

## A PRACTICAL APPROACH TO ON-LINE COURSE DEVELOPMENT IN MALAYSIA

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### Introduction

Many universities in Malaysia started their open learning programs early this decade. The University of Malaya began its own program in 1994. Since then many has debated the wisdom of the program. However, with the recent advancement made in the computer technology we, in the University of Malaya, have accepted that open learning is here to stay. Thus, our effort now concentrates on how the program can be made to work effectively.

Our concern about the effectiveness of open learning is supported by recent studies on open learning. The failure rate among students, who followed these programs, were found to be very high; in some cases as high as 60 to 70 percent (Gan, 1998). Although a high dropout rate in the range of 30 to 50 percent is not uncommon for open learning programs, the figures should be closer to the lower end of the range after a few years (Moore and Kearsley, 1996). Many factors contributed to the failure rate. They range from lack of proper facilities to the attitude among students and teachers involved in the program. Many students do not have internet-ready computers to access materials for their courses. Some students were just not ready to follow such a program, where they have to endure the consequences of working independently most of the time, particularly the feeling of alienation and isolation. Not all teachers were ready either. Some are not sufficiently committed to adjust their teaching to suit distance learning, involving much distance communication.

In view of the above problem, we in the Multimedia Development Centre, University of Malaya (MDCUM) started developing a template of the Online Course for the university, which will be a stepping stone towards the development of an effective learning model for the university and other higher institutions. Our approach takes the view that the teachers are the best people to handle the instruction, though a shift in their teaching paradigm may be required.

### A view of open learning

Open Learning, also known as distance learning, is about extending the knowledge, skills, and expertise of faculty beyond the traditional 4-walled classroom. Open Learning may involve distance education, in that faculty and students are not necessarily at the same location, nor interacting at the same time. Hence, the need for a virtual learning environment to cater for some of the program's requirements. However, the high rate of dropout mentioned above indicates that the transition from the traditional face to face instruction and distance learning is a big one, which may have been taken lightly by many institutions when they embark on such a program. They (or more accurately, the students) are now paying the consequences. We believe that open learning should be very much rooted to traditional teaching and that experienced teachers should be employed to handle such a program. This is definitely not the case in many universities, the University of Malaya included. Very often these teachers are part-timer or those with special interest in the new technology.

It is a well established fact that even in the traditional academic setting students may not survive if most of the lecturers involved in a particular program are part-timers or inexperienced teachers. As an example, since the matriculation program for our university was started in 1997, the rate of failure has increased dramatically. One of the reasons for this problem is the high percentage of new teachers involved. In the case of distance learning, the method of instruction has to be given more consideration due to its new setting. For example, even if the teachers are experienced, they are generally new to distance learning. Thus, we can appreciate the problems involved in conducting the open learning program. We propose an alternative method of preparing for this program. We start with a program of upgrading the present university lecturers so that they are familiar with distance learning requirements, since teachers involved are usually faculty members.

Towards this goal, we developed a template for our lecturers to put up their course materials on the web and use them for their lectures, tutorials, assignments and discussions.

### **Rationale for the template**

Teaching in an open learning environment requires computer-mediated communication skills. Communication between students and teachers are done through the internet, though face to face discussion are arranged occasionally. Courseware may be developed to support learning on the web. A variety of communication tools are also required to allow students discuss their problems with their peers and teachers. Foremost, open learning requires quality instruction. In most universities this is achieved through lectures, tutorials, assignments, experiments and projects.

With computers made available to all lecturers in our university, and more lecturers expressing their keenness to put up their course materials online, we decided to create a template to facilitate lecturers to do just that. At the same time many software companies had approached us expressing their eagerness to work with us to publish our courses on the web or to convert them into educational software on CDs. However, we decided not to go along with the software companies' suggestion as we felt that letting them develop the course material would reduce the lecturers involvement dramatically. There were also many practical considerations that dissuade us from taking that option, which we will mention below where appropriate.

On the whole, the quality of university teaching, especially at the undergraduate level, is poor. Lecturers are rarely rewarded for their teaching and consequently do not invest much time or effort in developing and improving it. Most teaching in the universities is conducted through lectures; a method that has not been changed since the beginnings of universities. It is unfortunate to see that the internet is also used by many academics simply to automate the already bad instructional practices. We fear that this is the case, since teachers are under pressure to do more without proper training. For example, teachers may be asked to deliver their lectures through video conferencing, but they would do it just as they would in normal lectures (our experience with the distance learning programs supports this view). Face to face instruction need quality presentation, more so in the case of distance learning. The question is - have the lecturers in the university work towards that? The answer unfortunately is, in most cases, definitely no.

Thus our main motivation behind the development of the template is to create a situation among the lecturers in this university that will encourage them to:

- re-examine the way they conduct their courses
- gain experience in adapting their teaching to suit the needs of open learning.

We believe that when the lecturers use the online template to develop their course material online and encourage their students to use them, the above objectives can be achieved.

The template deals with the following aspects:

#### Course material

In the traditional method lecturers present their material using black/white boards and more recently using slides. The former uses up a lot of the lecturers' time to get the material written on the boards. The latter reduces this problem. However, it is mostly textual or simple graphics, it is very static. Hence many complex topics cannot be presented satisfactorily. With the computers, even on the net, better illustrations, more detailed graphical illustrations and simulations are possible. These should greatly enhance the teaching.

Thus, in our template we provide facilities for lectures to put in their notes and tutorial which are not restricted to text only but may also include graphics, animations and simulations where appropriate. All this may be done without them having to go through an extensive training (the detailed feature of the template is described in Abtar et al, 1999). Lab instruction, for courses with experiments, e.g. Physics, Chemistry and Biology, may be entered as either notes or tutorials.

## Communication

The template also provides communication features. There are two types of communication facilities:

- **Announcement:**  
This features a one-way communication where the lecturers put up messages for the students concerning the course. This may include messages about lectures, submission of assignments, test results and examination schedule.
- **Forum:**  
This feature allows students (and lecturers) to participate in a discussion. The discussion that goes on may be monitored by the lecturer(s) so that it is used wisely. In this manner students can be encouraged to reflect on the subject taught through collaborative and co-operative work.

In summary, what we have tried to do is to encourage lecturers, most of whom have been teaching for many years, to gain experience in using the computers, particularly the web, to enhance their teaching. We felt that it is important that the responsibility of creating the material and adapting to the new environment remains with the lecturers. It would be a huge waste if we have to train so many new teachers to teach using the support provided by the computers, but leave behind those with expertise in particular topics gained over the years. We believe by making use of the template the learning curve for lecturers to adapt to the new teaching style is greatly reduced, hence encouraging more to participate in the effort. Indeed this was proven to be true by the number of lecturers who have registered voluntarily, since July 1998, to put up the material on the web - 204 altogether, with 113 already attended the training.

## Practical issues

There are a few other important issues, which encourage our team in MDCUM to work on the template for the online course.

- **Financial**  
The recession in Malaysia started in 1997. Although it was uncertain how badly the country would be affected we felt that money would be very tight for following years. Since what commercial vendors proposed were often ten times what we can afford, we did not have much choice but do with as little help from them.
- **Time**  
Initially we wanted to develop CD based online courses, since it will permit the use of more extensive graphical display. However, CD development takes too much time which lecturers can ill-afford.
- **Affordability**  
Computers are now more affordable. Many departments in the university already have their own computer labs with internet connections. Also, since the university has a leased line to Jaring (a Malaysian ISP) the online course can be implemented without extra cost.
- **Accessibility**  
The on-campus network line is fast (155Mbps, ATM backbone). Our experience showed that access to the template is very reliable and fast either from within the campus or from outside.
- **Availability**  
Until now the internet has been quite reliable. The template is thus available to students and lecturers almost all the time.
- **Familiarity**  
Since students are already familiar with the instructional methods of lectures, tutorials, etc, learning via the online courses comes quite naturally to them when it is introduced.
- **Effectiveness**  
Some of the features provided by the template has proved very effective in helping students follow some of the courses. Our experience in technology and computer science courses has indicated that some students have changed their attitude in their preparation for the courses. These students made the effort to read the material to be discussed before hand enabling them to understand most of what is said during the lectures.

## **Development and Implementation**

The template was designed and developed with the idea that it should be something which lecturers and students are already familiar with. Hence the main menu consist of *Notes*, *Tutorial*, *Announcement* and *Discussion*. The database for the template is created according to faculties and can be

access by courses. Consequently, each course is given a username and password, which users have to key in to be able to view the material presented and to participate in the discussion.

The software used to create the template is Lotus Notes Domino 4.6. With Domino running on the server we eliminate the need to write complicated CGI scripts to manage the database of courses registered. Initially, we wanted the users to use Lotus Notes clients to interact with the template. However, we finally decided that the clients would be too expensive. Thus, the final template developed is suitable to be used with the web browsers with Java and JavaScript capabilities.

### **The template's capabilities and limitations**

Entering text onto the web is easy. Users need not be familiar with web development or web server to be able to put their course material on the web. Materials that are typed into the template (or copied from other files, e.g. Word document) can be published at a click of a button on the template.

However, there are also many drawbacks. Unlike word processors, the template is not very user-friendly when it comes to formatting text and creating graphics and mathematical symbols. Most of these problems can be overcome with some knowledge of HTML.

### **Extending the templates capabilities and usability**

Below are some of the limitations of the templates and how we overcome them.

- a) Text formatting - this problem can be dealt with easily using HTML.
- b) Graphics and animation - we introduce a browse button that brings up a dialog box for finding folders and files in the available directories. The appropriate files are then attached to the document created by the template. Again, using HTML tags and browsers capabilities, hyperlinks can be made to the files concerned. This is described in detail in the online guidelines.
- c) Mathematical symbols - this is still a problem if the symbols have to be included on the web page. We propose an alternative method of just using a word processor's document as an attachment when a lot of mathematical symbols are needed.

### **Our personal experience using the template**

After using the template for about six months to put our courses online, we find that most of what we need, can be achieved relatively easily. Familiarity with HTML is a great help. Hence, in our training we try to encourage the lecturers to pick up some basic HTML knowledge. Often there are alternative ways to achieve certain tasks. For example documents can be converted into HTML format using Netscape Composer or Ms Word. However, often the result is not very satisfactory. So, we usually modify the HTML tags created by the conversion, to get a better result.

We have tested the template extensively using both Netscape Communicator (NC) and Internet Explorer 4.0 (IE). Most of the time it works well in both. Nevertheless, we also encountered some peculiarities, which can be quite disturbing to new users. Since more lecturers used (NC) the instructions in our guidelines are directed to NC users. Hence IE users might not realise that with IE certain things might work differently. One of the main drawbacks of IE is that latest input may be lost if users do not refresh the page every time they re-enter the same document after exiting it. Other peculiarities include,

- Different results obtained in IE compared to NC when one presses the *Enter* key after typing in the username without keying the password.
- If one course is already opened in NC, opening another NC window and accessing the online course will automatically open the same course. This does not happen when using IE.
- Detecting the path of the files attached to a document in NC (given in the guidelines) is more straightforward than in IE.

### **Further work**

The immediate improvement that can be made to the template is to customise according to individual students. For example each student is given a unique identification number by the university. Hence a system can be made to identify the relevant information for the students such as the courses that

they take. Those courses can then be made available to the students automatically when they access the template.

### **Conclusion**

By developing the online course template, we have learned a lot about how lecturers can be helped to adopt a new style of teaching. We also come to realise the capabilities and the limitations of the browsers as well as their peculiarities. We believe that web-based online courses can be effective in supporting instructors if teachers are involved in the evolution of this new learning environment. Finally, although the template is used initially for on-campus courses, we feel that the experience gained by the lecturers will be useful in helping them to adopt the template to support open learning.

### **References**

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