979), Educational Technology ACE Publication Series Ibadan University Press.

Okunrotifa, P.O. (1970), Programmed Learning in the Teaching of Geography. *West African Journal of Education*, **14**(30), 283-293.

Roberts, M. (1996), Teaching Styles and Strategies In A; Kent, D. Lambert, M. Naish and F, Slater (eds.). View points on Teaching and Learning Geography in Education. Cambridge: Cambridge University Press. Pp. 231-259.

Smiths, P. (1997), A review of Geography in Secondary Schools in England. *Teaching Geography* **22**(3), 123-124.

Thomas, S. and McMahan, P. (1997), Geography makes you think. *Teaching Geography* **22**(3), 114-118.

Times Educational/supplement (1996), Historians want to curb the Growth of Geography.

United Nations (2005), Millennium Development Goals. New York: UN http://www.un.org/apps/neas /story/asp?

Table 1: Access to Computer

Options	%
Yes	55
No	45

Table 2: Availability of various technologies

	Available	**Not Available**
Instructional Television	54.0%	46%
Instructional Radio	59%	41%
Internet	43%	56%
Email	41%	59%
Accessing information on the web	44%	56%
CD ROM	15%	85%
Video instruction	59%	41%
Multi-media presentations	49%	51%
Digital maps	32%	68%
Digital camera	43%	57%
Lesson plan using Geography software	20%	80%
Accessing the Annenberg Media and Harvard-Smith Center for Astrology	8%	92%
Geography Laboratory	59%	41%
ICT Information & Resource Centre	45%	55%
News group	16%	84%
Display system		
Accessibility to Geography Society web-site	33%	67%
Self-interactive packages	33%	67%

Table 3: How often teachers utilize Technology in teaching Geography in schools.

	Often	**One in while**	**Rarely**
Internet and www	25%	29%	46%
E-mail	30%	32%	38%
Software educational packages	55%	36%	9%
Instructional Television	75%	17%	8%
Instructional Radio	78%	15%	7%
Video instruction	25%	30%	45%
News Group	6%	10%	84%
Digital camera	5%	10%	85%
Multi-media presentation	40%	28%	42%
Geography laboratory	13%	26%	61%
Accessing information from CD-ROM resources /interactive web packages	13%	33%	54%

Table 4: Why I do not use New Technology in teaching Geography .

	Lack of skills	**Not accessible**	**Not familiar with**	**Not appropriate**	**cost of using/ purchase**	**Lack of technical support**	**Lack of time**	**I don't feel like**
Internet/www	28%	28.9%	6.5%	4.2%	5.1%	1.9%	10.4%	15%
E-mail	38.2%	9.3%	7.9%	6.1%	9.6%	22.0%	3.5%	3.4%
Instructional Television	12%	34%	7%	12%	24%	6%	1.5	3.5%$
Software educational packages	53%	8%	13%	6%	10%	5%	2%	3%
Multi-media presentation	46%	12%	11%	5%	18%	3%	4%	1%
CD-ROM resources	61%	2%	13%	6%	10%	3%	2%	3%
News Group	49%	5%	12%	15%	5%	7%	3%	4%
Geography Laboratory/resource centre	50%	16%	4%	6%	10%	5%	2%	3%
Lesson plan using Geography software	66%	1%	13%	9%	6%	8%	3%	4%
Digital maps	57%	4%	14%	9%	6%	6%	4%	2%
Self-interactive packages	43%	5%	12%	8%	15%	3%	4%	7%

Table 5: Performance of Senior Secondary School Students in WAEC Examination in Geography 2000-2005

YEAR	**TOTAL**	**NUMBER (%) OBTAINNING GRADE**											
		CREDIT AND ABOVE							**PASS**			**FAIL**	**NO OF ABSENT AS (%) OF ENTRY**
		1	2	3	4	5	6	1-6	7	8	7-8	9	
2000	372,665	1,9040.55	2,772 0.81	15,305 4.46	10,541 3.07	11.106 3.23	31,724 9.24	73,352 21.36	51,58615.02	60,88017.73	112,446 632.75	157,562 45.89	29,285 7.86
2001	7,815	5 0.06	14 0.81	81 1.04	59 0.75	226 2.89	1,912 24.47	2,297 29.39	2040 26.10	1889 24.17	3929 50.28	1589 20.33	85 1.08
2002	475,649	3,2900.69	4,632 0.97	20,627 4.33	14,916 3.13	16,486 3.46	42,321 8.89	102,272 21.50	77743 16.34	86,466 18.17	164,209 34.52	209,168 43.97	55,950 10.52
2003	484,508	1,58 0.0	823 0.2	10,559 2.2	11,439 0.5	13,177 2.7	16,766 3.5	53,256 11.0	94,740 19.6	66,970 13.8	78,190 16.1	140,199 47.7	16,218 5.2
2004	345,617	1,4720.43	4,224 1.22	30,664 8.87	14,605 4.23	23,817 6.89	60,699 17.56	135,477 39.20	42,046 12.17	41,484 12.00	83,530 24.17	126,610 36.63	12,063 3.37
2005	434,315	88 0.0	4,27 0.1	6,216 1.4	8,211 1.9	11,011 2.5	39,480 9.1	65,433 15.0	57,494 13.2	86,516 19.9	144,010 33.1	224872 51.9	4,859 1.1

Source: West African Examinations Council Test Development Division