

SOME POTENTIALS OF DIGITAL LITERACY IN ARCHAEOLOGY OF SRI LANKA

ABSTRACT

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The use of computer in the field of archaeology in Sri Lanka has been introduced in the last decade. Archaeologists use computers for data acquisition, analysis and presentation at basic level. The Department of Archaeological Survey has taken steps towards establishing a National Data Base of Archaeological Sites (SMR) for Sri Lanka since 1998 and has planned to link SMR to a Geographical Information System (GIS). Two universities have introduced archaeological computing courses. The Postgraduate Institute of Archaeology is carrying out research work with use of GIS.

Some general constrains of archaeological computing in Sri Lanka are non-use of expert advice and Incompetence of researchers and lecturers who are interested. The undergraduate courses are limited to giving practice in word processing, data analysis and drawing programs at basic level. The improvement in this field is affected due to financial difficulties too.

A scheme for collaboration of available expertise in Sri Lanka with foreign colleagues is required to improve of research work and teaching affects. It should ultimately bring together archaeologists, computer specialists and geologists, which would certainly enhance efficiency and productivity of cultural heritage management of Sri Lanka which has a growing global scale demand.

INTRODUCTION

Use of computer technology is a new trend in the field of archaeology in Sri Lanka. The early attempts of such can be traced to mid 1990's. In a broader perspective, the emergence of the use of computer technology in the field of archaeology in the country can be considered as a technological implantation, rather than a historically derived phenomenon.

This paper seeks to review the existing nature of the computer usage of the subject. It also attempts to identify the potentials of digital literacy in Sri Lankan archaeology and so outline the future prospects in the field.

COMPUTERS IN ARCHAEOLOGY: A RETROSPECT

The pioneer of computer application in the field in Sri Lanka is the Postgraduate Institute of Archaeology (PGIAR) of the University of Kelaniya, The early attempts were confined only to a kind of architectural reconstruction of a ruined building in the royal complex belonging to 5th century A. D. at Sigiriya in the Central province. AutoCAD software has been used and the results of the simulation were incorporated into the interpretation of the excavation results of the particular building.

Several academic departments in the universities have also contributed their skills and energy to the development of the field. Most of them introduced computer-oriented syllabuses into their degree programs. Such syllabuses help to trace the basic elements of the relationship between computer technology and archaeology. The analytical procedures of the subject are not well addressed by those elementary teachings. The Departments such as the Department of Archaeology at the University of Kelaniya, the Department of History at the

University of Ruhuna, and the Department of Archaeology at the University of Peradeniya are conducting such teaching programs.

Several government institutions such as the Department of Archaeology and the Cultural Triangle that come under the Ministry of Cultural affairs are also using computer technology in the field of cultural heritage management. A major project initiated by the Department of Archaeology is to integrate the data available for the archaeological sites and monuments of the country. Spatial and thematic data of each monument have been encoded using GIS applications. This project is moving slowly due to both lack of proper personnel and lack of adequate technological backing.

Recent archeological research on ancient settlements conducted by the Postgraduate Institute of Archaeology under the technological guidance of the Uppsala University in Sweden proved the importance and value of the computer application in the field of archaeology. A limited area about 230 sqkm was surveyed to uncover the distribution pattern of the ancient settlements in the lower Kirindi Oya basin in the Southern province of Sri Lanka. The spatial data of that survey has been processed in GIS. The spatial diversity of the ancient settlement distribution in several time episodes has been simulated. The methodology followed in undertaking this computer simulation is the amalgamation of the spatial information and the archaeological data. The reconstruction of the ancient city including its suburbs, very clearly shows, the potentials of artificial intelligence that archaeology bears in such area surveys.

Cultural Heritage Management

THE POTENTIALS

The growing research in the Sri Lankan archaeology is now demanding the use of computer technology. The rapid development of the information technology, the efficiency and sophistication made by the use of artificial intelligence, creates a new demand among the new generation of archaeologists in the country. However, the viable sub-fields of archaeology of Sri Lanka that has a vast potential of computer application can be classified into the following major groups.

1. Field Surveys: The landscape approach of modern archaeology emphasizes a high priority for using computer programs in the landscape analysis. As a developing country, this is urgent as mass-scale accelerated development programs are taking place. For example, during the construction work of the Mahaweli river diversion project, considerable extent of lands, with great archaeological value, were destroyed. No records were left behind. The unawareness of the methods of artificial intelligence to be utilized to record such widespread spatial entities, and lack of proper personnel for such a task is explicit in the circumstances alike.

2. Excavations: each year at least one excavation is conducted somewhere in Sri Lanka. So those excavations produce enormous amount of data pertaining to human existence in different periods of the past. Computer usage provides a wide opportunity to organize such data in an accessible way. For example, the excavations of the Jethavana stupa site during the last decade have uncovered nearly 600,000 ancient beads

The excavation section of the Department of Archaeological Survey has already developed an archaeological data management system: a suitable catalogue and a storage system for archaeological objects recovered from scientific excavation. It is 'Archaeological Data Visualizer': a special computer software program written and encoded with MS Access and MS Visual Basic program interfaces. However it is limited to store data collected from previous excavations. Developing a system to store data at any excavation process has become a necessity.

3. Record of monuments: in digital format by using AutoCAD, GIS and VRML. For instance, in publications and presentations, virtual reality and simulation could be used to acquire maximum results. To reconstruct past for public presentation projects under the cultural triangle could be presented as virtual tours through internet and at the sites.

4. Database management: Creation of databases for the use of researchers and public has become an essential need. A national database for inscriptions is an example.

The library of the Postgraduate Institute of Archaeology has already catalogued all books using software ISIS and catalogue searching is available to anyone.

The National Museum of Colombo is also establishing a database named 'Project Object ID' to record and manipulate the information regarding the artifacts at the museum guided by the Royal Tropical Institute of Amsterdam, Netherlands.

CONSTRAINTS

On one hand one should appreciate the researchers and lecturers who work under minimum facilities and trying circumstances to develop archaeological computing in Sri Lanka. They hardly have previous experience or training. On the other hand in some institutions facilities are not being used properly because of the lack of enthusiasm towards archaeology.

In this situation, the main constraints to archaeological computing in Sri Lanka can be summarized as follows:

1. Inadequate academic response due to inexperience and under-training of the researchers and lecturers in archaeological computing.
2. Lack of proper communication between administrators and those in the archaeology field in respect of policy making and implementation.
3. Lack of teaching materials including books and essential software and hardware.
4. The lethargic and disinterested attitudes of the professionals in archaeology and the computer specialists towards a common goal.
5. Non-availability of vast international knowledge and experience in computer applications in archaeology in Sri Lanka.

PROBABLE FUTURE PROSPECTS

It is vital as responsible institutes that the above-mentioned contributors in archaeological work, must rethink, plan and organize their activities to get maximum use of computer to the field of archaeology.

An impressive national or international conference and a series of workshops in archaeological computing should organize to make aware the applicable personalities and institutions about the importance of the previous and present research work that make use of digital literacy in Sri Lanka.

At least selected suitable personalities from each institute should be highly trained in archaeological computing.

For undergraduate courses at universities proper syllabuses and teaching materials should be prepared. Adequate practical knowledge should also be provided to upgrade the archaeological computing courses.

It should ultimately bring together archaeologists, computer specialists, geologists and mathematicians to enhance the efficiency and productivity of the cultural heritage management of Sri Lanka.

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