fOCUS: a distinctive pedagogic approach for maximising the teaching and learning value of analysing digital video

J. Oates
Centre for Childhood, Development and Learning, The Open University, Milton Keynes, UK

Abstract
This short paper describes the development of the fOCUS software and teaching materials which make use of the concept of 'learning object' to successfully meet the needs of teachers of observation skills.

Supported by the British Higher Education Academy, the project Observation Skills in Psychology has produced sets of learning units for undergraduate psychology students and trainee clinical psychologists, based on extensive surveys of lecturers wishes and needs for such materials.

The next stage of development is towards a new version of the software and the extension of the learning materials into new fields including health professions training, business studies and clinical psychology supervision.

Keywords
Teaching observation skills software pedagogy

1 Introduction
Digital video is a rich and potentially powerful teaching medium. It invites engagement with its dynamic content, it is information dense and it can stimulate emotional as well as intellectual responses. By bringing events into the learner’s immediate environment, direct contact with otherwise inaccessible experiences is made possible. Many fields of study involve extracting information from dynamic, real-world events. Fields as varied as vulcanology, musicology, animal behaviour, theatre studies and developmental psychology can usefully employ video for teaching and research. The accurate and systematic analysis of video material is a key research method. In teaching observational skills, achieving a close engagement of learners in critical and systematic approaches to video materials is a crucial factor.

1.1 Observation skills and psychology
The skills of systematic observation and assessment of behaviour are generally recognised as central components of undergraduate research methods training in psychology and form a major element of the defined core competencies for clinical psychology training in Great Britain. They are widely valued in related professional fields including nursing, primary care, social work and teaching, and are important ‘employability’ skills for clinical practice and behavioural research. They form an important part of linking theory and practice, through the application of psychological principles to observation, analysis and assessment of behaviour.

2 The fOCUS project in the Open University
Stemming from experience with using digital video as a raw data source in professional software tools, such as The Observer, for research in child development and using video as a medium for teaching, the fOCUS project has been developing a pedagogic tool for presenting and analysing video material. An initial version, produced in 2000 in collaboration with the BBC, won the European Academic Software Award for the social and behavioural sciences and was subsequently used as the delivery medium for a complete CD of audiovisual materials for the Open University Exploring Psychology course, and then also for the Masters level course Child Development in Families, Schools and Society, delivering video content and linked textual materials enabling students to learn how to analyse and interpret child behaviour.

A new version of the software shell, fOCUS II, has been developed as part of the project. This is being used in the Open University course Research with Children and Young People, and is being used for the 2006 and subsequent presentations of the psychology course Child Development.

3 The Observation Skills in Psychology project
Initial funding for the development of the first versions of fOCUS came from the Open University. In 1999, the Open University Psychology programme was rated as ‘excellent’ by the British Quality Assurance Agency for Higher Education and this, along with the recognition of the role of the innovative fOCUS software allowed a successful bid to be made to the Higher Education Funding Council for England. This granted £360k funding under the Fund for the Development of Teaching and Learning to disseminate and develop fOCUS for use in undergraduate psychology and postgraduate clinical psychology training courses in English HEIs. This project, named Observation Skills in Psychology, is now in its third year and so far has achieved take-up of the materials by more than 30 other British HEIs. A major update and redesign of the user interface is currently underway towards a fOCUS III that will take full account of the extensive user testing that has now taken place in a large number of universities.

3.1 The consortium
A consortium of universities, Leeds Metropolitan University and the Universities of Newcastle, Oxford and Sheffield, led by the Open University, was established to carry the project forward. Its key aim was ‘to improve the quality and cost-effectiveness of training in systematic observation and assessment
skills in undergraduate psychology and postgraduate clinical psychology.

The specific objectives of the consortium, in collaboration with additional participating departments were to:
1. identify user requirements and intended learning outcomes for training psychology undergraduates and clinical psychology postgraduates in observation and assessment skills;
2. produce two customised versions of existing CD-ROM based teaching materials meeting the identified requirements, one relating to observational methods of studying behaviour for psychology undergraduate courses, the second relating to observation and assessment in clinical psychology courses;
3. pilot and evaluate the resulting teaching materials in ten psychology departments;
4. modify the materials in the light of the evaluation;
5. disseminate widely information about the developed teaching materials, and support and evaluate their introduction into teaching programmes;
6. support up to ten departments in developing and using further versions of the CD-ROM based teaching materials;
7. identify and evaluate opportunities and solutions for meeting the specific needs of students with disabilities;
8. conduct a broad dissemination program to support and extend the take-up of the final sets of teaching materials; and
9. plan a strategy to establish ongoing support for departments using or wishing to make use of the teaching resources, and to foster further development activities.

3.2 Progress towards objectives
At the time of writing (July 2005) we have achieved objectives 1-6 and have made substantial progress towards achieving objectives 7-9.

3.3 Identifying sector needs
During March 2003, questionnaire surveys to identify user requirements for observation and assessment skills training were circulated to 118 undergraduate and 32 clinical psychology departments; 39 undergraduate and 16 clinical departments replied.

The data from these returns gave us three key sets of information about:
- required learning outcomes
- preferred video contents
- curriculum and course constraints

The survey exercise also led to expressions of interest from several universities wishing to pilot test the teaching materials. Workshop sessions were held with teachers from these universities to agree the detailed requirements that then guided the authoring of the learning materials. One of the main functions of these meetings was to discuss and agree the required learning outcomes.

4 The pedagogic approach

4.1 What teachers want
It became clear from the surveys and workshop sessions that there is a high level of interest in improving the teaching of observation methods, since this has become so difficult to provide in recent years. It was also evident that a very specific pedagogic approach was needed, for which the fOCUS software tool was well suited.

Rather than requiring whole courses or modules produced by other people, it was established that what university teachers most want is to be able to use high quality, self-contained short ‘nodules’ of learning materials that could be easily incorporated into their existing teaching timetables. Such ‘nodules’ would ideally be deliverable within single sessions of 2-3 hours, the length of time usually allocated for practical classes. Materials like this are then felt to be ‘owned’ by teachers and hence more easily integrated into their broader teaching aims.

Given the time pressures that university teachers are increasingly experiencing, they need to be assured that materials provided by other people ‘do what they say on the label’, in other words, that they deliver successfully to clearly specified learning outcomes. They also expect all the components of the learning ‘nodule’ to be provided, so that neither they nor students are faced with assembling disparate elements from a range of sources that may or may not fit well together. Finally, they expect such materials to be relatively independent of any required prior learning in students, so that a range of prior backgrounds and experiences can be accommodated.

4.2 The ‘learning object’ concept
Reflecting on these findings, we found a lot of conceptual overlap with the relatively new notion of ‘learning object’ (Wiley, 2002; Weller, Pegler & Mason, 2003), which is being developed to describe similar ‘nodules’ of electronic teaching assets which have characteristics such as:
- reusability in different learning contexts
- self-contained; all assets included
- can be aggregated into larger units of study
- uniquely identified elements

These four criteria have been advanced in relation to virtual learning environments, but we have found them useful in developing what we have come to call ‘learning units’ built within the fOCUS shell. These units consist of raw data in the form of digital video files and linked sets of HTML files forming a coherent teaching progression. These take students through a structured sequence of activities involving various levels and types of analyses of the video sequences, embedded within an explicit set of defined learning outcomes and assessments designed to relate to those outcomes.

These latter components, the explicit specification of the desired learning and providing tools for the assessment of its achievement by students are
important additions that we have made to the learning object concept, in the light of our experience in developing distance teaching materials in the Open University and elsewhere.

4.3 Implementing the learning unit concept

Thus informed by the synthesis of our survey findings and the learning object notion, we produced four learning units, two for undergraduate psychology students, Coding and Reliability and Validity and two for clinical psychology postgraduate trainees; Clinical Note-taking and Opening and Closing Sessions.

Each unit was designed to occupy about 150 minutes study time. To give an example of the pedagogic content, the following are the intended learning outcomes of the Coding unit:

Once students have completed the unit they should be able to:

- list features of systematic, scientific observation
- use an existing coding scheme to record behaviour
- compare and evaluate the features of time- and event-sampling
- describe the basic characteristics of coding categories
- evaluate a coding scheme
- suggest modifications to a coding scheme.

4.4 Trialling and developing the materials

These materials were then assembled into editions of the fOCUS software and bulk copied onto CD-ROM for piloting in the ten partner universities, in which the first phase of evaluation trials was run (fig. 1). Following the systematic collection of evaluation data from these trials, the learning units were revised and minor modifications made to the fOCUS shell in preparation for the second phase of testing, which involved a further ten partner universities, during which further evaluative data were gathered.

![Figure 1. Student trials at Oxford Brookes University.](image)

In all, around 1,000 students, trainees, tutors and technical staff participated in the trials and we are currently finalizing the finished versions of the learning units in the light of the feedback for wide distribution in autumn 2005.

5 Conclusion

We found that extending the learning object concept to include the clear specification and assessment of the intended learning outcomes led to the development of sets of learning units delivered using the fOCUS shell which have met with wide acceptance and take-up.

The evaluative feedback gained from the extensive user testing of the learning units has contributed to a revised specification for the software interface and a new ‘look and feel’ is being developed for future applications of the fOCUS shell.

All of the institutions who piloted the learning units intend to continue using the materials that we have developed and we have had approaches from several disciplines other than psychology to extend our work into their areas.

We have recently gained further funding from the Higher Education Funding Council to continue this productive work.

The extension project that we start in 2006 will seek to adapt the learning units for use in business studies, health professions training, trainee supervision in clinical psychology and students’ own dissertation research using observation methods.

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References: