

Computer Application in Secondary School: Constraints and Implications for Social Studies Instruction

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Abstract

The major focus of social studies education is the development of effective citizens capable of making rational decisions based on keen ability to find, assess and apply information about their environment. The computer's ability to simulate complex processes and to provide data bases for developing and polishing information lends the application of computer favourably well to teaching of social studies.

The application of computer in instruction has been around for quite a long time now. In spite of this, not many (Nigeria) educators have embraced this innovative strategy as a central approach to be employed in social studies instruction. This paper therefore sensitizes social studies educators on roles the computer could play in social studies instruction by examining the need for computer aided instruction in social studies instruction, the anticipated constraints and equally offers some suggestions towards the improvement and success of the application of computer in social studies teaching in Nigeria.

Introduction

Despite the use of computer for instruction in the discrete subjects for quite some time now, its application to social studies instruction in Nigerian secondary schools has not been adequately encouraged.

Since the advent of the social studies about a century ago in the western world, it has spread to other parts of the world especially Africa with the call for innovative strategies of instruction; the project methods (or activity methods) where children were no longer passive receivers of facts but looking things up and engrossing themselves in discovery and busy activities.

In Nigeria, however, the emphasis has been on innovative instructional strategies including; inquiry methods, problem solving, simulation games, dramatization, discussion, creativity method, value clarification, public controversial issue method and expository methods.

Despite the fact that computer instruction, or programmed instruction has been around for quite a long time now, not many (Nigerian) educators have embraced this innovative strategy as a central approach to be employed in social studies instruction.

The computer technology is emerged in transmitting facts and figures and since the major focus of social studies education is the development of effective citizens capable of reasoned decision making based on a keen ability to find, asses and apply information from and about their environment, social studies educators therefore, after becoming computer literate need to employ this information processing and problem solving tool in their social studies instruction.

The computers ability to simulate complex processes lends its application creditably well to the basic goal of social studies education in the understanding of social processes and phenomena as the essentials to effective citizenship. Recently however, little attention is given to the application of computer instruction by Nigeria social studies educators in the school.

In education generally, instruction through the computer comes in form of Computer Assisted Instruction (CAI), Computer Management Instruction (CMI), Computer Simulated Learning Aids (CSLA), and Computer Based Instruction (CBI).

Software packages on different topics in majority of the disciplines are /also available with an acute scarcity of such packages for social studies instruction in Nigeria. This situation therefore calls for an improvement in the production of these packages to support the application of computer to social studies teaching.

Roles of Computer in Social Studies Instruction

The use of computer for instruction in the sciences and social sciences in schools has come of age (Niemiec and Walberg 1987; Bangert-Drowns, Kulik, and Kulik 1985); therefore, the desirability of computer application in social studies teaching and learning may no longer be questionable. Hence, if the information handling power of the computer can be put at possibility of a revolution in social studies education and instruction in the country (Akinlaye, Bolarin, Olaniyonu and Ayodele, 1997).

In social studies, information processing is regarded as a means to a more humane educational end. To achieve this satisfactorily, such information, facts, concepts and generalizations must be processed to and from the learners in order to provide appropriate information to fulfil particular individuals' social needs. The amount of information so processed in any social studies course would be enormous and the processing of such information must be fast and accurate. Since rational decision making demands well developed skills in finding information that is necessary and relevant the use of computerized data bases therefore is very germane to social studies instruction to develop and analyze information for or by students.

How could teachers apply computer to social studies teaching?

The computer is essentially a device for storing and retrieving large amount of information. It also handles this information in specific pattern in extremely fast speed. On the computer system, students can be engaged in simulation gaming and information retrieval via modern recorded simulation games. Spreadsheet programmes on the system allow students to perform calculation on row and columns of numbers. These numbers can be experimental results or other data relevant to social studies topics. (White, 1988)

Maps and globes are fundamental to many topics within the social studies curriculum where students can exploit the graphic capacity of the computer.

Tutorial programmes on the system can help support the development of basic map reading skills while simulation exercise using maps can encourage students to draw inferences from geographical data as contained in computer generated maps.

Computer software that allows students to enter and analyze survey data quickly also allows students to focus on data analysis rather than on the laborious mechanics of manual information analysis.

Being an integrated discipline that obtains and incorporates information from many disciplines, software packages on relevant topics in other discrete discipline could be used for teaching social studies lessons.

The application of computer to social studies instruction is the application of its techniques of information processing in presenting instructional materials that have been designed, developed and produced for learning situations in social studies rather than teaching students the rudiments of computer.

Computer technology however, has been found by Akinlaye et al (1997) to be a suitable, reliable and versatile device for instruction in the school system. The effective and full application of this general field of technological development to social studies instruction therefore is what this paper is advocating.

Advantages of Computer Application in Social Studies Instruction

The application of computer in social studies teaching will provide several advantages with particular reference to the students, the teacher and even the school system itself.

To the students, computer instruction, especially individualized computer assisted instruction is interactive. It makes the learner respond interactively to the instruction presented by the computer. He thus becomes an active participant in the learning process. The individualized social studies instruction enables the student to move at his own pace according to his choice and intellectual capability and provides him immediate feedback. When the teacher provides assistance to the learner, it enables him (the teacher) to give more attention to the unique needs of individual learner. The CAI increases each learner's sense of autonomy and learning procedures and helps serious learners to acquire the skill of learning how to learn.

It will as well free students and enable them to make their own instructional decisions, to capitalize on their unique social studies knowledge, concepts, facts and generalizations. The application of computer to social studies instruction will no doubt provide order in teaching and learning by organizing the subject matter

around individual students' needs and abilities. To the teacher, the application of computer to social studies teaching will enable him modify and adapt his instruction to meet the needs, ability and interest of his learners. It will liberate him from the role of being the sole embodiment and surveyor knowledge in the class.

The teacher can easily break down the content of his lesson. It will enable him plan, organize and present the subject matter for maximum mastery and understanding with little interference. The CAI promotes the interpersonal relationship between the teacher and the learner.

To the school, the application of computer to instruction generally will encourage high punctuality and regular attendance at school. It will further keep students busy and occupied thereby controlling acts of indiscipline and reduces administrative hardships caused by students; indiscipline behaviour in the school.

Constraints to Computer Adaptation to Social Studies Instruction

This innovative approach to social studies teaching being advocated however will face some problems, which may hinder its successful adaptation. Some of the envisaged problems include:

1. Inadequate availability of human and material resource (e.g computer specialist, expertise on the part of social studies teachers, hardware and software on social studies concepts and topics).
2. The problems of large population of students per class (in urban schools), which may over stretch the use of available meager resources.
3. The teaching of values, attitudes, dispositions and interest are often emphasized as the central goal of social studies instruction, the CAI, however, indicates that separate and distinct learning tasks are being taught which do not apply to these goals. Hence, social studies educators may not be totally disposed to this suggestion for fear of not achieving the curriculum objectives after a series of computer aided instruction programmes.
4. Other major problems include erratic power supply, high cost of computer system, the shortage of textbooks on computer education and application to social studies instruction for prospective learners and teachers, and lastly, the inadequate research work on different areas of computer education.
5. Generally, the major problems of using computer for instruction in Nigerian schools can be summarized as having to do with environmental and power requirements as well as human resources, technological base, the curriculum pedagogy and finances.

The environmental concerns arise from the fact the computer is sensitive to heat, dust, humidity, vibration and mechanical shock. These factors however can be controlled by air-conditioning or having Micro computers that are more resistant to such environmental hazards.

These problems however will invariably hinder the effective application of computer to social studies instruction in schools.

Suggested solutions

The current focus on computer technology in social studies education is mandating that teachers become computer-literate for a number of reasons. It is believed that student involvement in learning is enhanced with computers (Budin, 1991). Students are considered to be more productive when using computers (Dwyer, 1994) and when involved in distant learning situations students feel their needs are met with computers, (Everett, 2000). Some argue that computers allow students to access information through their preferred learning styles (Wade, 1995).

In view of the envisaged handicaps, the followings are therefore suggested as solutions:

1. That the social studies curriculum should be previously reviewed to accommodate topics and issues that can be computerized and to include computer Assisted instruction method among the various methods of instruction recommended in the curriculum.
2. Effort must be made by school administrators to allocate part of the resources available to provide necessary and affordable materials for their social studies computer assisted instruction programme.
3. That the government, educational administrators and schools' principals should endeavour to organize on-the-job computer training workshops for social studies teachers to enable them have some competency in using the computer for their instruction.

4. The Teaching Service Commission which is responsible for recruiting teachers, should try to employ enough computer specialists to schools in order to assist the subject teachers in using computers in their specific subject areas.
5. Where the large population of students can hinder the successful application of CAI (as in individualized instruction), social studies teachers can adopt a group instruction technique, where students are grouped for the instructional sessions based on the available gadgets in the school.

Since social studies draws its contents from varieties of sources and discipline, the non-availability of software, especially on social studies concepts and topics can be minimized if teachers select software that have relevant topics or concepts from other related disciplines for use in the social studies CAI in the interim.

The Federal and State governments should endeavour to provide necessary assistance and encouragement to individuals or organizations that are prepared to develop necessary computer software and textbooks that are relevant to our local environment and school subjects.

The different tiers of government should intensify their efforts to improve our technological and infrastructural development to ease the adoption of the innovative strategy being advocated.

The government should try to increase their financial assistance to schools and our educational institutions to enable them acquire necessary materials needed for effective application of computer in instruction.

Conclusions

Owing to the dynamic nature of the society and the ensuing complex educational problems, people have increasingly been exploring the use of mechanical and electronic aids to learning.

Currently the era of new information technologies is dawn on all societies, hence, computer education generally is really inevitable as computer now serves as the propeller of, or the link to the promotion of education. The application of computer in the social studies instruction is as well desirable.

The CAI in social studies becomes necessary due to the problem centered and skill development nature of social studies and its intention of developing effective and functional citizenship in the learners.

One thing therefore seems likely, that is, students who are exposed to CAI will become more actively involved in learning than those whose experience is limited to traditional classroom practices.

The use of computer also holds out the potentials for releasing the social studies teachers from many of the traditional chores associated with teaching, so that they can attend to a broader spectrum of students' individual needs.

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