"Establishing Change":
Third review of the project to introduce educationaltechnological approaches to the provision of higher education at Swinburne at Lilydale

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Overview

The Multi-Modal Learning Project [MML] reviewed and reported in this paper, commenced in 1992 at Mooroolbark Campus of Swinburne University of Technology, Victoria, Australia. It was a pilot project for introduction of educational technological approaches to provision of degree courses offered at the Lilydale Campus from 1996 and in the wider context of the whole university. Swinburne is a multi-campus university operating from Prahran, Hawthorn and Lilydale with higher education and technical and further education sectors. MML is now an accepted strategy for operations at Lilydale Campus and there is some evidence of wider adoption of the principles and techniques throughout the university.

The project introduced strategies and facilities to permit use both on and off-campus of educational technologically enhanced teaching and learning techniques similar to those more frequently used by distance education. These teaching and learning enhancements are in addition to traditional procedures for use with students who attend campuses frequently for classes of one sort or another. MML is a project to encourage and assist change in the educational practices of academic staff teaching at Swinburne and to facilitate student learning.

Figure 1 URL http://www.swin.ld.edu.au/welcome.htm [attached] graphically displays the over-all model of Multi-Modal Learning and shows that it encompasses all traditional teaching and learning modes coordinated and integrated by the learning guide, but allows for these to be utilized on-campus or off-campus. In addition students are empowered and given increased responsibility for their learning by providing them with full details of what is required and resources to assist in achievement of the clearly spelled out objectives.

1992 – 1994

In this period the project was established and assisted students and teachers involved in the Mathematics and Applied Science Degree [later re-named Management Science and Computing Degree]. Three cohorts of students were enrolled from 1993 to 1995 before the degree ceased to take new students due to lack of demand for places in a mathematics degree. During this phase students were required to have portable computers and these were loaned [to all in the first intake and to those on Austudy assistance in the following two intake groups].

During this phase staff learned how to prepare learning guides which document the learning materials and pathways for students and the university set up a publishing program to develop and print materials using "outsourced" service providers. A set of guidelines for staff was negotiated to assist in the development and all the usual staff training and development practices were employed. Staff were given time release to assist in preparation of learning materials which were expected to encompass a wide range of types and media but in practice clung fairly closely to the familiar lecture and tutorial models.

A range of enhancements were made to the centrally provided computer and network services to facilitate off-campus teaching and learning including establishment of one or two study centres. Management of the innovation was by monthly meetings conducted by telephone conferencing across two campuses of the whole group of staff involved.

Influences on the "old university" were slight except that the whole exercise was seen to be removing resources from there and favouring a minor event. Never the less, MML ideas were adopted by staff teaching at the "old university" for the sake of economy of effort except where the MML ideas involved use of portable computers, in which case the material was regarded as unsuitable and impracticable. This circumstance fostered a general negative attitude and an environment inclined towards non-adoption at the "old university".

1995 – 1996

About the second half of 1995, staff of other degrees teaching at Mooroolbark and likely to be teaching at the campus being built at Lilydale, formed committees to plan for the commencement of the university at Lilydale. In this process they examined every aspect of MML with a view to adopting some or all of the innovatory MML practices for the new Lilydale Division. All the innovations were approved and endorsed with some minor variations for the four new degrees at Lilydale including desiring that students have portable computers. However, staff expressed some reservations about how these might be procured and in the upshot, when the government of the day declared that requiring students to purchase equipment was a "secret fee", this aspect was aborted.

A strong period of expansion of MML took place as a large cohort of students and consequentially many new staff commenced four Lilydale Division degrees in 1996 [at Mooroolbark pending completion of the new buildings 5 km distant from Mooroolbark]. This expansion continued into 1997 at the new campus.

The outsourcing model proved very flexible as the skeleton staffed MML Unit was able to quickly expand to assist with the extra workload. This was done by obtaining learning designers, publishing assistants and DTP assistants to assist in creating and publishing learning materials. All of the learning guides were prepared on word processors [in the model, by academic staff, personally] and some were published electronically as well as on paper in 1997. This required development of a simple procedure for converting standard word processed documents to HTML for future enhancement with multi-media resources if desired.

Grants were provided by Swinburne Chancellery to facilitate preparation of materials. One group of subjects obtained additional funding from elsewhere and the entrepreneurial staff concerned developed an extravagantly innovative CDRom providing resource learning material for a set of four subjects. During this period staff were engaged in development of structures for all degrees including four core subjects, learning communities and many other new university teaching and learning projects, especially when the entire campus moved to occupy the new buildings for 1997 commencement. At this time, some problems were encountered with maintaining and extending the electronic communications services which were crucial in encouraging wider use of MML and as a consequence staff fell back on traditional teaching procedures.

1997

In 1997 another new degree [Tourism and Enterprise Management] was added to the four covering applied science, business - accounting and marketing, sociology and psychology offered when the "new university" opened for business. It is worthy of note that the key appointments for staffing the new degree were academics with experience in preparation of materials for distance education. It appears that they have had little trouble in accepting and operationalising MML and its benefits for students and staff, in comparison with some other staff who retreated to the "old university" or continue to resist change at the "new university".

A moderate level of MML adoption has been institutionalized within Swinburne at Lilydale and many staff and the administration publicly state that they do MML. This is most obviously demonstrated by the acceptance of the need to prepare learning guides [and a schedule for that is now included in the official university calendar]. But, it also accepts video-recording lectures for availability on-demand by students and increasing use of electronic communications to and from students and incorporation of intranet access to learning materials. The MML Unit is now "routinely" assisting in the production of approximately 30 - 40 learning guides and associated materials each semester and academic staff seem to appreciate the assistance with the mechanics and some of the educational ideas offered by the sole resident learning designer.

A notable development demonstrating the institutionalizing of the innovation is that two subject coordinators have agreed to publish more than one teaching semester of learning guides given the design and format which allows and facilitates module updating and given the staff members' high work-loads writing new material. This development also indicates a confident stability in some subjects and it releases staff to pursue other academic work.

While all these developments were occurring at Lilydale, the "old university" was re-structuring and taking cognizance of the competitive environment for higher education, locally, in Australia and globally. This prompted a substantial investment in on-line education commencing in 1997. This initiative appears to have learned little from the experiences of MML at Mooroolbark and Lilydale although there has been some operational staff transfer from MML to the On-Line Education Project [OLEP]. Partly this appears to be a function of an attitude that the MML Project is "over", since it is now established, and the effort must go into the "old university" which has many more students. In other words this is a way of forcing the retro-fitting of MML to the "old university" or positively encouraging adoption of the pioneered developments and strategies from the "new university'. This has weakened the ability of the MML Unit to sustain and extend the MML innovation at Lilydale and as yet has not strongly influenced OLEP. A useful number of MML experienced Lilydale academic staff have been identified and inveigled in OLEP especially for the undergraduate preparatory work.

Two aspects of MML teaching facilitation developed at Lilydale in 1997 may be critical in the retro-fitting process. One is on-line questionnaires for which MML commissioned some software creation and found a couple of lecturers to trial its use. This involves subject questionnaires being administered in computer labs or on-line and allows direct data entry [response keying] by the students. This is clearly of value in a fully distance education operation as envisaged by OLEP. It is also only a small step away from on-line progressive tests of content and hence computer managed learning [CML] which is often taken as synonomous with computer based testing.

Parallel to the On-line Questionnaire project, MML Unit has been developing with an external expert consultant from ACER and one Lilydale Course Director, an item banking project for on-line testing. The difference between these two projects within a project is that the item banking involves researching and developing a bank of validated questions to assess higher order outcomes of a subject whereas On-line Questionnaires can be created by adhoc methods as the need arises.

Both of these developments are of interest to the whole university and should demonstrate that the trials and innovative practices of Swinburne at Lilydale are of considerable value to all. This in turn could assist in establishing a revised role for the MML Unit within the university as a whole. As well as attending to the day to day support of Lilydale staff and students, MML has a role in developing educational procedures for the whole.

Staffing

At the inception of the project there was administrative support and senior management from the head of Swinburne Learning Services and heads of both mathematics and computer

science, encouraged by the Vice-Chancellor. Over time this high level support has been eroded or at least diluted by the number of other people and projects involved either with MML or the new campus at Lilydale or developments elsewhere in the university. The core staff of the MML Project comprised one educationist, later joined by another plus casual and technical assistants loaned from other departments. This reduced in 1993 to one senior educationist and a part-time graduate assistant. This staffing remains today but it has been supplemented by extensive outsourcing and grant funded administrative assistants.

The model that has allowed a low cost operation with few staff to achieve substantial systemic change across a large institution is outsourcing. MML Unit outsources educational support, design services, desktop publishing, some technical support and printing services. The result is high quality service at the lowest possible cost. The costs are so low that they have caused some tensions within the university as some services and support staff think they are threatened by such a system.

Costs

MML was initiated with the help of a grant from DEET to two Swinburne University staff members, Peter [now Professor] Jones and Mr Keith Anderson. This grant helped purchase the set of 40 laptop computers and pay salaries for the first twelve months of the project. Swinburne University also contributed some salary and infrastructure monies in the start-up period. Swinburne University also contributed $100,000 to two teaching departments for each of two years [1993 and 1994] for provision of time-release for staff engaged in MML. In 1995 and 1996 $200,000 was provided by Swinburne University for distribution by a MML management committee to efforts to develop MML. Swinburne University also continued to underpin the infrastructure of the MML development effort. In part, Swinburne University was able to grant support and funds for basic MML Unit staffing and costs as well as the grants program monies because the MML publishing program of $100,000 pa [not including salaries and infrastructure] was and is conducted on a cost recovery model. Students purchase the learning guides at cost of production excluding staff costs. Approximately $1.25million has been invested in Multi-Modal Learning to date.

Educational Outcomes

Approximately 200 subjects have been involved to a greater or lesser amount with MML. Staff have redeveloped much curriculum material and many aspects of teaching and learning approaches to subjects. There are still substantial residues of traditional lecture material and work but nearly every subject has been improved in some way due to MML pressure and encouragement. Some subjects have received the assistance of learning designers and all have a more professional appearance than in prior existences. Some subjects have benefitted from team approaches in development.

There has been an improvement in the opportunities for students to use preferred modes of learning and all authors of subject learning guides consciously consider variety in modalities when creating their subject documents. Aspects of resource based teaching have become more evident and some stresses on library and computer network services have resulted.

Students like the features of MML which give them more responsibility and autonomy in relation to their learning. They especially like the learning guides and they are critical of subjects where the development has not been as great as others. These aspects have far reaching effects. We know of one student who returned to study when she became involved with printing some learning guides and realized that the system was manageable for her.

There is some evidence of flexibility in the study modes and Swinburne University has made quite extensive provision through study centres and dialin facilities for more wide scale applications, but at this juncture this aspect is under-developed except for the intended operations under OLEP. The university is considering injecting funds and expertise into

more flexible delivery operations and has a strategy for encouraging every subject at Swinburne at Lilydale to include some aspect of electronic communications in 1998.

A number of academic staff have changed in their understandings of educational practices as a result of vigorous debates over the content and structure of subjects and courses. The requirement to prepare and publish learning materials [on paper or electronically] has acted as a boost to development of skills and knowledge. In addition information papers and seminars have been available to supplement the individual consultative method of information dissemination about MML and associated strategies for educational improvement.

Other Outcomes

The adoption of MML has helped in creating a separate Lilydale standard and identity

for the Lilydale Division of Swinburne. The mission statement of the Division includes statements regarding educational focus and an emphasis on educational research and students and staff appear to believe that they are doing something distinctly different in teaching and learning styles. Certainly, the staff and students have something to display and talk about and informal enquiries and questionnaires indicate strong support for provision of learning guides and some other MML systems. As the MML approach is embedded to a greater or lesser degree, subject by subject, into the learning guides, so the approach is permeating the structure and operations of all subjects offered at Lilydale.

Administrative efficiencies in teaching are appreciated by staff and students alike. These comprise systems which allow students to collect "hand-outs" from the intranet and save staff [to the extent that they pre-prepare] from hours wasted at the photocopier. Outsourcing copying for subjects rather than DIY is a popular fringe benefit of the existence of the MML Unit capacity for publishing. Some staff also find email and voicemail of considerable assistance in administration and student – staff contacts for individual assistance. Some staff are using the email and intranet and internet extensively in teaching to achieve educational outcomes not previously attainable by under-graduate students. In 1998 Swinburne Lilydale will commission its video-conference facility in one or two subjects by importing experts from outside of the university.

The focus on educational research has not been operationalized extensively as staff are extremely busy "doing MML" [which means subject learning guides preparation], however the Division now has an appointed DDVC who has already encouraged staff via MML to keep videos made of their presentations in the main lecture theatre [video-on-demand project of MML] for possible future collaborative research. As the Division becomes more established more research projects will become evident. This function is tied somewhat to the staff deciding to make learning guides for a longer than one semester "publication" as of course not only does this result in financial economies but it also frees staff [and support staff] for other academic tasks such as research.

Evaluations

There has not been any formal educational research into the MML Project or its subsequent implementation other than the documentation efforts of the author and project director and one or two staff papers which have mentioned the effort.

Two research students have made overtures towards MML for permission to gain access to the copious records of the project. One is continuing to work on a thesis but is now located at Hawthorn Campus of the university. The status of the other research student's work is unknown but the person concerned is very active in the implementation of MML and its extension through OLEP. The MML Project Director suggested setting aside a minor amount of the developmental funds to contract an independent logitudinal consultant evaluator but this was not agreed to by the MML Steering Committee. Chancellory have arranged for a

senior person from another university to work with MML and to make some remarks about quality of learning guides. It is not known how far this has progressed.

There are many indicators to be considered as pointing to acceptance of MML and the success of the strategies. Most of these are difficult to quantify and require the attention of someone trained in and devoted to qualitative research. The project director may make a contribution to studies of the effectiveness and indeed continually looks out for indicators of success in order to keep moving the project along. It is necessary to continually assess individual and group readiness for further steps in the process. Thus it is only at this juncture that it is deemed appropriate to increase efforts to improve assessment techniques and introduce electronic data collection via on-line methods, earlier attempts would have failed due to preoccupation with more pressing tasks.

The achievement of students is an important indicator. Some examinations are identical with those given by the same teachers at Hawthorn Campus. Mooroolbark and Lilydale students have performed as well or better than students at the "old university" in exams, placements for Industry Based Learning [IBL] and in job finding. I believe it is an important indicator of success in innovation when 'ownership' is expressed. This is happening at Lilydale. It is also important to observe efficiencies in academic time profiles, judging what people are spending their time on. I believe that some staff are now past the stage of being swamped with the writing and preparation tasks and can engage in meaningful discussions with knowledgable students who have been able to use resource based learning systems put in place by MML. Finally, the continuance of the MML project or innovation for a period of 5 years through all the turbulant times effecting higher education in Australia and the re-structurings at Swinburne University in particular, is testimony that the services are needed and appreciated.