ABSTRACT
This paper reports on a new multimedia-centred ICT module, called Fundamentals of Information and Communication Technology (FICT) for Postgraduate Information and Library Studies students at the Graduate School of Informatics at Strathclyde University. It had radical aims (introducing novel ICT skill content in a progressive manner, encouraging deep learning and self-directed study) and used a weekly survey and a post-module survey to investigate its operation. Skills learnt were compared to skills required during student placement in libraries. Conclusions are drawn as to its success in matching the needs of future library professionals.

Keywords
ICT skills, ECDL, library studies, curriculum development

1. INTRODUCTION
At the Graduate School of Informatics at Strathclyde University (in Glasgow, Scotland), the Postgraduate Masters courses in Information and Library Studies (ILS) and in Information Management (IM) were recently redesigned. One major objective in their redesign was to position ICT (information and communications technology) in general, and multimedia in particular, at the core of the curriculum for students on both courses, one with a library/information service focus, the other with a business focus.

As part of the core component of each course, modules were added to concentrate on the issue of ICT skills, Fundamentals of Information and Communications Technology (FICT) was introduced for the ILS course, and Fundamentals of Business Information Technology (FBIT) was introduced for the IM course. The teaching for both modules was identical, the only variation was in the assessment, for the ILS course an assignment related to spreadsheets and databases focusing on user numbers and issue statistics was provided, whereas for the IM course the assignment was based around hotel occupancy rates.

The rationale for this sharing of ICT content was that student and employer needs in both areas were seen to be nearly identical. ECDL (the European Computer Drivers Licence), the standard measure of applications-based ICT competence, was seen as a baseline for the new modules and was incorporated as an adjunct to their academic nature. While ECDL is an accepted basic ICT qualification in libraries in the UK, the FICT module was intended to take ILS students beyond ECDL, into deeper skill sets that would be vital to their future professional careers.

2. AIMS OF THE FICT MODULE
- position multimedia as the core of ICT, rather than as merely the latest component.
- deliver multimedia using web and HTML, to keep it integrated with standard IT
- start at basic skill levels (e.g. file formats, saving and retrieving files), but to progress through to advanced levels of skill in vital topics (e.g. troubleshooting, installing/removing software)
- accommodate students beginning the course with different skill levels but attaining a common high skill level by course end
- focus on problem solving and conceptual model building in laboratory practicals, rather than rote learning of IT functions
- develop teaching materials that were independent of special, dedicated laboratory facilities, to universalise their use
- use a variety of teaching methods (laboratory practical, lecture and tutorials) and integrate these with self-directed student learning on their own machines outside of academic contact time
- assess formally student learning and skills with a comprehensive range of assignments (seen long examination questions, short unseen questions, multiple choice questions and a problem-based case study/project)
- encourage students to self-assess themselves using a self-teaching ECDL package, available on and off campus to students

This paper will report on:
- the success of the redesign of an ICT course around a multimedia core
- the achievement of the far reaching aims of the course
- the utility of the in-depth evaluation itself.

3. EVALUATING THE FICT MODULE

Since this module was a radical departure from previous modules a comprehensive evaluation system was implemented. Online questionnaires were designed for the students to complete before each computer laboratory session. The questionnaires were designed to gauge the students' views on the previous week's computer laboratory session, the rationale being that with a week to practice and enhance the skills covered, the student should be able to make a more reflective analysis of the content. Note that feedback was also obtained from the IM students following the FBIT module, the identical twin of FICT.

While analyzing each individual lab session one week after students had participated seemed a good idea, it was found that as the weeks passed on a "questionnaire fatigue" set in. This was something that was not expected, as the questionnaire was designed to be quick and easy to complete. There also seemed to be a correlation between the difficulty of the content in the labs and the willingness of students to complete feedback on them.

Interestingly the students did not seem to perceive multimedia as a valid information source. In the final survey, when asked on thoughts regarding the multimedia lab session, one student commented: "Until you showed us Encarta with its text, sound and images, I didn't get it."

Ironically, the multimedia lab session was one of the worst received, as the laboratory used was a general purpose university computer laboratory and was locked down extremely tightly for security purposes, not allowing plug-ins for instance to be downloaded or used appropriately. This led the tutors to suggest that students attempt some activities either at home, or in the local public library or cyber center, and this suggestion was not warmly received by the students, and may reflect some of the frustrations they felt. Some of the general comments in response to an open question on the multimedia lab are below:

"Most of the things in the lab didn't work due to the computer configuration although I'm sure they'd have been good to see."

"Very frustrating when you could not download the plug-ins - this prevented us from seeing how the multimedia functions actually worked and wasted a lot of time."

This is a difficult problem to overcome, as the content is believed to be vital, yet how that content is taught becomes problematic since the tutors do not have control over setting and configurations in labs across campus. It is felt that the approach next year will be to more strongly encourage students from the start to attempt the laboratory classes outside of the university facilities as well as inside.

Exactly the same problem was encountered in the laboratory class dealing with ICT troubleshooting and security, as ironically the security in the laboratory prevented much of what was intended for the content to be unworkable, even though the information being communicated was absolutely vital, which students appreciated in their feedback.

In addition to this weekly feedback, a final post module questionnaire was undertaken two months after teaching and assessment on the modules had been completed, and after students on the ILS course had completed their compulsory placement in libraries and information services in Central Scotland. In terms of response to this questionnaire, 31 of the 54 ILS students responded, and 12 of the 28 IM students responded. This equated to just over half of all students on the combined courses.

The first question asked related to how successful the students felt FICT and FBIT had been in developing their ICT skills generally. The biggest improvements seen were in those students who were already comfortable with ICT generally, those students who joined the modules with average skills or who knew a little, seemed to gain most from the modules. No one who responded indicated that they felt the modules had no effect on their skills (See Figure 1):
The next question related to how useful FICT and FBIT had been across the curricula of both the ILS and IM courses. (See Figure 2)

A crucial aspect to examine for the module tutors was how much of what was taught on the modules was relatable to real world scenarios, and to this end, questions were also asked related to ICT use while on placement (Figure 3):
The results reflect an extensive use of ICT across sectors, and reinforce the need for the modules to be at the core of the ILS course.

4. CONCLUSIONS
The ILS student cohort achieved a standard distribution of marks for their assessments for the module, thus showing that they had engaged with the content reasonably successfully. It is certainly heartening to see that their feelings about the module afterwards, and their perceptions of the importance of its content, seen after work placement, are positive. Examples of deep learning are apparent, in for example the self-realization of lack of troubleshooting skills. It is hoped that in the second semester of the ILS course, where core ICT skills are built on with specific elective modules, for instance Digital Archiving, Planning and Managing an Internet Service, and Web Design and Architecture, that ILS students will recognize this module as preparing them for the movement beyond ECDL.

It was felt that while useful data was gathered from this initial evaluation exercise that helped us to improve the course for the subsequent year, a more careful evaluation of more than one iteration of the course should be undertaken from the next session. It is also intended to look at more sophisticated quantitative methods for future evaluation of the module.