

## **Technology based learning and teaching to address an archaeological problem**

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### **Introduction**

The seminar course *Instruction and Learning in Archaeology: a new approach*, is an introductory skills and insight course on interactive instruction and learning, using interactive multimedia.

The appropriate skills are of utmost importance to all students and relevant lecturers, and are important for the search, retrieval and dissemination of information using the electronic highway. These skills are also applicable if effective and efficient use is made of this medium for teaching and learning.

At undergraduate level, the students from Archaeology have to use electronic multimedia for information searches and interactive study, which focuses on the presentation of structured themes of selected subjects.

At Honours level, the students have to utilise electronic multimedia for interactive study that focuses on vocationally directed seminar courses on Archaeo-Tourism and Eco-Archaeology. After successful completion of *Instruction and Learning in Archaeology*, the candidate should, by means of modern electronic multimedia and interactive study and seminar techniques, be able to successfully complete outcomes-based career training in Archaeology.

An important function of the Archaeology as a cultural science is research and guidance through means of cultural documentation, cultural heritage conservation and cultural tourism. The world-wide development of scientific cultural heritage preservation and the effective utilisation of cultural resources for tourism, creates an important niche for experienced culture resource managers. An important job requirement for culture resource managers is expertise about gathering of data and the processing thereof into usable information, as well as cultural heritage conservation and tourism. Electronic information and communications networks can play a leading role in these aspects.

The modern career requirements for cultural resource managers requires additional scientific approaches to training. An appropriate approach to vocationally direction training must be an outcomes-based teaching- and learning model. This could be accomplished using multimedia teaching methods. At post-graduate level, these approaches could be applied in a unique way through inter-disciplinary seminar courses.

### **Problem statement**

#### ***Subject teaching and the classical model of teaching and learning***

The traditional academic training of students in Archaeology at the University of Pretoria focuses on factual knowledge of the history of man, the retrieval and description of cultural remains from the earth's surface, and the obtaining of insight in the theoretical explanations of cultural manifestations or derived social behaviour. This training was, until recently, rounded off with an optional post-graduate course in Museum Science to

prepare the archaeologist for a career in museums.

During the traditional teaching program, the classic model of teaching and learning was used.

*In the classical model:*

learning is lecturer-centred:

the lecturer manages the learning of the students, with him being the main source of already processed information;

teaching activities which consisted of content statements / presentations through a one-way lecture takes place;

students are evaluated by the lecturers, through literature studies, tests and examinations;

students are engaged in passive learning, such as the search and memorising of processed information and presenting this information in literature studies and during tests and examinations;

media such as text books, notes, transparencies, colour slides, video's and posters are used.

The classical model of teaching and learning resulted in

the acquisition of knowledge for the sake of knowledge;

incomplete subject content, with little or no attention to career requirements; and

the lack of job-related skills.

This in turn led to

spoon feeding;

pressure on the student to memorise large quantities of information;

an inability to keep up with the modern knowledge explosion;

an inability to teach the student how to process data into valid information.

It was found that students in Archaeology still have problems with the integration of subject theory and factual knowledge, as well as with the processing of data and project design. Could this be due to inadequate teaching methods?

One serious consequence is that students presently lack the ability to meet market related job requirements set for cultural experts. Job opportunities, such as cultural heritage management and cultural and archaeo-tourism, are not directly accessible to students completing their studies at the University of Pretoria, as well as most other universities.

### ***Subject teaching, job preparation and the outcomes-based model of teaching and learning***

Environmental conservation, cultural heritage management and cultural tourism implies

that cultural resource managers should be able to

do autonomous and accurate research and generate extensive data bases;

assimilate archaeological and related data into practical and usable cultural and environmental conservation information;

apply the cultural heritage information and other archaeological information to cultural tourism.

As a result, the outcomes-based and vocational orientated subject teaching is a growing requirement in Archaeology.

An appropriate outcomes-based teaching model for teaching and learning in Archaeology

is student centred with the lecturer as a manager of information, helping and guiding the student to develop study skills and attaining job related skills;

makes the student an active participant in the learning process by letting him

choose his own subjects within a pre-defined framework

study at his own tempo;

organise raw data into scientific usable databases;

select information, reducing and systematising information by placing it within a conceptual framework; and

produce a career oriented product according to professional requirements.

use various media for teaching and learning, such as

the resources which are used for the classical teaching model;

interactive multimedia programs designed for interactive teaching;

electronic databases; and

the Internet

evaluate students

in terms of job requirements;

by the students themselves through self evaluation during an interactive learning process;

by lecturers, according to scientific and teaching standards;

and by consultants and professionals according to defined vocational standards.

### **Objectives**

A new curriculum was drawn up to try to meet the requirements for a market-related training programme.

## ***Objective of the new course***

The objective of the course is to provide Archaeology students with the necessary skills and insight through interactive teaching and learning methods, using interactive multimedia and other media to really prepare students for a career in Archaeology.

## ***Aim***

The specific aim of the course using interactive teaching and multimedia is that by means of using specialist instruction and tasks, theoretical insight and practical skills will be reached in:

the nature and mutual connection between interactive teaching, learning and vocational prestige;

the utilisation of multimedia for post-graduate study, especially seminar work;

introduction to info-kiosks and information networks as multimedia resources, and its use for interactive study and career oriented presentation of information;

the searching and retrieving of electronic information on infokiosk and other communication networks;

the design of storyboards for info-kiosks and the presentation of the information; and

the utilisation of the virtual dimension for distance communication and the presentation of information.

## ***The Syllabus Content***

Learning content delivered through study guides, lectures, an interactive multimedia program and practical sessions are

an introduction and explanation of the basic concepts of interactive teaching and learning, using interactive multimedia and seminar work;

using the Internet and linking to relevant sites;

examples of info-kiosks, interactive tutorials, Internet pages and electronic worksheets;

design and publishing of electronic documents on information networks; and

the design of storyboards for info-kiosks and Web pages that can be used to disseminate information and for marketing purposes.

## ***Work program***

### ***Introductory phase***

Phase 1 of the course consists of a guide to multimedia and relevant exercises for under and post-graduate students during February and March.

### ***Introduction to multimedia-based interactive study***

Phase 2 of the course consists of discussions on interactive teaching and learning, seminar work and interactive multimedia, and is presented during April.

### ***Application of multimedia-based interactive study***

Phase 3 of the course is integrated with the rest of the interactive study program for Archaeology. This study program consists of interactive multimedia tutorials on undergraduate projects, scheduled tests and examinations; and post-graduate assignments and seminars on relevant archaeological information and themes, with electronic multimedia as a study aid.

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