

# **I Still Can't Print the Notes: Student Attitudes Towards Online Learning**

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## **ABSTRACT**

*Online learning is becoming more and more attractive, as it promises reduction in cost and inconvenience, and an improvement in efficiency from the perspective of both students and teachers. Yet despite the advances in technology, several problems remain. This paper will present some of our early experiences using online learning in higher education, especially student attitudes towards an online version of an undergraduate-level course at HKUST.*

## **BACKGROUND**

The Center for Enhanced Learning and Teaching (CELT) is an academic support unit of the Hong Kong University of Science and Technology, dedicated to advancing the quality of learning and teaching for both students and instructors. Among its other activities, CELT offers support to instructors who want to develop online courses, either entirely new ones, or by converting existing courses based on live classroom lectures. As part of these efforts, the Multimedia Application Development course has been partially converted to online instruction. This course was deemed appropriate for experimenting with online learning technology, for two main reasons:

- First, it deals with multimedia, and is heavily oriented towards developing multimedia for, and using it on, the Internet. And what could be better than using multimedia technology to teach multimedia?
- Second, the course is rather well developed. It has been taught in its present form for three years, with classroom lectures supported through well-developed lecture and lab notes, and with significant hands-on work in a dedicated laboratory. Lecture and lab notes are regularly posted on the Internet, together with various administrative announcements, and provide links for additional reading. Additionally, email and dedicated newsgroups are regularly used as the primary vehicle for student-to-teacher communication.

## IMPLEMENTATION

To that end, a part of the course (approx. 50% only, due to manpower limitations) was made available as a series of online presentations, using Lotus LearningSpace 3 as the course delivery platform.

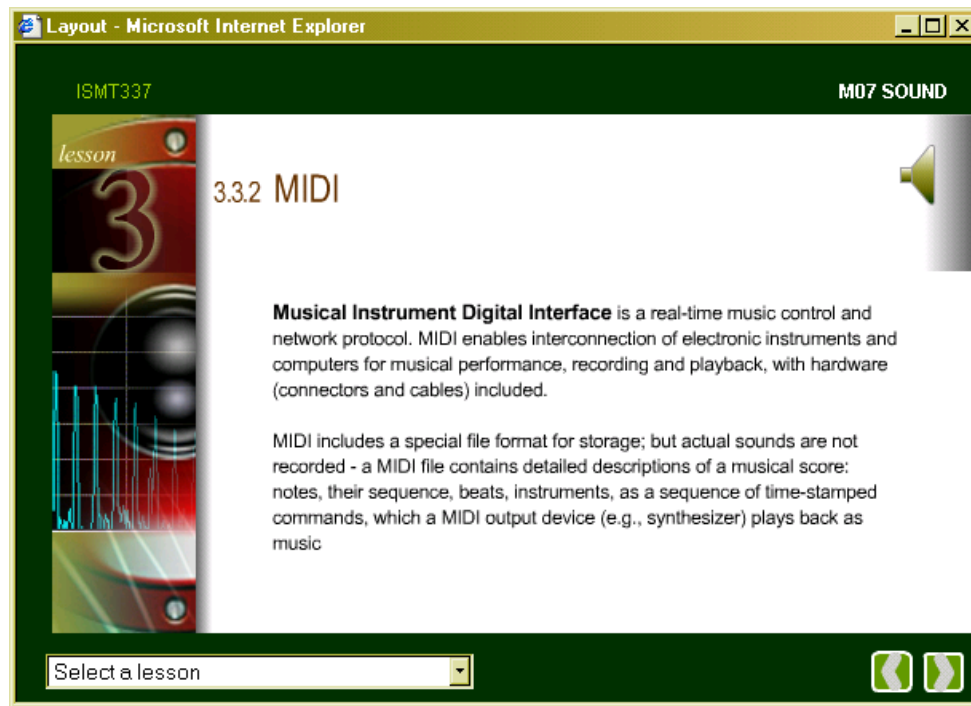


Figure 1: Sample screen from the online Sound lecture.

Individual lectures have been developed as a sequence of animated screens, using Macromedia Flash. Each screen contains a reasonably self-contained unit of the material, together with appropriate media samples to illustrate the points made. In case more complex media samples are available, a predefined symbol appeared on the screen; clicking on it will take the reader to a separate screen that presents the sample (or samples); a back button is provided to take the reader back to the normal sequence of screens. (A sample screen forming the sound lecture is shown in Fig. 1.)

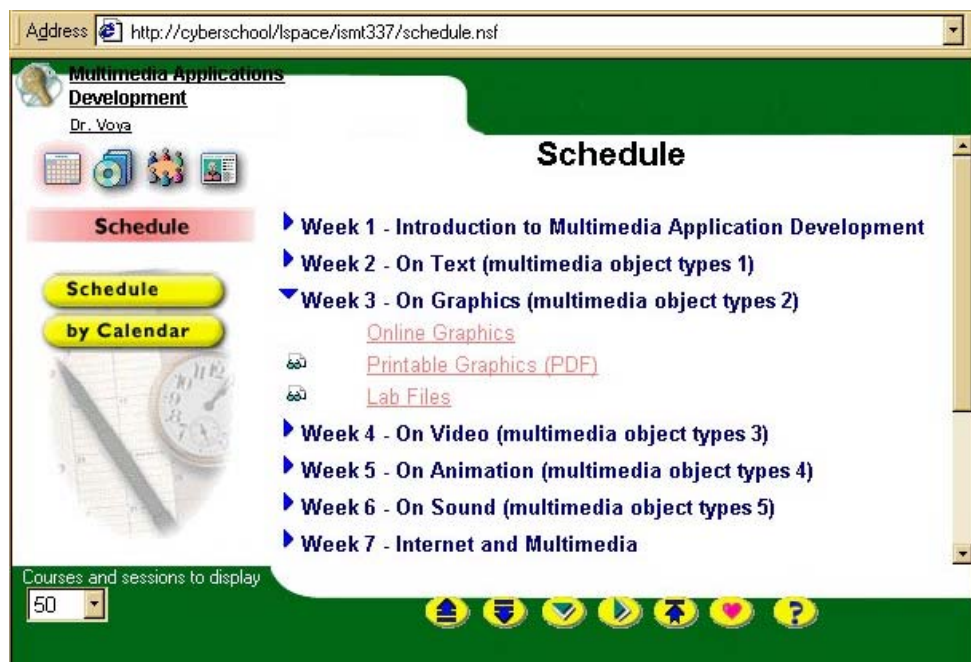


Figure 2: Part of Course Schedule in LearningSpace 3.

Additionally, each 'regular' content screen contains navigation controls to facilitate moving to the next or previous screen, as well as a drop-down control box for jumping directly to the desired topic within the lecture.

Several quizzes were administered as well, but the first ones did not contribute to the final grade. Also, the students were required to submit some of their graded assignments through LearningSpace (which provides appropriate facilities.)

Since the course deals with multimedia technology, a lot of media samples are normally required, which are impossible to supply as part of the traditional lecture notes. Therefore, it was decided to focus the online part on the pertinent characteristics of different types of media, such as text, graphics, sound, video, and animation. Other topics, e.g., the multimedia application development lifecycle, or the use of multimedia in business, were still supported by traditional printed notes and textbook readings.

## STUDENT ATTITUDES

In order to assess the students' attitudes towards the online approach to learning, we conducted a survey with several questions related to their experiences and impressions. For each of the questions, the 5-point Likert scale (strongly disagree, disagree, neutral, agree, strongly agree) was used. The submission of the survey was mandatory and worth a small percentage towards the final grade, so as to provide the students with additional motivation. Overall, we found that students liked the online version of the course, but some interesting (and unexpected) observations were also made.

Initially, the user interface of LearningSpace was somewhat of a surprise, as it does not adhere to the usual look and feel of Windows applications (see Fig. 2). However, it is simple and effective, so it did not take long to get used to – the more so because the students could use a normal browser to access the content. (The instructors had to use a Notes client for administrative tasks, rather than a simple browser, and learning did take some time.) Actually, the survey contained the question “I experience difficulties when accessing online lectures through LearningSpace” – with which a sizable number of students agreed. Still, even though the user interface is important, it is still only a component of an online course. In fact, the new version of the software (LearningSpace 4) features a completely reworked front end, much more in line with the established conventions of the Windows user interface. Therefore, we consider user interface issues to be just an inconvenience, rather than a serious limiting factor.

For our purposes, the students’ attitudes towards having the course materials available in electronic form, instead of the traditional printed one, was far more interesting. We received the first hint with several students’ email messages similar to the following ones:

- ... The problem is when I go into the Learning Space ... is there a place where I should print the notes??
- ... I still can't print the notes, please fix it as soon as possible as I find hard to concentrate on the lecture without the notes :-)
- ...about the notes: it's quite inconvenient to print each page, as there are several separate pages to print. Is there any easier way to print notes or could you make a notes file for us?

Initially, we did not intend to provide printed notes for those parts of the material covered by online lectures. However, after having received a number of complaints, we eventually made lecture notes for all lectures, including those covered by online lectures. (It should be noted that the notes contained basically the same material as the online lectures.)

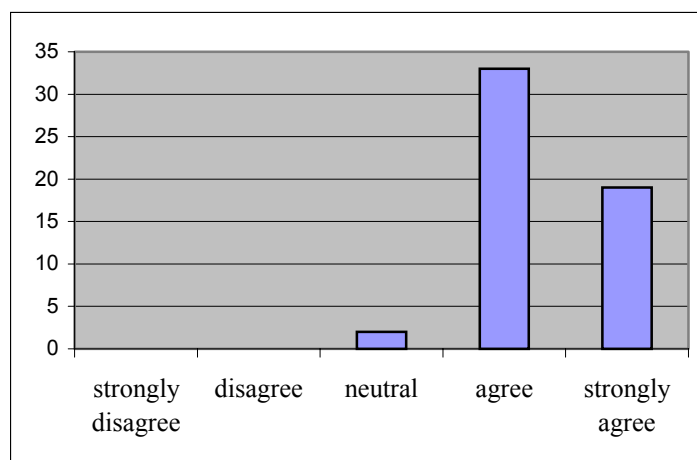


Figure 3: Answers to the question "I prefer to have printed lecture notes, even though if I can access the online lectures any time".

The survey basically confirmed students' preference for the traditional approach to learning, as demonstrated by their answers to the question "I prefer to have printed lecture notes even though I can access the online lectures any time", as shown in Fig. 3. In our view, there may be several possible reasons for such results. First, students tend to optimize the learning process; the lecture notes contain material already "sieved" – in contrast to the textbook, where there is more material to be read, and additional effort is required to select only what is necessary. This was confirmed by students' answers to the question "I prefer to have a printable set of lecture notes, even though I have a textbook", shown in Fig. 4.

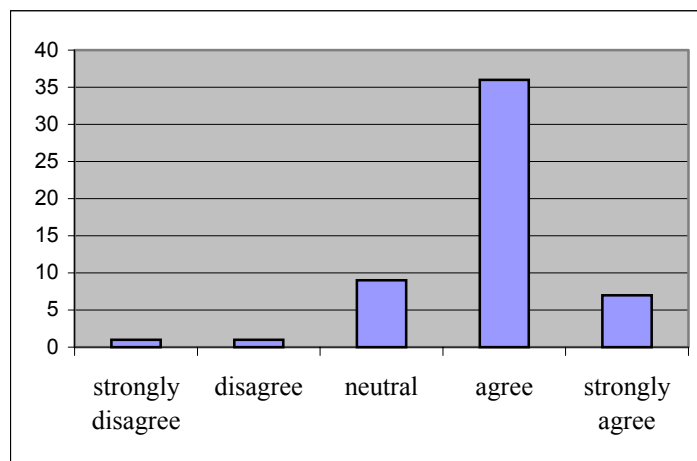


Figure 4: Answers to the question "I prefer to have a printable set of lecture notes, even though I have a textbook".

Second, if online lectures are accessible anywhere, anytime, so are the lecture notes – and the computer is not required at all! Finally, the students may have developed a habit of having and perusing lecture notes, and online lectures may seem a bit too "volatile", even though they contain basically the same material.

An even more interesting finding is that, somewhat contrary to the widespread belief, students showed a slight preference for traditional classroom instruction over online lectures (Fig. 5).

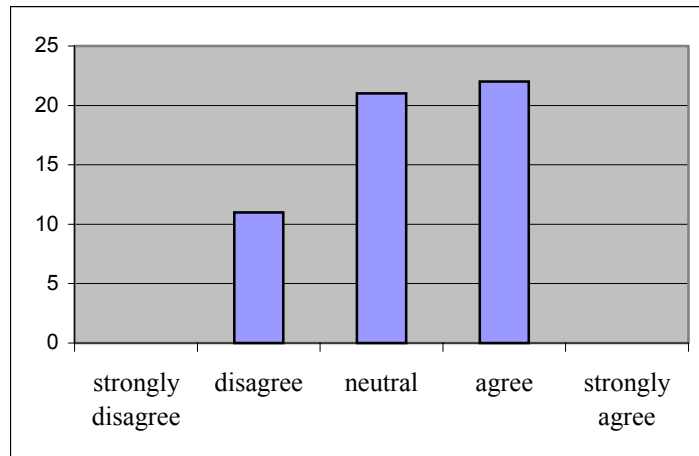


Figure 5: Answers to the question "I prefer traditional classroom instruction over online lectures".

Such an attitude probably has several contributing factors, one of which may be peer feedback, while another one could be a slight preference for experiencing the media samples in class, as shown in Fig. 6.

The second observation may be attributed to the technology used, since the media capabilities of classroom equipment are likely to be better than those of the computers students have used to access the online lectures, but also to our lack of experience in creating online lectures, which caused “live” presentations to be of higher quality. The impact of both factors is likely to be reduced in subsequent development.

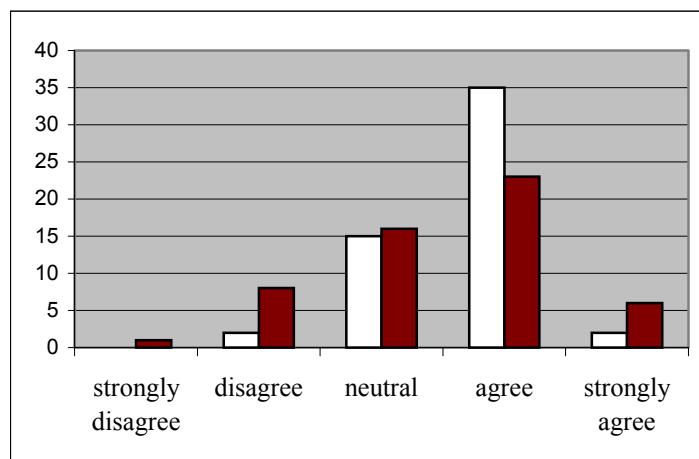


Figure 6: Answers to questions "I like classroom instruction because of peer feedback" (left/white bars) and "I prefer to experience media samples in the classroom" (right/dark bars)

As for peer feedback, it essentially comes for free in classroom instruction. Note that the course was offered in the students’ final year of study, where the cohesion of the class is generally well established, and students are already “experienced” in all aspects of learning. On the other hand, peer feedback in online learning does require

a conscious effort, be it in the course of a live discussion or through electronic communication (even though that effort is not very high).

## **SUMMARY**

In conclusion, we should be aware of the following:

- We still don't know what is the best way to use the technology available, and what is the best technology to use anyway. (Obviously, the material being presented in the Multimedia Application Development course is rather specialized, and cannot be considered representative.)
- There are important cognitive issues and problems to take into account. Some of these are acquired skills, which may be removed through proper training, whilst others appear to be inherent to human perception, and therefore have to be respected and "designed-in" from the very beginning of the online learning development.

Therefore, more experimentation is required before optimal solutions can be found – but the results are well worth the effort.