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Computer Assisted Instruction (CAI) and Learning in Public Secondary Schools in Lagos State

SAMPLE AND SAMPLING

The sample comprised of 300 secondary schools in Lagos State Public Schools. The schools were selected on equal gender basis. ... 300 schools were used out of which 150 schools were picked from each group of Junior and Senior Secondary Schools and Lagos State. In each of these schools twenty students and five teachers have picked, making a total of 12,000 students and 1,500 teachers.

RESEARCH HYPOTHESES

- (1) There will be no significant difference between the extent to which Computer assisted Instruction has a affected performance of teaches in classrooms in Lagos State.
- (2) There will be no significant difference on how the computer has assisted improved academic performance of secondary schools students.
- (3) There will be no significant difference between the factors that militate against the availability of Computer Assisted Instruction in school enrolment in Lagos State.

BACKGROUND

The challenge of integrating Computer Assisted Instruction (CAI) is the duty of teachers. CAI has great potential for enhancing teaching and learning as well as improving the performance of students. If teachers and government can realize the impact of CAI on students performance they are bound to respond spontaneously to this move. There are a lot of challenges that advanced technology is bringing to human development. With the changing in the mode of dissemination of information, it is expedient that the revolution of technology in instruction should attract the attention of teachers. Government is expected to organize training or sponsor teachers on the use of computer for instructions, such training must have follow up for proper and constant application the result of such training is expected to improve academic performance. Nwaboku (2003), asserts: *"Computer competence is mandatory and inevitable in the contemporary society for technological advancement has never been subject for debate. The issue of concern had been the slow rate of introduction of the computer into the social system of the developing third world countries. These countries have made efforts in the last decade to catch up on the use of computer."* Based on the above, it is obvious that the third world countries are not ignorant of existence of Computer Technology, but the pace at which this technology is being embraced may not yield any fruitful result therefore Social and Educational value of Lagos State can not make any tangible progress in this century. More over one needs to realize that almost everything in our society is taken with levity and careless attitude in application will not yield any good result. It is also important to point out that Conventional Instruction mode is no doubt progressively giving way to more sophisticated and convenient mode due to the development of modern information and communication technology. There is also no doubt that application of Computer Assisted Instruction will go a long way to facilitate teaching and learning in schools. In his finding through the use of Computer assisted Instruction in America Kathleen (2007) reported that: *"The following is a list of reasons given by students for liking CAI activities and or favoring them over traditional learning. These students preferences also contribute to our outstanding of why CAI enhances achievement students like working with computers because computers are infinitely patient, Never get tired, Never get frustrated or angry, allow students to work privately, Never forget to correct or praise, are fun and entraining, individualize learning, are self paced..."* In this funding. It then becomes clear that students performance, achievement and high rate of thinking will be greatly boosted if Computer Assisted instruction is applied... As reported by a researcher in Taiwan who conducted a research on English Teachers Barriers to the use of Computer Assisted Language Learning, Kiang-wu Lee (2000) believes that Engaging in Computer-assisted language learning is a continuing challenge that requires time and commitment. As we approach the 21st century we realize that technology as such is not the answer to allow problems. What really matters is how we use technology". Another important aspect of CAI is in the making use of soft ware packages to bring about effectiveness. "Software is the electronically encoded instructions that tell computer hardware what to do. Software is what makes the computer worthwhile". (Briank Willaims and Stacey Sawyer 2005). Software is another name for a programme or programmes. The purpose of software is to convert data (unprocessed facts) into information processed (processed facts). Software is of two types, these are system software and application software system software helps computer perform essential operating task and enable the application software to run: system software consists of several electronically coded programs. The most important is the operating system, the master control program that runs the computer. Examples of operating system software for the PC are various Microsoft Program (such as window s 95, 98, Me, XpanelNT). Application software enables you to performance

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specific tasks-solve problems, perform work, or entertain yourself. For example when you prepare a term paper on your computer, you will use a word processing program (Microsoft Word and Corel Word Perfect are two brands). Almost all of today's computer system add an additional part to the information system. This part is called connectivity which allows to connect and share information. Teachers ought to know that by getting themselves familiar with the use of computer will afford them opportunities to prepare different packages for learning. There are a lot of educational software application for learning, out of which teachers can borrow ideas to improve and produce their own packages. Thousands of software applications have been developed over the years, many are produced and can be assessed freely to meet specific educational objectives including:

- (a) Strengthening subject matter competence.
 - (b) Providing drill and practice activities for different subjects.
 - (c) Enhancing logical thinking and problem solving skills.
 - (d) Enriching search and writing activities
 - (e) Stimulating complex or dangerous processes that enable students to change variables and visualize how processes are change and
 - (f) Providing opportunities for students to extend learning beyond the scope of classroom activities.
- Meanwhile, it is possible for teachers to integrate activities into course content, objectives and assignments.... interactive experience will bring innovation into methods of given instruction on courses which will provide teachers with the foundation and confidence to use computer in he classroom.

METHOD AND INSTRUMENT

The instrument used for data collection is made up of a questionnaire administered on some teachers and students in 300 secondary schools in Lagos State. The questionnaire was designed to seek information based on the research questions raised by the researcher. The questionnaire is made up of 15 items which were meant to make enquiry on the level of CAI in secondary schools in Lagos State. For the responses to the questionnaire the scale of 4 points was used. This requires strongly Agree (S.A) Agree (A) Disagree (D) and Strongly Disagree (S.D). The responses indicated his/her opinion or attitude by ticking right the scale in the appropriate section. All the copies of questionnaires administered were recovered because the investigator waited and collected them back on completion. The usual problem of not returning questionnaire by respondents or indifference to issues of this type was not experienced in any manner.

RESULT AND ANALYSIS OF DATA RESEARCH HYPOTHESIS 1

There will be no significant difference between the extent to which computer Assisted Instruction has affected performance of teachers in Lagos State.

Table 1: Teachers' response on Computer Assisted Instruction and learning in Secondary Schools in Lagos State.

S/N	STATEMENT	SA	%	A	%	D	%	SD	%
1.	Is there any computer centre in your school	120	8.0	140	9.3	410	27.3	830	55.3
2.	I always have access to computers in the centre.	110	7.3	140	9.3	470	31.3	780	52.0
3.	There are adequate computers in the centre.	105	7.0	155	10.3	430	28.7	8.0	54.0
4.	The computer centres always open for long and satisfactorily period of time.	90	6.0	120	8.0	440	29.3	850	56.7
5.	The computers in my school are functioning well.	115	7.7	134	8.9	48.6	32.4	765	51.0

Computer Assisted Instruction (CAI) and Learning in Public Secondary Schools in Lagos State

Table II: Students' response on Computer assisted Instruction and learning in Secondary Schools in Lagos State

S/N	STATEMENT	SA	%	A	%	D	%	SD	%
1.	There are computer centres in my school.	960	8.0	720	6.0	3420	28.5	6900	57.5
2.	I always have access to computers in the centre.	720	6.0	1230	10.3	3720	31.0	6330	52.8
3.	There are adequate computer in the centre.	1560	13.0	840	7.0	3060	25.5	6180	51.5
4.	Computer centre always open for long and satisfactory period of time.	1800	15.0	1560	13.0	3000	25.0	5640	47.0
5.	The computer in my school are functioning well.	1320	11.0	1020	8.5	2120	26.0	6540	54.5

Base on the information provided by this table it is evident that CAI has not been affecting teaching and learning in secondary schools in Lagos State. Therefore the null hypothesis is rejected which states that there will be significant difference in students academic performance and teachers' level of effectiveness.

RESEARCH HYPOTHESIS II

There will be no significant difference on how the computer has assisted improved academic performance of secondary school students.

Table II: Teachers' response on computer assisted instruction and learning in secondary schools in Lagos State

S/N	STATEMENT	SA	%	A	%	D	%	SD	%
1.	CAI was lately introduced in my school.	650	43.3	480	32.0	220	14.7	150	10.0
2.	Teachers are usually given enough time to teach through the computers.	700	46.7	390	26.0	260	17.3	150	10.0
3.	Computers are used for instruction in all courses.	900	60.0	400	26.7	120	8.0	80	5.3
4.	The late introduction of CAI has not really aided academic performance.	700	46.7	540	36.0	160	10.7	10	0.7
5.	The no of available computers has not really aided students remarkable academic performance in their subjects.	830	55.3	410	27.3	140	9.3	120	8.0

Table II: Students' response on Computer assisted Instruction and learning in Secondary Schools in Lagos State.

S/N	STATEMENT	SA	%	A	%	D	%	SD	%
1.	CAI was lately introduced into my schools.	6300	52.5	4200	35.0	600	5.0	900	7.5
2.	Students are not usually given enough time to learn through the computers.	6480	54.0	3480	29.0	1080	9.0	960	8.0
3.	Computers are not use for instructional causes.	5640	47.0	3840	32.0	1440	12.0	1080	9.0
4.	The late introduction of CAI has not really aided students in my school's students' performance remarkably.	5760	48.0	3840	32.0	1500	12.5	900	7.5
5.	The number of available computers do not really aided students academic performance remarkably.	5320	46.0	4200	35.0	1440	12.0	840	7.0

From the table above it could be seen that both students and teachers strongly agree and agree with the fact that CAI was lately or not introduced into their schools and where there are computers both teachers and students are not having enough time and opportunity to use them for instruction. Also it is obvious that some

students and teacher don't even have clear understanding of what CAI is, therefore the null hypothesis is rejected which means there will be significant difference on how CAI can improve academic performance of secondary school students.

RESEARCH HYPOTHESIS III

There will be no significant difference between the factors that militate against the availability of Computer Assisted Instruction.

Table III: Teachers' response on computer assisted instruction and learning in secondary schools in Lagos State.

S/N	STATEMENT	SA	%	A	%	D	%	SD	%
1.	Inadequate funding of schools militates Lagos State.	720	48.0	490	32.7	170	11.3	120	8.0
2.	Vandalization of CAI equipment's militate against CAI in my school.	810	54.0	440	29.3	140	9.3	110	7.3
3.	Poor orientation of teacher about CAI militate against CAI in my school.	780	52.0	470	31.3	150	10.0	100	6.7
4.	Lack of maintenance culture militate against CAI in my school.	760	50.7	500	33.3	130	8.7	110	7.3
5.	Government policy towards CAI militates against CAI in my school.	800	53.3	420	28.0	150	10.0	130	8.7

Table III: Students' response on Computer assisted Instruction and learning in Secondary Schools in Lagos State.

S/N	STATEMENT	SA	%	A	%	D	%	SD	%
1.	Inadequate funding of schools militate against CAI.	8520	71.0	28.20	23.5	360	3.0	300	2.5
2.	Vandalization of CAI equipment's militate against CAI.	6600	55.0	3960	33.0	900	7.5	540	4.5
3.	POOR Orientation of teachers about CAI militate against CAI in my school.	5760	48.0	4440	37.0	1200	10.0	600	5.0
4.	Lack of maintenance culture militate against CAI in my school.	5640	47.0	4080	34.0	1200	10.0	1080	9.0
5.	Government policy towards CAI militate against CAI in my school.	5880	49.0	3480	29.0	1440	12.0	1200	10.0

Table III above show the problem that militate against the use of CAI in Lagos State which include vadalization of CAI equipments; poor orientation of teachers, lack of maintenance culture and government policies has not been helping the use of CAI in Lagos State. Therefore if these problems are looked into solutions to them will go a long way. Hence the null hypothesis is rejected which is there will be significant difference between the factors that militate against the availability of Computer Assisted Instruction.

DISCUSSION OF THE FINDINGS

Result showed that all the teachers and students were not aware of the values that the CAI will put on teaching and learning in their schools. However this ignorance does not seem to have much difference to schools, probably teachers, student, government need to appreciate what CAI represent in their acquisition of knowledge. More over several steps must be taken by teachers to get themselves familiar with CAI, this means that teachers' focus should be to see the traditional teaching method as an outdated and undignified method to our nation's educational development. New methods must be developed, in line with this belief Akinyemi (2005) state that those taught with small group learning strategy retained the concept taught better than lose taught with conventional learning strategy". This author suggest that an improved strategy is better than the old didactic method. Also Agholor (2001) is in agreement with this assertion, he emphasis that "In

the absence of special method of educating the gifted children they are bound to fail in a normal school in spite of their precocious capacity". In addition government on the other hand must also realise the role play by CAI for children academic excellence. opportunity must be created to interpret and translate curriculum into CAI practices. This move will arouse students interest and make school more meaningful to students, in the finding of research on visual production on History conducted by Alabi (2006) which state that "student interest had been greatly increased towards their subject; their cognitive skill had been highly manifested..." thereby help students to be more creative and imaginative. At the same time parents and government should give students opportunity to be exposed to computer literacy right from early childhood education because this knowledge will go a long way to make CAI to be more effective. This submission support the fact that an improved method should be introduced to our school system for this will take care of all categories of students. This is in line with the research conducted by Jenkins (2001) which suggest that previous experience students have before they begin the cause is important in terms of success or failure". Along this line Stephen Creaser (2002) who carried out a longitudinal study of student computing experience over five years, his findings described the actual trends in prior experience of new information science undergraduates in Information Technology. It was discovered by the researcher that Lagos State Government in 2005 gave out some computers to some selected secondary schools, but these computer are so few in number compare to the number of students in those schools also none of these computers are used for CAI benefits base on these facts, it is obvious that student rate of performance will be greatly enhanced if CAI is applied Lagos State schools.

RECOMMENDATIONS

Government should set up a committee to look into the problem of CAI in Lagos State and the committee should proffered solution for government to follow. There must be provision of funds to schools to get computer for instruction, in schools where computers are available fund must be provided for maintenance. There must be constant training and sponsorship of teachers not only to be Computer Literate but to be expose to Computer Assisted Instruction. Classroom must be renovated and the security level must be solidified so that the problem of vandalization will not arise. School principals should be given orientation not to give priority to certain subject for CAI but that all teachers should be given the same opportunity. Problem of power generation needs to be solved by providing standby generator for schools for effective use of CAI. Each school must be provided with Educational Technology centers with professionals who could assist teachers in new method of teaching and skills.

REFERENCES

- Agbolor, S. (2000) The Role of Information Technology in Special Education (Ed)". Technology in Educational Advancement (PP 30). Lagos, Edditext.
- Akinyemi, O. A. (2005) Effects of Small Group and Poor Tutoring Learning Strategies on Students' Achievement and Retention in Senior Secondary School Physics. *The Jos Journal of Education*. 7, 2.
- Alabi, B. O. (2006) Effects of visuals aids and Learning Activities an Students' Achievement in History in Selected Lagos State Secondary Schools. *Journal of Educational Media and Technology*. 12, 2.
- Brian, K. W. and Stercey, C. S. (2005). Using Information Technology. A Practical Introduction to Computers and Communications (6th Ed.). New York, McGraw-Hill Technology Education.
- Brian, K. W. and Stacey, C. S. (2003) Using Information Technology. A Practical Introduction to Computer and Communications. (5th Ed.). New York, McGraw- Hill Irwin.
- Jenkins T., David J. (2001) Diversity and Motivation in Introductory Programming Proceedings of ITICSE 2001 PP. 53 – 56.
- Kathleen, C. (1991). Computer Assisted Instruction. School Improvement Research Series <http://www.wvnet.org/Sept/Sins5/Cul0.html> retrieved September 27, 2007.
- Kuang-Wu Lee (2000). English Teachers' Barriers to the use of Computer-Assisted Learning *The Internet TESL Journal* 6, 12 <http://iteslj.org>.

O'Leary, and O'Leary, L. I. (2005). Computing Essentials, New York, McGraw. Hill/Technology Education.

Onasanya, S. A and Adegbiya M. V. (2007): Practical Handbook on Instructional Media, Graph Com. Publisher.

Stephen, D and Creaser, C (2002) Information Science student IT Experience and Attitude Toward Computer Results of a Five Year Longitudinal Study. Innovations in Teaching and Learning in Information and Computer Sciences.
<http://www.ics.isn.ac.uk/pub/italics/issue2/dstephens.b/005.html>.

Terri Teal Bucci Anthony J. Petrosino. etal (2004). Meeting the ISTE Challenge in the Field: An Overview of the Six Distinguished Achievement Award Winning Programs. *Journal of Computing in Teacher Education* 21 (1). 11.