

# Implementing Microsoft PiL in Australian Schools

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**Abstract**—The training of teachers in Information and Communication Technologies (ICT) skills to allow them to integrate technology into the curriculum is critical factor in the education process. It helps educators align technology with students' learning goals, and to more actively engage students in the learning process. Charles Sturt University (CSU) has developed a Graduate Certificate course aimed at enhancing the ICT skills of teachers for this purpose. A substantial part of the program is based on the Microsoft Partners in Learning (PiL) curriculum. This paper examines feedback from the initial cohort of 450 applicants who enrolled in the course. In doing so, we examine the learning and teaching background of these applicants and attempt to understand what factors influenced their enrolment decision. We also report survey results after their first session of study.

**Index Terms**—Information and Communications Technology in Schools, Teacher training, Education

## I. INTRODUCTION

This Microsoft has implemented a variety of strategies over the years to support the development of Information Technology in schools. Partners in Learning (PiL) [1] represents its most recent global strategy to assist in the staff development of teachers at all levels. In Australia, through PiL, Microsoft has committed \$10 million in cash and resources over five years to support government-nominated initiatives that are helping to increase technology skills in teachers and improve educational outcomes for students. As part of that process Microsoft has partnered with Charles Sturt University (CSU) to develop a unique postgraduate level qualification for teachers who want to be able to develop and deliver engaging, technology-rich learning activities. This qualification is relevant to K to 12 teachers, across all key learning areas, offering meaningful and relevant professional learning experiences.

From almost their very earliest days, computers were seen as an important tool to be used in the educational process. Society was promised [2] the ultimate in individualized instruction, an infinitely patient tutor, a system which would revolutionize both the educational processes at school and in the home. There seems little doubt that over the last half century and in the last decade in particular, Information and Communications Technology (ICT) has become central to the way most of the world works, lives and even plays. It has become pervasively and surreptitiously intertwined with so many aspects of daily life that activities which were once the stuff of science fiction are now commonly accepted

practices. However, as the 'no significant difference phenomenon' [3] clearly illustrates, the impact that computers have had on the educational sector is far from the original promise. One of the contributing factors to this shortcoming has been the development of suitable skills in the educators themselves.

Over the last 3 decades there have been many attempts to redress this skills shortage and teacher training programs now routinely include coursework related to developing ICT skills amongst the new teachers. It is therefore somewhat puzzling as to why the impact of ICT in education has not had a greater impact than it has in the business world. This study provided an opportunity to examine some of the motivations and previous experience of teachers who were looking to develop their ICT skills.

The context of the study is unique in that extensive use of ICT is made in the way that the curriculum is delivered at Charles Sturt University (CSU). CSU is the sixth largest university in Australia and the largest provider of distance education. It has programs that are delivered all over Australia and in nearly thirty countries spread through the remainder of the world. Published figures [4] indicate that with over 28,000 students using the eLearning facilities, it is the leading eLearning university in Australia with more than 10,000 eLearning students than its closest competitor. It is a distributed university, having three main campuses located more than 500 km apart as well as nearly ten smaller campuses. It has a 'footprint' which covers an area with a diameter close to 700 km. The significance of this topology is that the university's distributed nature has been one of the reasons that it has been at the forefront of the use of ICT. Apart from the necessity of frequently communicating with colleagues who are geographically dispersed, its students are drawn from an even larger geographic area covering all of Australia. This has extended to a global operation in the last ten years. CSU has a significant and time proven infrastructure in place to conduct conventional as well as online supported distance education all over the world. This has clearly been successful for many years but this was not the major reason that Microsoft chose CSU as a partner to deliver the PiL curriculum.

Microsoft has had an association with CSU since July 2002, when the university introduced its first Masters course that integrated industry certification. What made this initiative different was the incorporation of the full certification process as part of the university course, as well as the delivery of industry content by training partners and the examination through commercial testing centers. From the inception, Microsoft was a strong supporter of this initiative. It was soon clear that such a

course was an attractive proposition to major vendors as well as members of the IT industry. The close working relationship with Microsoft positioned CSU to become a preferred provider when it came time to implementing the Partners in Learning program.

The Graduate Certificate in ICT Education is a four-subject distance education program which has subsequently been extended to Graduate Diploma and Masters levels. However, for the initial four subjects graduates will:

- have completed the Microsoft Partners in Learning program - a peer coaching program that will assist in developing the necessary technology skills and instructional strategies needed to integrate technology into teaching and learning.
- have gained a range of advanced Microsoft application skills - as an integral part of the qualification, with the ability to integrate these applications within the learning environment.
- be able to effectively use a range of software to assess, diagnose and support learning.
- be able to develop and apply information technology based interventions designed to meet the special needs of students in normal classrooms.

Given the discussion above, it is clear that teachers need appropriate skills in order to make a significant difference in the effectiveness of computers in schools. There is also a related question of how this training can be scaled so that it reaches sufficient teachers. This study examines the initial cohort of students to attempt to understand what factors influenced the decision to undertake such a course as well as to understand their perception about the content of the program.

In introducing the Graduate Certificate in ICT Education, the planning documents at CSU allowed for an expected 40-100 applications. Demand was significantly higher than anticipated – there were over 450 applications in the first round! From those initial applications, 180 actually started the course. In order to understand some of the reasons for this, the analysis of applications examined the following broad factors:

- Where applications came from (distribution among states, rural or isolated location and whether from disadvantaged schools)
- Gender
- School level (primary versus high school teachers)
- IT related matters (specific IT responsibilities ,teaching IT or previous IT experience)
- Years of teaching

In Section 2 we analyze the stated motivations for wanting to undertake this course from open-ended responses that students were required to address as part of their application. In Section 3 we present some results from a student survey to understand students’ perception on the program. Conclusions are given in Section 4.

II. MOTIVATIONS FOR WANTING TO UNDERTAKE ICT TRAINING

Where did applications come from? Since CSU is based in New South Wales (NSW), and this being the most populous state in Australia, it was not surprising that the majority (46%) of applications came from NSW.

However, when the application rate in each state is adjusted for the number of teachers in the state, the picture is considerably different. (Fig. 1).

Clearly the application rate from the Northern Territory (NT) was significantly higher than one would have expected. To understand this one needs to realize that NT is largely a rural population. The teachers there have to travel large distances, often in excess of several hundreds of kilometers, just to get to the nearest reasonably-sized town. The small rural communities in which they teach are also often poorly served by other facilities and in many cases, the teachers are only one of a handful of staff at the school. These factors severely limit the opportunities for professional development. Thus an opportunity to develop advanced skills using the distance education model was very well received.

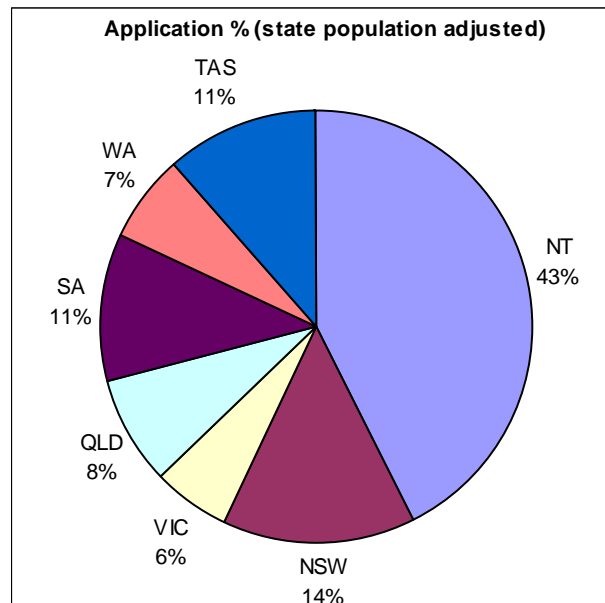


Figure 1. Distribution of applicants as a proportion of state teachers

The somewhat lower number from Victoria might also be explained with a converse argument. Much of that state contains towns and cities that are within reasonable driving distance of large population centers and thus afford good opportunities for professional development.

Further examination of whether applicants were drawn from a rural or isolated location confirms the view that this course was attractive because for rural and isolated teachers, there are few viable opportunities for professional development (Fig. 2).

In comparing the data in the graph, it needs to be appreciated that in Australia, fewer than 15% of the population lives in rural areas so any value above 15% represents a decided interest from the rural community. One can conclude that the interest from teachers in rural communities was at least twice that of their urban colleagues.

A similar but far less pronounced picture emerges when disadvantaged schools are considered. Teachers from disadvantaged schools are disproportionately highly represented in the applications.

Despite public perceptions that IT is a male-dominated domain, many more females applied than males. However, gender issues were not found to be significant with males and females applying in much the same proportion that one would expect of the teaching population.

In a similar way, the type of schooling level did show a slight tendency to attract more high school teachers than one would have expected. This was however, not statistically significant and was able to be understood in the context of the various motivations that teachers reported.

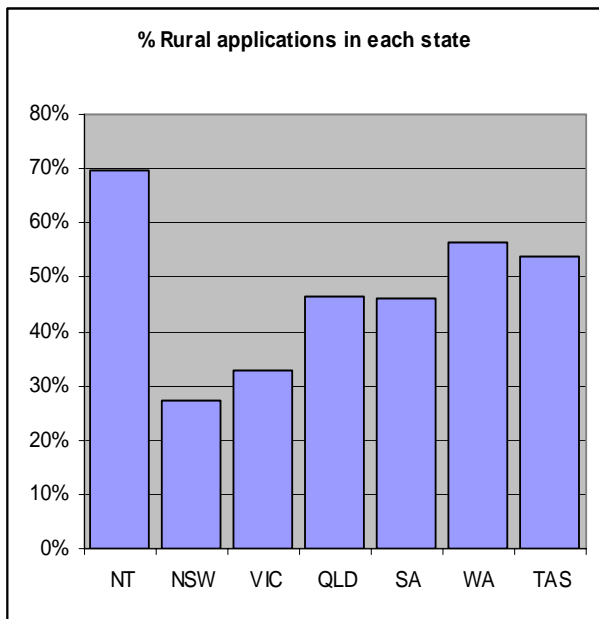


Figure 2. Percentage of rural applicants according to states.

However, when it comes to IT related matters there were a few surprises. The three factors that were examined were whether the applicant :

- a) had IT responsibilities in the school,
- b) was teaching an IT-related curriculum or
- c) had previous IT experience.

The results are shown in Fig. 3. Given that the Graduate Certificate and the underlying PiL and Microsoft Office certification programs are aimed at beginners, the level of involvement of many applicants with IT related matters was unusually high. Some of this can be attributed to the fact that despite having such skills, most teachers were self taught and often felt that they had gaps in their knowledge. Allied to this was the opportunity to achieve a formal, recognized qualification that could be used on their resume. Such a scenario is not uncommon. The initial offerings of IT Masters courses was also characterized by a 'first flush' of applicants who had a high degree of practical skills that had been achieved through experience or other non-award courses. This was however, to be a mistaken strategy as will be seen when

the analysis of student reactions to the content of one of the subjects is presented in the following section.

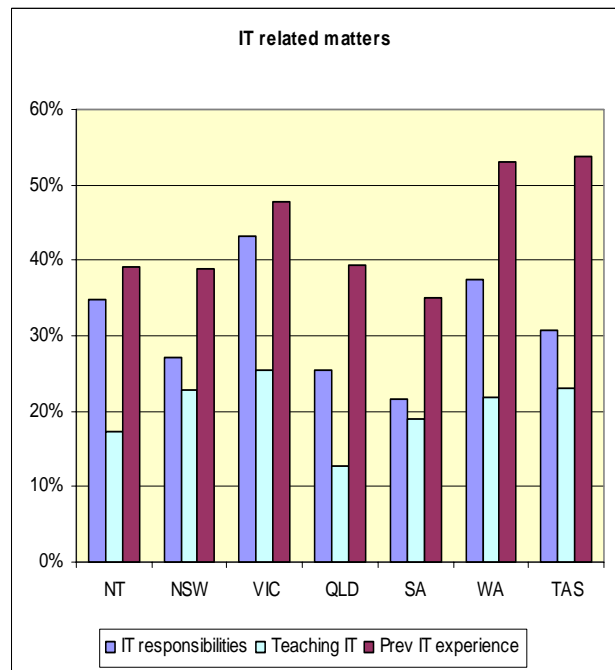


Figure 3. IT Related Matters

Conventional wisdom suggests that younger teachers would be most attracted to such a program and this was indeed the case. Approximately 40% of all applications were from teachers who had less than five years teaching experience. However, what was not expected was the fact that for teachers in the 5-10, 10-20 and 20+ years experience groups, the remainder of applications were almost equally distributed. It was surprising to find a significant number of teachers in the later stages of their career applying. A disproportionate number were actually in leadership positions. It reflected a desire to tackle the problem of implementing IT curriculum integration from the top, not just the enthusiastic 'young guns'.

In analyzing the stated motivation for applying for the course, the eight most mentioned categories of factors were presented in Table 1.

As already indicated, developing IT skills was by far the most reported motivation. Specifically mentioned was the fact that since the course was associated with Microsoft, there was a perceived relevance and credibility that was not always available with university courses. This phenomenon had already been observed with the very successful implementation of the IT Masters courses for IT professionals.

Among the personal goals, quite a number of teachers saw such a course as increasing their value as employees. Some were on fixed contracts, and others were part-time, but both such groups stated that having this qualification and skill set would ensure their future employment prospects.

## IMPLEMENTING MICROSOFT PiL IN AUSTRALIAN SCHOOLS

TABLE I.  
MOTIVATION FOR APPLYING FOR THE COURSE

Further enhance IT knowledge	170
Personal goals	140
Establish Peer coaching at school	125
Integrate IT across curriculum	105
Empowering students	63
Improve quality of education	62
Resource development	49
Have leadership role	48

One final observation that needs to be made regarding motivation is the role that scholarships played in attracting applicants. In order to launch this program, Microsoft provided funding for a number of full and half scholarships. Only 7% of applications did not also apply for a scholarship. This clearly indicated that the availability of a scholarship was a significant factor in taking the first step in applying for the course. While failure to be awarded a scholarship was a major reason for most of those who did not eventually enroll, just under half of the total number of applicants (42%) did actually follow through and enroll. This was quite remarkable since of those who enrolled, only twenty students (i.e., 4.5% of applicants) received a full scholarship and twenty received a partial scholarship. The significance of scholarships as a means of attracting interest cannot be stated too strongly.

### III. STUDENTS' PERCEPTION OF THE PROGRAM

When the program was first designed we expected most applicants to be motivated by much the same reason – that is, they would see the program as an opportunity to enhance their ICT skills. The analysis, however, gives a different finding, with the program attracting a diverse group of teachers with varying expectations. For example, approximately 25% of students indicated that they enrolled to improve their rudimentary IT knowledge and skills. But for more than 30% of applicants this was not the main consideration. The latter already had an IT background and were more interested in using the course to help implement IT across the curriculum and to establish peer coaching at their school. This difference in expectation might also be put down to the range of teaching duties performed by students who enrolled in the course, which ranged from kindergarten, primary, and high school teachers, as well as teacher librarians and school principals.

When commencing the program, students were given a choice of enrolling in either one or two subjects. About 30% chose the single subject option.

The initial subject offering consisted of a Fundamentals of ICT subject, and a Partners in Learning subject based on Microsoft's PiL curriculum. The Fundamentals of ICT subject covered topics similar to those that might be offered in a typical first year Bachelor of Information Technology course. Most students were happy with the content of the PiL subject, but there were varying degrees of discontent with the introductory subject. For example, one of the topics in the Fundamentals of ICT looked at ASCII coding and converting between the binary and decimal number systems. This topic caused grievance

among some students, in particular, regarding immediate applicability of such topics in their classroom.

We surveyed students at the end of the first semester. Our aim was to understand what these students saw as relevant so we could enhance the content and delivery of the program. Our survey was conducted by students online. About 25% of students participated in this survey, and of these, 70% were primary school teachers. Breaking this down further, the roles of survey participants were as follows: principal / deputy principal (13%), ICT Teachers (36%), while students who identified themselves as simply classroom teachers totaled 51%. The results of this survey are presented below.

*Question 1.* I am satisfied with the content of subjects

TABLE II.  
REPLIES FOR SURVEY QUESTION 1.

	ITI501 (PiL)	ITC557 Fundamentals of ICT
Strongly agree	34%	4%
Agree	48%	8%
Uncertain	7%	26%
Disagree	7%	30%
Strongly disagree	0%	26%

Bearing in mind that 70% of survey participants were primary school teachers, the results here clearly demonstrate that the contents of the Fundamentals of ICT (ITC577) were not well received by this group. This was further emphasized by feedback we received through phone calls, emails, and forum postings. As a result, we modified the contents of ITC577 in time for the next offering, such that the curriculum was more closely aligned with the NSW middle school ICT curriculum. It remains to be seen whether these changes will be favorably received.

*Question 2.* After completing the subject I feel comfortable in using technology as part of my teaching

TABLE III.  
REPLIES FOR SURVEY QUESTION 2.

	ITI501 (PiL)	ITC557 Fundamentals of ICT
Strongly agree	32%	4%
Agree	58%	26%
Uncertain	0%	26%
Disagree	4%	8%
Strongly disagree	0%	26%

The high ratio of positive replies demonstrates that those who studied ITI501 increased their confidence in being able to implement technology in the classroom. Although ITC577 does not fare as well in this regard, it should be remembered that it was designed to enhance the

fundamental ICT skills of teachers rather than increasing their ability to use these skills directly in their teaching.

*Question 3.* It is important to form a study group with other students while studying the subject

TABLE IV.  
REPLIES FOR SURVEY QUESTION 3.

	ITI501 (PiL)	ITC557 Fundamentals of ICT
Strongly agree	25%	45%
Agree	18%	30%
Uncertain	18%	12%
Disagree	22%	0%
Strongly disagree	4%	0%

Survey results clearly indicate that this group of teachers needed help in grasping the concepts of ITC577. We believe the most plausible reasons for this are:

- These students have not had the necessary distance education experience to handle a subject at this level. The responses to Question 4 below support this claim.
- These students found that the topics covered were not immediately applicable to a classroom environment and this discouraged them.

*Question 4.* My understanding of the contents of the subject would be enhanced if I could participate in lectures delivered over the Internet

TABLE V.  
REPLIES FOR SURVEY QUESTION 4.

	ITI501 (PiL)	ITC557 Fundamentals of ICT
Strongly agree	22%	45%
Agree	29%	30%
Uncertain	18%	12%
Disagree	15%	0%
Strongly disagree	11%	0%

To act upon the positive response to this question, we have begun experimenting with the delivery of recorded lectures (audio) for ITI501. We are also began investigation of podcasting and video streaming as the delivery vehicle for lectures.

Another comment received in the context of this question concerned the strong American flavor of the ITI501 curriculum. Considering the PiL was originally developed for schools in the USA schools, this comment is fair, and we need to address this issue of localized content at some point in the future.

Based on the results as well as informal feedback, we are considering a number of options to improve the

delivery of the course and increase the satisfaction of students. One is to have two distinct Graduate Certificate courses: one for primary school and one for high school teachers. Before embarking on this approach, however, we have decided to wait and see the response from students after the latest round of changes made to ITC577. Another option (and one that we will implement from next year onwards) is to upgrade this Graduate Certificate into a Graduate Diploma containing eight subjects. We will add an Adobe digital curriculum stream to renew focus on the implementation of ICT in the classroom. We will also add a new ICT subject as an alternative to ITC577 – one which focuses more on the use rather than the theory of ICT.

In addition, this new structure will give students the option of exiting with a Graduate Certificate by completing any four combinations of the eight subjects that will be on offer. We believe that this approach will give even greater flexibility for teachers to satisfy their diverse needs.

IV. CONCLUSIONS

When this program was being developed, our initial expectation was that it would attract teachers mainly interested in enhancing their ICT skills. However, our analysis of applicants has revealed that a considerable portion of enrolled teachers are reasonably familiar with ICT and seeking to immediately implement technology as part of their classroom routine. Some of the content of our Graduate Certificate has had to be modified in line with these expectations.

One surprising outcome was the age distribution of the applicants. Not only were there the predictable applications from young teachers but also a significant number of late career teachers who were also in administrative positions or positions of influence who applied for the program so that they could lead changes in teaching practice. The Microsoft PiL components were well received as being relevant and of immediate utility in the school situation while the more traditional university curriculum needed to be re-designed to better cater for the specific needs of the students.

A major factor in the success of the program has been the scholarships provided by Microsoft. Clearly, the teacher community feels that it is a prestigious to receive such a scholarship. In addition to these scholarships, the NSW government also supported our new course initiative by providing twelve full scholarships for teachers from isolated and rural schools. It is anticipated that scholarship funding will continue from both sources in the future.

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## IMPLEMENTING MICROSOFT PiL IN AUSTRALIAN SCHOOLS

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