



# PRODUCTION AND EVALUATION OF LEARNING SUPPORT MATERIAL TO ACCOMPANY VIDEO RESOURCES

IN 1999, THE AMERICAN SOCIETY for Microbiology (ASM) produced a video series (12 videos, each of 30 minute duration) entitled 'Intimate Strangers: Unseen Life on Earth' (<http://www.learner.org/resources/series121.html>). These videos were intended to be used as teaching aids, with different permutations of the series recommended for named degree programmes ([http://www.microbeworld.org/htm/mam/is\\_telecourse.htm](http://www.microbeworld.org/htm/mam/is_telecourse.htm)). However, few accompanying learning activities have been described, published or evaluated (Benson *et al.*, 2002). The aim of this project was to identify topics within the series which were deemed useful in an undergraduate programme (Manchester Metropolitan University), and to develop, implement and evaluate accompanying activities which would enhance learning.

A second-year student on a project placement devised question sheets to be completed by first-year students whilst they were watching the videos. Questions drew key points from the videos. Three videos were selected ('Microbial Evolution', 'Microbial Diversity', 'Microbial Interactions'), edited slightly to reduce duration, and used to accompany some of the introductory lectures in the module 'Life on Earth'. To ensure that all students had addressed the appropriate issues at the end of the 'lecture', the questions were revisited by the tutor and the correct answers noted. Students also completed questionnaires where their views of the videos were sought.

In general, students (over 100 students on four deliveries) found the videos well produced with good imagery. Usually there was one case study within each video which generated considerable positive feedback — imagination had been caught! Highlights were: the discovery of SAR11, a nonculturable, ubiquitous

marine microorganism; the presence of viable microorganisms in boiling water; Carl Woese's work and interview; and the importance of fungi. It was not possible to determine whether learning had been enhanced (e.g. by not showing the video, or by not issuing question sheets), because there was no control group.

The video *Microbes and Human Disease* was used to accompany tutorial activity on emerging diseases in the final year Medical Microbiology module (40 students). The video describes the emergence of Hantavirus, its identification and epidemiology, draws parallels with the epidemiology of the 'English Sweats', and addresses general principles of emerging diseases. It was shown to the group following lectures on epidemiology, monitoring and surveillance of infectious disease, and was accompanied by a question sheet, which again drew out key points from the programme. A tutorial followed (groups of 10–12 students), which all students attended at some point during the module (up to five weeks later). At the beginning of the tutorial, a brief question sheet was completed to determine whether key points had been retained from the video. Preparation for the tutorial involved the students each sourcing information on five emerging diseases, and accompanying reasons for emergence. Group discussion during the tutorial enabled the collation of a list of diseases and general reasons for emergence. All students were provided with summary sheets of the information collated. A multiple choice test included 15 questions (out of 55) on the topic. Student views of the exercise were sought (written and anonymous).

Most students preferred the video to a lecture on the subject. The tutorial activity was enjoyed. There was a loss in recall of key facts from the video over time, but there was no control group. Student performance for the questions in the multiple choice test

was better than their performance for the rest of the test, although this cannot be attributed to the video. The tutorial can be conducted without the inclusion of the video.

It is difficult to evaluate such activities without having a control group for which the activity has been omitted. However, the video series had provided a useful and positive additional resource for level one and level three modules. One anticipated limitation is the inevitable dating of some aspects of video content. This might be obviated by students working to update information outside the lecture environment, for example on the work of named scientists, or the progress of specific topics (e.g. publications on SAR11). The general principles of the learning activities can of course be used for any video, television programme or movie, including more up-to-date publications.

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## REFERENCE

Benson, S., Fisherm L., Nakaoka, K., Coleman, W. and Kullman, D. (2002) Using the video series Unseen Life on Earth: an Introduction to Microbiology to enhance student learning, Microbelibrary article: *ASM News*, Focus on Microbiology, 4 January ([www.asm.org](http://www.asm.org)).

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More information on this project can be found on <http://www.bioscience.heacademy.ac.uk/projects/tdf/verran.htm>