AKINDOJU, Olugbenga Gabriel Computer And Internet Browsing Proficiency Of Science Teachers And Students In Lagos State Science *Journal Of Educational Media and Technology Vol. 12 No 2 2006*

# COMPUTER AND INTERNET BROWSING PROFICIENCY OF SCIENCE TEACHERS AND STUDENTS IN LAGOS STATE

BY

**AKINDOJU, Olugbenga Gabriel**

*Department of Curriculum Studies,*

*Faculty of Education,*

*Lagos State University, Ojo.*

## Abstract.

*The study was carried out to ascertain the computer utilization and internet browsing proficiency of science teachers and students in Lagos State Secondary Schools. Adopting survey type of descriptive research design, questionnaire was administered on a sample of 1000 senior secondary school science students and 120 science teachers randomly selected from twenty public senior secondary schools in Lagos state. Data collected were analyzed using simple percentage, frequency counts and graphical illustrations. Results from the analysis of data collected revealed among others that both science teachers and students have low proficiency in computer operation and utilization, and internet browsing. However, the sampled students have higher proficiency in internet browsing than their teachers. Based on the findings of the studies, several recommendations are put forward towards to integrating the use of computer and the internet for effectiveness and efficiency in science teaching and learning.*

## Introduction

**Technology is increasingly being harnessed to improve the quality of learning in science subjects at all levels. Advances in technology in the last two decades have led to the development of computer networks that allow access to vast amount of**

information and services (Glowniak, 1995). Of the many computer networks that have been developed, the most prominent and widespread is the internet, a global network of networks that enables computers of all kinds to directly and transparently communicate throughout the world. This global network of networks has been described as the 'information super-highway' or 'Infobahn' because it constitutes a shared global resource of knowledge, and means of collaboration and co-operation in diverse communities.

As in many other fields, the internet is also present in the education domain. The development of the internet, as a vehicle for world-wide communication, and the emergence of the World Wide Web, has made instantaneous access to much of the entire body of education an exciting one. According to Kian-Sam, Kwok-Wing & Derek (2001), web based learning is a unique learning and instructional delivery system with which educators are experimenting (Khan, 1997). The resulting potential for change and innovation in approaches to delivery of instruction are astounding and continually expanding (Collis, 1996, Schutte, 1997). Schools from elementary levels to universities are using the web and the internet to supplement classroom instruction, to give learners the ability to connect information (instructional and other resources) and to deliver learning experiences. The internet is reorganizing approaches to education and altering communication patterns society, affecting the educational system.

The internet is now one of the most sources of information for students in institutions of higher learning throughout the world and has also become a popular medium for delivering educational materials. Medical and nursing for examples who have participated in online education have stated that this mode of education has several advantages over traditional method of instruction. These advantages include the convenience of taking a course at a time that fitted students schedule and at a place that they did not have to commute to attend (Grimes, 2002). Online learning also assists students with practical application of theoretical knowledge of some aspects of medicine such as cardiology (Hayward & Carins, 2002).While several researches have explored the extent to which science students use internet services in many countries, few of such studies are currently available in Nigeria. It becomes pertinent for this study to fill the gap by assessing the level of computer and internet use amongst students and teachers in Lagos state.

## Purpose of the Study

The purpose of the study was to ascertain the computer and internet browsing proficiency of science teachers and students in Lagos State.

## Research Questions

1. What is the competence level of science teachers and students in basic computer operation?
2. What is the competence level of science teachers and students with the worldwide web and e-mail?
3. What is the competence level of science teachers and students in internet based technologies.

## Research Design

The study adopted survey type of descriptive research design to obtain information from science teachers and students on how competent they are in using the computer and the internet.

## Population and Sample of the Study

The target population of the study comprised science teachers and students from secondary schools in Lagos State while the accessible population comprised of science teachers and students from 5 local government areas of Lagos State.

A total of twenty secondary schools were randomly selected from the five local government areas. In each of the schools, 50 science students and six science teachers were involved in the study, making a total of 1000 science students and 120 science teachers with different background.

## Instruments for Data Collection

The instrument used in the study was a self assessment questionnaire. This questionnaire has four sections, each seeking information on the following indices:

- General Computer skills
- Experience with www and e-mail
- Desktop competencies
- Internet based technology competencies

## Procedure for Data Collection

All the twenty schools used were personally visited for permission and necessary arrangement with the science teachers and students.

The questionnaire was personally administered in all the schools. The researcher was assisted by some undergraduates who had been adequately briefed on data collection techniques. The questionnaire was administered within a period of two weeks.

## Data Analysis Technique

Data collected were analyzed using frequency counts, simple percentage and graphical illustrations.

Table I: Computer Operation Skills of Science Teachers and Students

| Teachers Response | | | | | | | |
|---|---|---|---|---|---|---|---|
| Questionnaire Item | | NO EXPERIENCE | | SOME EXPERIENCE | | EXPERIENCED | |
| | | No | % | No | % | No | % |
| 1 | Level of experience with word processing | 72 | 60 | 34 | 28.3 | 14 | 11.7 |
| 2 | Experience level with Spreadsheet | 78 | 65 | 32 | 26.7 | 10 | 8.3 |
| 3 | Level of experience with Graphic electronic presentation | 92 | 76.67 | 25 | 20.83 | 3 | 2.5 |
| Total | | 242 | 67.2 | 91 | 25.27 | 27 | 7.5 |

| Students Response | | | | | | | |
|---|---|---|---|---|---|---|---|
| Questionnaire Item | | NO EXPERIENCE | | SOME EXPERIENCE | | EXPERIENCED | |
| | | No | % | No | % | No | % |
| 1 | Level of experience with word processing | 810 | 81 | 180 | 18 | 10 | 1 |
| 2 | Experience level with Spreadsheet | 720 | 72 | 270 | 27 | 10 | 1 |
| 3 | Level of experience with Graphic electronic presentation | 900 | 90 | 90 | 9 | 10 | 1 |
| Total | | 2430 | 81 | 540 | 18 | 30 | 1 |

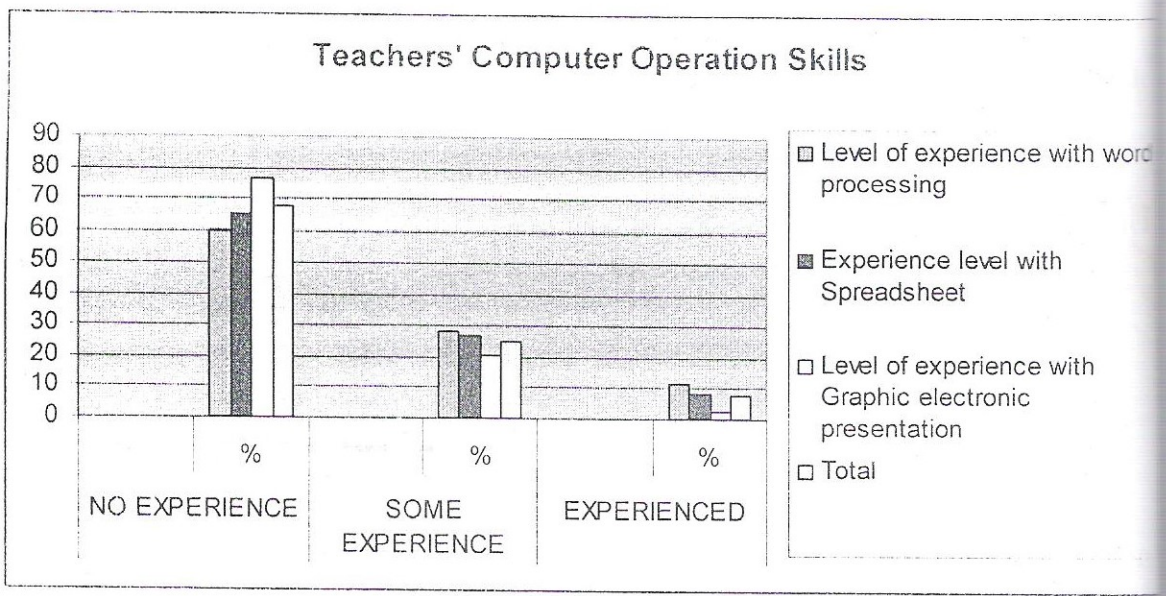


Fig. I: Teachers' Computer Operation Skills

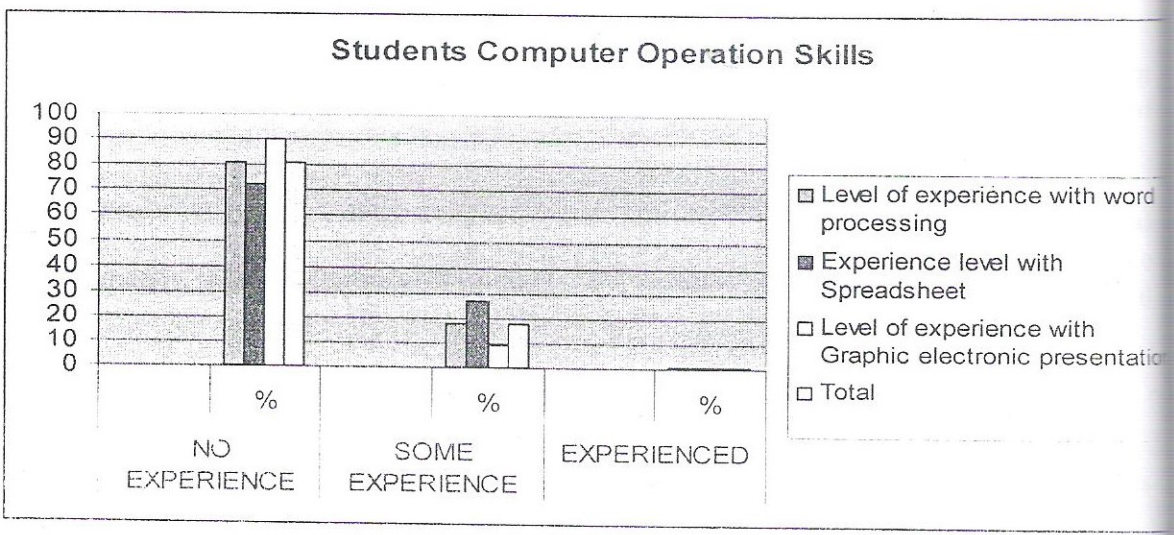


Fig. II: Students' Computer Operation Skills

Table II: Science Teachers and Students experience with www and e-mail

| Teachers Response | | | | | | |
|---|---|---|---|---|---|---|
| Questionnaire Item | | NO EXPERIENCE | | SOME EXPERIENCE | | EXPERIENCED |
| | | No | % | No | % | No | % |
| 1 | Level of experience with worldwide web | 72 | 60 | 20 | 16.7 | 28 | 23.33 |
| 2 | Experience level with e-mail | 24 | 20 | 54 | 45 | 42 | 35 |
| 3 | Experience creating web pages | 108 | 90 | 10 | 8.33 | 2 | 1.67 |
| Total | | 204 | 56.7 | 84 | 23.3 | 72 | 20 |
| Students Response | | | | | | | |
| Questionnaire Item | | NO EXPERIENCE | | SOME EXPERIENCE | | EXPERIENCED | |
| | | No | % | No | % | No | % |
| 1 | Level of experience with worldwide web | 100 | 10 | 700 | 70 | 200 | 20 |
| 2 | Experience level with e-mail | 20 | 2 | 800 | 80 | 180 | 18 |
| 3 | Experience creating web pages | 860 | 86 | 120 | 12 | 20 | 2 |
| Total | | 980 | 32 | 1620 | 54 | 400 | 13.3 |

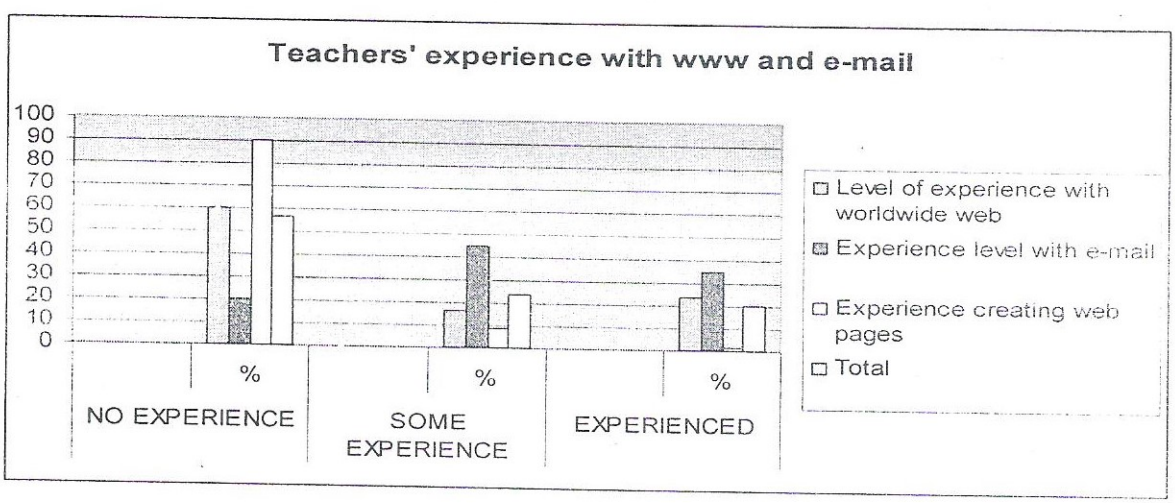


Fig. III: Teachers' experience with www and e-mail

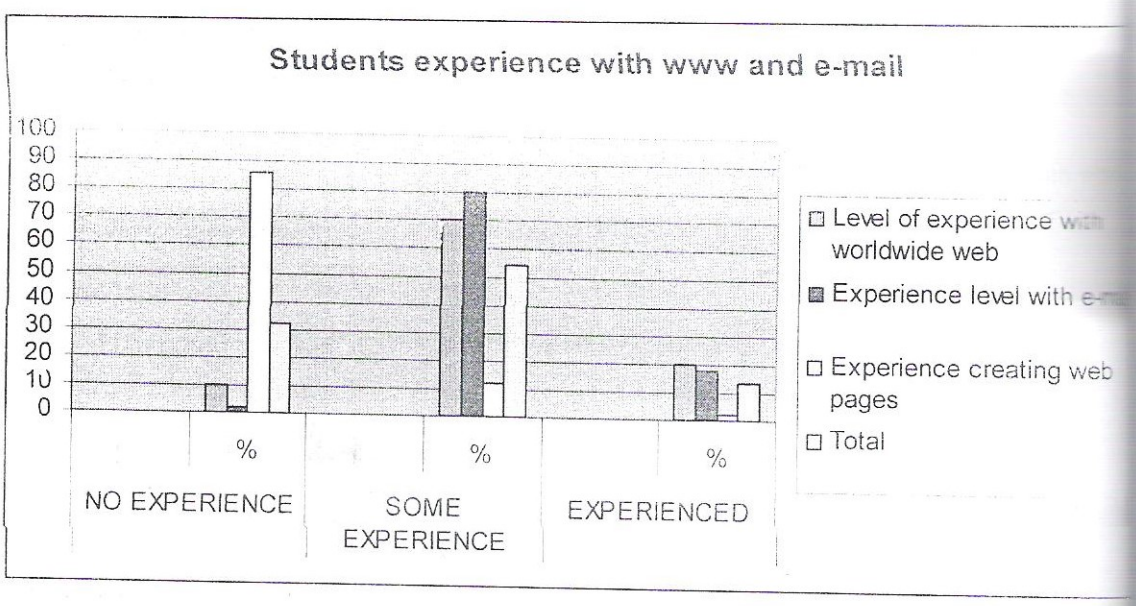


Fig. IV: Students experience with www and e-mail

Table III: Computer Operation Skills of Science Teachers and Students

| Teachers Response | | | | | | | |
|---|---|---|---|---|---|---|---|
| Questionnaire Item | | NO EXPERIENCE | | SOME EXPERIENCE | | EXPERIENCE | |
| | | No | % | No | % | No | % |
| 1 | Set up the computer system | 96 | 80 | 16 | 13.3 | 8 | 6.7 |
| 2 | Keyboard Mastery | 93 | 77.5 | 18 | 15 | 9 | 7.5 |
| 3 | Windows operation | 60 | 50 | 44 | 36.7 | 16 | 13.33 |
| 4 | File Management | 82 | 68.3 | 12 | 10 | 26 | 21.7 |
| Total | | 331 | 68.9 | 90 | 18.7 | 59 | 12.3 |
| Students Response | | | | | | | |
| Questionnaire Item | | NO EXPERIENCE | | SOME EXPERIENCE | | EXPERIENCE | |
| | | No | % | No | % | No | % |
| 1 | Set up the computer system | 850 | 85 | 80 | 8 | 70 | 7 |
| 2 | Keyboard Mastery | 700 | 70 | 260 | 26 | 40 | 4 |
| 3 | Windows operation | 300 | 30 | 420 | 42 | 280 | 28 |
| 4 | File Management | 605 | 60.5 | 75 | 7.5 | 320 | 32 |
| Total | | 2455 | 61.38 | 835 | 20.87 | 710 | 17.75 |

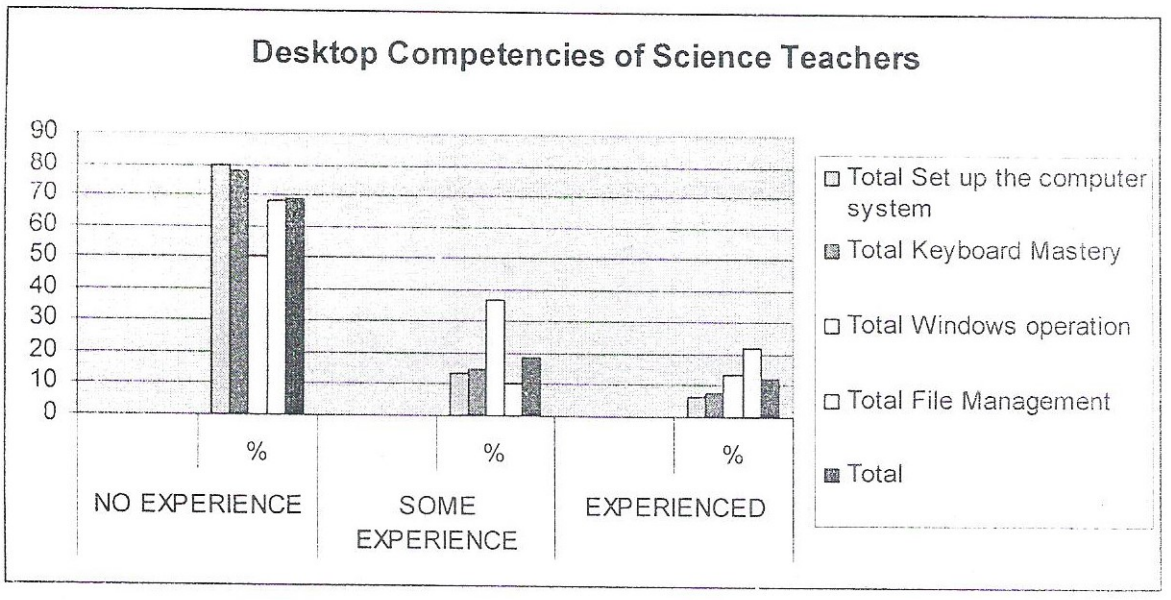


Fig. V: Teachers Desktop Competencies

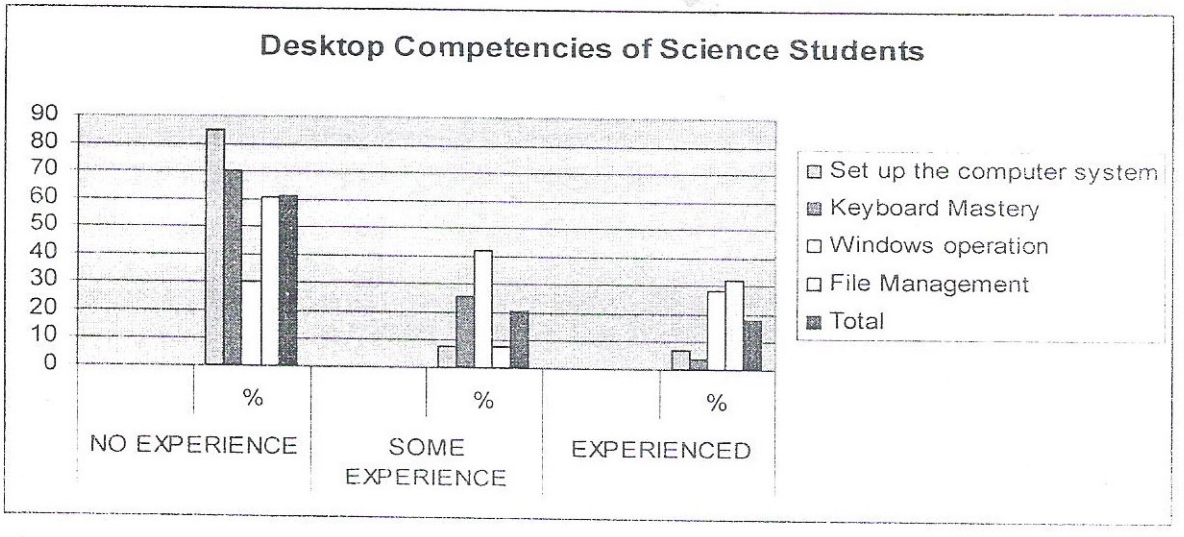


Fig. VI: Desktop Competencies of Science Students

**Table IV: Internet Competencies of Science Teachers and Students**

| Teachers Response | | | | | | |
|---|---|---|---|---|---|---|
| Questionnaire Item | | NO EXPERIENCE | | SOME EXPERIENCE | | EXPERIENCE |
| | | | | | | |
| 1 | Subscribe and unsubscribe for online discussion group | 76 | 63.3 | 12 | 10 | 32 | 26.7 |
| 2 | Familiar with web browser and how to use it to move between pages | 88 | 73.3 | 20 | 16.7 | 12 | 10 |
| 3 | Can search for, validate, and cite web based information | 82 | 68.3 | 30 | 25 | 8 | 6.7 |
| 4 | Can organize, design and create a website for my school | 108 | 81.7 | 10 | 8.33 | 2 | 1.67 |
| Total | | 354 | 73.75 | 72 | 15 | 54 | 11.25 |
| Students Response | | | | | | | |
| Questionnaire Item | | NO EXPERIENCE | | SOME EXPERIENCE | | EXPERIENCE | |
| | | No | % | No | % | No | % |
| 1 | Subscribe and unsubscribe for online discussion group | 520 | 52 | 300 | 30 | 180 | 18 |
| 2 | Familiar with web browser and how to use it to move between pages | 570 | 57 | 300 | 30 | 130 | 13 |
| 3 | Can search for, validate, and cite web based information | 780 | 78 | 120 | 12 | 100 | 10 |
| 4 | Can organize, design and create a website for my school | 860 | 86 | 100 | 10 | 40 | 4 |
| Total | | 2730 | 68.25 | 820 | 20.5 | 450 | 11.25 |

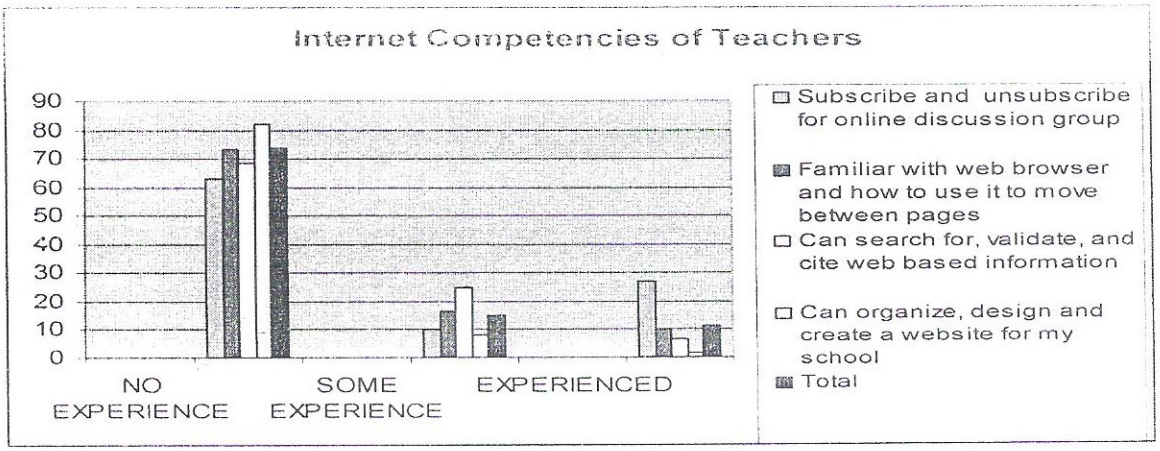


Fig. VII: Internet Competencies of Science Teachers

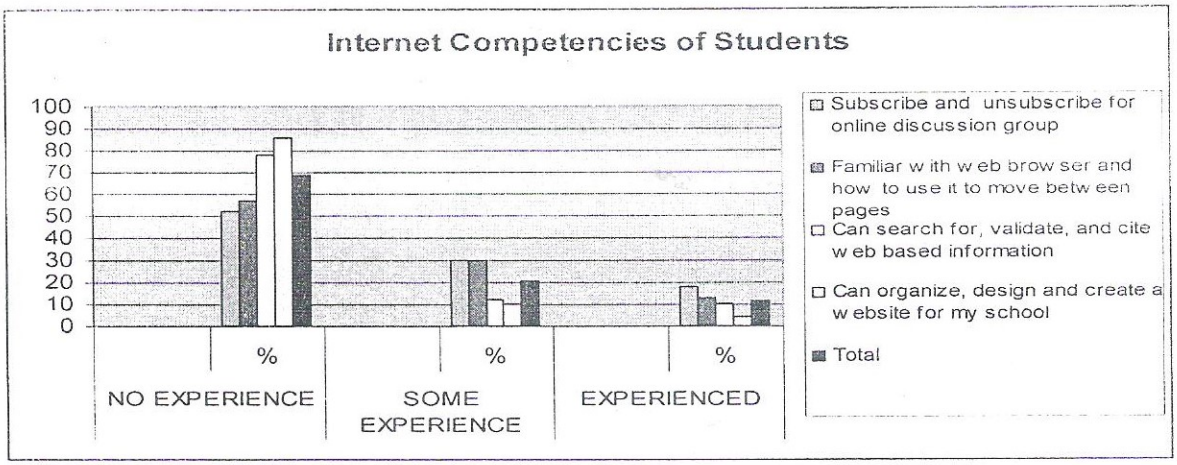


Fig. VIII: Internet Competencies of Science Students

## Discussion of Results

From the results of the study as presented in Tables I-iv and figures 1-8, it is obvious that science teachers and students in Lagos State have a lot to learn in computer operation for them to be able to explore the internet maximally for teaching and for teaching and learning purposes.

These results cannot be dissociated from other problems such as availability and accessibility of computer technology and internet facilities. Even when these technologies are available, they are never adequate compare to population of teachers and students, and other limiting factors such as electricity supply.

Teacher development programme should show teachers how to create more situations where students engage in high-order thinking. Simply showing teachers how to use computer applications and the internet is not likely to accomplish that.

The internet increases access for all students to information not known to teachers and, therefore, increases the opportunities for teachers to learn from students. Teachers who are predisposed to being taught by students can plan accordingly.

**It is logical to believe that students with internet access at home have an advantage over students who do not. Even though it may not be possible to eliminate the entire advantage, teachers should provide additional time online to students who lack access at home without awarding higher grades for papers printed on home computer systems.**

## Conclusions

Based on the findings of the study, the following conclusions were drawn:

- The level of experience of science teachers and students in Lagos State in Computer office application is low
- Students have higher level of experience with the worldwide web and e-mail than the science teachers
- Few science teachers are familiar with the use of the desktop and window operation compared with students.

## Recommendations

**In order to improve the computer and internet browsing skills of science teachers and students, the following recommendations were put forward:**

- **Teachers should make effort to acquire computer knowledge to enhance their teaching/learning processes.**
- **Government should make special provisions for computer hardware and software for science and other subjects**
- **Adequate provision and training on how to make best use of the computer for teaching and learning should be made for teachers.**
- **Teachers' re-training programmes should emphasize helping teachers to use computer based technologies for effective teaching and learning.**

## References


Collis, B. (1996) *Tele-learning in a Digital World: The future of Distance Learning.* London: International Thomson Computer Press

Glowniak, J.V (1995) Medical resources on the internet. *Ann Intern Med,* 123(3), 123-131

*Grimes, E.B.* (2002) Students' perceptions of an online dental terminology course *Dent Edu*, 66(1), 100-107.

Hayward, L.M & Carins, M.A. (2002) Allied health students' perceptions of and experiences with internet based study instruction. *J Allied Health*, 30(4), 232-238.

Hong Kian-Sam, L.K & Holton, D (2001) Web based learning environments: observations from a web based course in a Malaysian context. *Australian Journal of Educational Technology*, 17(3), 223-243. http://www.ascilite.org.au/ajet17/hong.html.

Khan, N (1997) *Web based Instruction.* Englewood Cliffs, NJ: Educational Technology Publications

Schulte, J.G (199) Virtual teaching in higher education: The new intellectual superhighway or just another traffic jam? [Verified 2 Nov 2001] http://www.csun.edu/sociology/virexp.htm