COUNT ME IN TOO
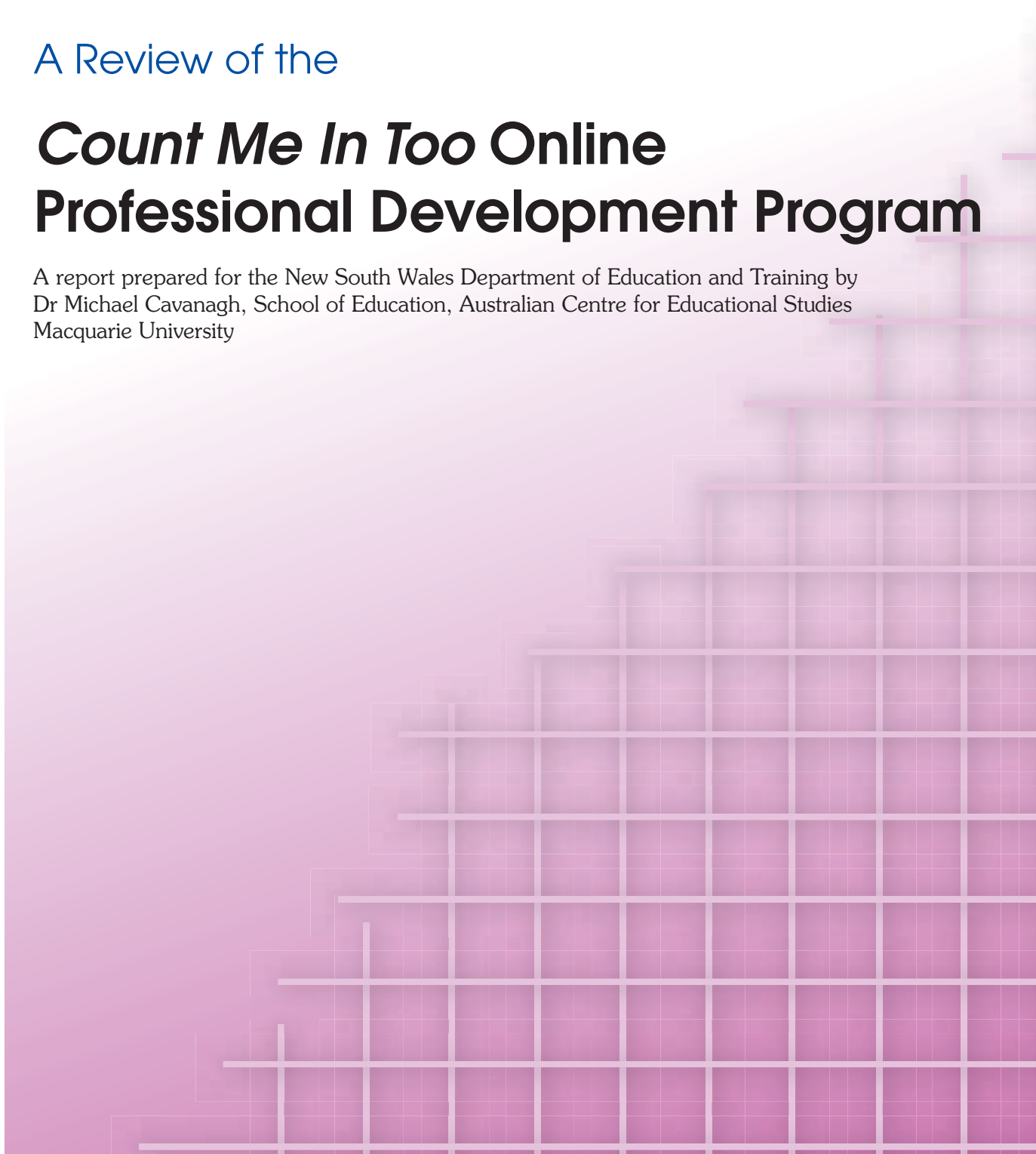Online

A Review of the

Count Me In Too Online
Professional Development Program

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Contents

Executive summary

This report presents the findings of an investigation into the *Count Me In Too* (CMIT) Online project operating in Department of Education and Training (DET) primary schools across New South Wales. A combined total of 442 teachers from 68 schools participated in the project which ran first in Terms 1 and 2, and second in Terms 3 and 4 of 2005. The investigation was conducted in December, 2005.

CMIT Online is a professional development project that uses ICT resources to support teachers who are already successfully implementing CMIT. Teachers formed a team within their school and met regularly to discuss issues involved in the maintenance of CMIT. They were also expected to take part in a teleconference and use a web-based discussion site to share their experiences and seek advice from participants in other schools and the DET project mentor. At the conclusion of the project, all teachers were required to submit a single-page written evaluation.

The aims of the present study were as follows:

- to summarise the key ideas emerging from the teachers' evaluation forms
- to analyse how the discussion site is being used
- to suggest ways of improving participation on the discussion site.

Procedures

A total of 108 evaluation forms were received from 50 schools. Most evaluations were completed by individual teachers but some were the collaborative work of a number of teachers in the same school. The evaluation form contained five questions relating to the teachers' experience of the online project and how well it had assisted them in running CMIT in their school. Teachers' responses were coded and analysed question by question.

The discussion site contained 258 messages organised into 101 topic threads. Forty schools posted messages to the site and 48% of all messages were contributed by teachers with the remaining 52% coming from the online mentor. Participation in each thread was counted in terms of the number of messages posted and the number of schools taking part. A series of five categories were developed to analyse the content of individual messages and provide information about the nature of teachers' web discussions. The role of the online mentor in supporting the discussion site was also evaluated.

Results and discussion

The results are reported in two parts. Part A reports the key issues identified by teachers in their written evaluation forms. This part presents information about how the teachers rated their participation in the online project and how they used its resources to assist them maintain CMIT in their school. Part B analyses patterns of activity by teachers and the online mentor on the discussion site and makes recommendations to improve teachers' participation on it.

The teachers reported that the project learning tasks were relevant to their classroom practice and the school team meetings were valuable in providing opportunities to work collaboratively and share ideas. They thought that the *123 Count with me* CD-ROM containing the project materials was extremely useful and they commented on the advantage of having all of the tools and resources they needed in one easily accessible package. Most teachers felt that their knowledge and skills had improved as a result of their involvement in the online project, regardless of how long they had been involved in CMIT. Beginners were able to draw on the experiences of more senior colleagues and many veteran CMIT teachers noted how their participation in the project served to reinvigorate their enthusiasm for the numeracy program.

The development of a detailed school plan was critical in maintaining CMIT. Successful plans included an allocation of funds for staff development and release-time to undertake an initial assessment of students as well as a reorganisation of the school timetable to allow for the formation of CMIT learning groups across classes. Facilitators commented that groups of children based on ability level rather than age cohort were more homogeneous in nature and resulted in improved learning outcomes for students. The structural changes in the school schedule that were required to run groups in this manner helped to raise the profile of CMIT in the school and make it a more accepted part of the curriculum.

Teachers also made suggestions for improving the online project. They wanted more time to consider all of the material contained on the CD and release time so that they could undertake a more careful initial assessment of their students. The teachers recognised that an accurate measure of each child's abilities was important if they were to place the students in the appropriate position on the *Learning Framework in Number* and thus design appropriate learning activities for them.

Many teachers commented on the impersonal nature of their interactions during the online project and expressed a desire for face-to-face meetings with consultants and participants from other schools in preference to the teleconference and web discussion board. The online mentor regularly exhorted participants to become more active users of the site by posing questions for the group and encouraging teachers to share their ideas and experiences. However, relatively few teachers used the discussion site to post messages and those who visited it often reported that there was only a limited amount of relevant information available. This acted as a disincentive for teachers to engage further with the web site.

The message threads were generally limited to brief exchanges between the online mentor and a single school and there were only a few occasions when the discussion threads generated significant online communication among the teachers. The longer threads were characterised by teachers seeking advice from colleagues and sharing resources and practical ways to implement CMIT with each other.

Conclusion

The teachers' evaluations show that *Count Me In Too* Online was largely successful in supporting the maintenance of CMIT in the participating schools. One of the most positive outcomes of the project appears to have been the opportunities for collegial support experienced by teachers working together in school teams. Teachers who were diligent in meeting regularly and completing the learning tasks appeared to gain a great deal from the project.

Although teachers occasionally shared their knowledge and experience of CMIT on the discussion site, participation levels were generally low and the teachers did not become an online community of learners as intended. Involvement in the discussion site might be increased if teachers met together at the start of the project as this would provide an opportunity for participants to get to know each other better. They could also be introduced to the discussion board in an environment where technical support was available if required. Personal emails could be used during the project as a way of alerting teachers to messages of interest and reminding them to visit the site. The online mentor could also delay replying to messages asking for advice so that other participants had a chance to respond as well.

PART A

The teacher evaluation forms

1. Introduction

Count Me In Too Online is a professional development project that uses ICT resources to support teachers who are already implementing the numeracy program *Count Me In Too* (CMIT). The CMIT Online project is centered on teams of teachers within a school that worked together and met regularly to discuss issues involved in maintaining and developing CMIT. Each school team chose a coordinator who is responsible for organising the team meetings and facilitating the online project within the school. All teachers receive a CMIT Online booklet (Curriculum K–12 Directorate, 2005) which details the objectives of the project, describes the materials and resources available to the participants and gives the contact details for the Department of Education and Training (DET) project mentor.

The principal resource of CMIT Online is the *123 Count with me* CD-ROM. The CD includes a Schedule for Early Number Assessment (SENA) Wizard tool to facilitate the recording of students' assessment results, an overview of the *Learning Framework in Number*, video segments showing CMIT teaching and learning, the *Developing Efficient Numeracy Strategies* (DENS) materials and a number of other resources designed to support group work and classroom management. All teachers who joined the project received their own copy of the CD.

A teleconference was used at the start of the project to allow participants to introduce themselves and their school teams to each other. Participating teachers also obtained password protected access to an asynchronous online discussion board. The discussion site allowed teachers from schools spread over a wide geographic area to communicate with each other, share their ideas and experiences, or to ask for information and assistance. The essential aim was to encourage the development of an online learning community among the teachers so that they could learn with and from each other. An online mentor from the DET monitored the discussion board and supported teachers as they used it.

The CMIT Online program is structured around a series of ten learning tasks that the participants complete in their school teams. In fulfilling the tasks, the teachers implement various aspects of CMIT and reflect on how to maintain CMIT in their school. The initial tasks required teachers to familiarise themselves with the CD and participate in a teleconference which enabled teachers from different schools to introduce themselves and an outline of the project was explained by the DET mentor. Team coordinators also took part in an initial online discussion during which they provided some background information about their school and introduced the school team. The other tasks involved the organisation of team meetings to discuss issues associated with the implementation of CMIT.

The project ran twice during 2005 in DET primary schools throughout New South Wales. The first cohort consisted of 223 teachers from 32 schools who undertook the project in Terms 1 and 2, and the second group involved 219 teachers from 35 schools in Terms 3 and 4. The total sample therefore comprised 442 teachers from 68 schools. The schools in each turn of the project were randomly subdivided into two groups of approximately equal size by the project mentor. Each of the school groups participated in separate

teleconferences but contributed to the same online discussion board and schools from the first cohort were able to continue accessing the discussion site during the second run of the project.

Task 10, completed at the conclusion of the project, required each teacher to complete a one-page evaluation form containing five questions and submit it to the DET mentor. In total, 108 forms were received from 50 participating schools. Of these, 82 were completed by individual teachers and 26 were collaborative efforts from more than one teacher in the same school. Two schools returned both individual and collaborative evaluations. A copy of the evaluation form can be found in the Appendix and the teachers' responses to each of the questions on the form are analysed in this part of the report.

2. The CD-ROM

The first question on the evaluation form asked teachers to comment on how well the *123 Count with me* CD-ROM had helped to support CMIT in their school and to say if they would continue to use the CD in the future. The respondents were generally pleased with the quality of the CD and considered it to have a number of advantages over other CMIT printed materials. Whether the teachers were new to the CMIT program or had been involved for a number of years, they all found various parts of the CD useful in planning for and implementing CMIT in their classrooms. In particular, the teachers rated highly the SENA Wizard, the DENS Activities and the video vignettes; there were strong indications that these particular aspects of the CD would continue to be used into the future.

2.1   Access and organisation

The CD was variously described as "attractive", "extremely relevant" and "an excellent resource" offering a wide variety of useful materials. It "increased the interest and momentum" of CMIT and gave teachers a much better overview of the program. Many teachers commented on the advantage of gathering together all of the resources and tools they needed to help them with CMIT.

Some teachers noted that even though many of the materials on the CD were similar to those they already possessed in printed form, it was more convenient to have all of the resources and tools in one place. This made the CD a "good overview of CMIT" and a "quick reference point", and viewing the CD was "better than looking through lots of books". The teachers appreciated the fact that they could readily access the materials they needed to learn about CMIT and implement the program in their classrooms from a single resource that was easy to store and retrieve.

Another feature of the CD that teachers regarded favourably was the coherent way in which the various materials were arranged within it. They described the CD as "easy to carry around" and "so easy to access" and commented that they could readily locate the precise piece of information they sought. The index was comprehensive and each sub-section was structured in such a way that even teachers who professed limited computing skills could easily navigate the CD. Because it was so easy to find what they wanted on the CD, the teachers often rated it as "user-friendly". As one teacher put it,

> Simple to use, easy to print, very convenient.

The convenience of accessing all of the materials via the CD encouraged teachers to use it more often and this, in turn, helped them to improve their understanding of CMIT. It was straightforward for teachers to open the CD and re-familiarise themselves with aspects of the program when required. They could use it to find all of the information they needed at various stages in their implementation of the program.

> *The CD is excellent. It gives me the information I need and answers the questions I have. The resources are at your fingertips. I refer to it often.*

And if there was something that the teachers felt they needed to review, the CD provided an excellent means by which to do so. They could simply use the CD as a means to "easily recap and revisit" any aspects of the CMIT program when needed. A small number of teachers, particularly those who were new to CMIT, felt overwhelmed by the amount of information on the CD. They could see the potential for using it but wanted time to study it more carefully and said they needed personal support to guide them through this process. As one teacher put it,

> *The CD had lots of useful tools but I would have liked to have someone talk me through the issues.*

The different needs of beginning and experienced teachers as well as the desire for greater personal contact are subjects that occurred regularly in other parts of the evaluation surveys and are referred to in later sections of the report.

2.2   Specific features

As well as conveying their general feelings about the CD, many of the teachers' responses identified particular aspects of it that they found especially relevant and useful. Figure 1 shows the proportion of specific references made to the three parts of the CD-ROM that were specifically mentioned by teachers and these are now discussed in detail.

2.2.1 SENA Wizard

The single most important feature of the CD as reported by the teachers was the SENA Wizard. The teachers valued having the sample SENA testing materials included in the CD so that they could gain ready access to them when undertaking an initial assessment of individual students within their classes. Teachers described the wizard as "excellent" and an "extremely useful tool" and many reported that they were using it to track the progress of their students.

In particular, the teachers commented favourably on the links from the SENA Wizard on the CD to Excel spreadsheets. The process of recording results for individual children was made considerably easier by this new facility and many teachers used it to input data for their students. Teachers often noted that it was "easy to convert results to a spreadsheet" and that the CD provided "an excellent tool for recording class results". The ease of storing all of the assessment information about students on the CD was also mentioned by teachers. Storing the data on the computer "saves paper and space" and when a hard copy of the results was required, the assessment sheet could be "easily printed".
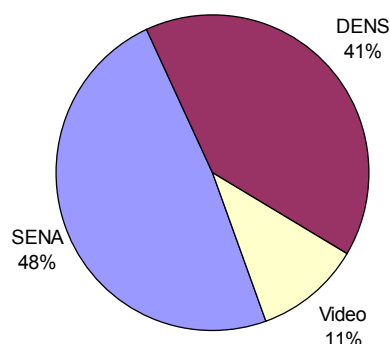
Figure 1. Specific aspects of the CD-ROM mentioned in evaluation responses

Teachers noted that having the results displayed on a spreadsheet made it much easier to compare students' results and match them to the *Learning Framework in Number*. This, in turn, facilitated the process of grouping children for classroom activities. Some teachers reported that they had used the wizard to practise matching their students to the Learning framework and thus develop their skills in this regard.

The teachers also used the instructions contained on the CD for converting Excel spreadsheet results to graphs and they noted that this provided them with a very good way of tracking students' progress from year to year. Teachers could use the graphs to "see at a quick glance" how students were performing across each grade. As one teacher commented,

> *The SENA Wizard was most useful in tracking students in a visual way along the CMIT framework.*

2.2.2 DENS Activities

After entering results for individual students and locating them on the CMIT *Learning Framework in Number*, the teachers then used the CD to match particular activities to the specific needs of each child. The fact that the activities on the CD were linked to the Learning Framework made it considerably easier for teachers because the DENS materials "provided appropriate activities for each child". The easily accessible teaching ideas and resources that are contained within the DENS materials on the CD were highly valued by the teachers.

> *I found the DENS information so useful – it gave me many more activities to use.*

These practical examples of how to implement the program in the classroom were particularly useful to teachers. The fact that these materials were also graded in line with the results obtained from the SENA Wizard made it considerably easier for teachers to select activities that were appropriate to the developmental levels of their students. The teachers welcomed the strong focus on the needs of individual students that was central to the DENS activities contained on the CD.

2.2.3 Video vignettes

The CD also contained a number of brief video segments showing interviews with teachers and consultants who had experience of the CMIT program as well as groups of children working on CMIT activities in their classrooms. A small number of teachers identified these video vignettes as a valuable part of the CD.

Some teachers drew inspiration from the fact that the teachers who were interviewed seemed so enthusiastic about the CMIT program. The response from one school included the comment that "video clips of teachers' opinions and ideas were useful and inspiring".

A teacher from another school noted that it was "good being able to observe the activities being implemented 'live' on the CD". This comment was reflected in other survey responses and it is clear that those teachers who mentioned the video segments found them valuable as a means of seeing how the DENS activities would work in the classroom. This was particularly the case for teachers who were beginning to use the materials for the first time or with a new class.

> *The video clips were very useful for someone starting in a new grade – ideas for how to play games and classroom displays.*

2.3   Future use

Embedded within the first survey question about the benefits of the CD-ROM was a question which asked teachers whether they would continue to use the *123 Count with me* CD-ROM and Figure 2 shows the proportion of evaluation forms giving each of the recorded responses. None of the teachers explicitly stated that they would not use the CD again but a large percentage of respondents omitted this part of the question and so it is difficult to say whether they definitely intend to use it or not. However, almost all of the responses to Question 1 highlighted positive aspects of the CD so it is likely that the majority of these teachers will access it in future. The fact that so many teachers failed to provide an unambiguous answer suggests that Question 1 should be re-organised as two separate questions in future surveys.

Of those teachers who did respond to the question, almost all indicated that they would use the CD in future. A few teachers went further and highlighted specific aspects of the CD that they planned to use. These particular aspects tended to reflect the specific features of the CD already outlined in Section 2.2. So, even though much of the content of the CD was also available in books, teachers valued the ready access and user-friendly organisation of the electronic resource and indicated a strong preference for it.

> *Yes, I will continue to use the CD although we have hard copies as well.*

Responses to the issue of future use also showed an emphasis on the SENA Wizard. Teachers made the point that since the spreadsheet links were unique to the CD then these aspects would definitely be used again.
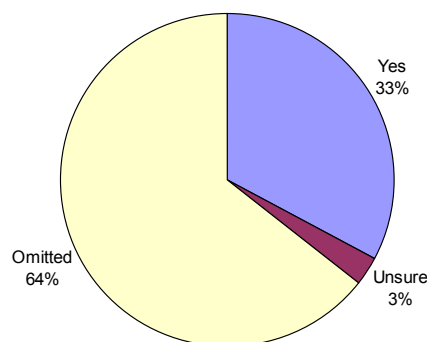

Yes
33%

Unsure
3%

Omitted
64%

Figure 2. Future use of the CD-ROM

2.4 Beginning and experienced teachers

Some survey responses indicate that teachers who were relatively new to CMIT gained different kinds of benefits from using the CD than their more experienced counterparts. Novice teachers, especially those who worked in schools where CMIT had been operating for some time and had the support of colleagues who were familiar with the program, found that the CD could provide them with the means to learn more about CMIT and the classroom resources.

> *Being a first-time teacher, I found the CMIT introduction, explanations and activities useful.*

Experienced teachers also noted this benefit for the beginners with whom they worked.

> *I was very familiar with CMIT before commencing the project. … The CD-ROM is a wonderful resource – an excellent tool for new teachers with little experience with the CMIT program.*

However, a basic understanding of CMIT was a necessary requirement in using the CD effectively. In a small number of schools, all of the teachers were new to CMIT and that created particular difficulties. Teachers in these schools reported that in order for the CD to be of any real value, they first needed to have a reasonable grasp of the broad principles of CMIT and some knowledge of its terminology. The information and language in the CD needed to be "de-mystified" before further progress in implementing the program could be made. As the response from one school noted,

> *We had difficulty in understanding CMIT. We ended up doing a day's training with [consultant] and found this fantastic – when we understood what the CD was about. If it was just left to us and the CD-ROM we wouldn't have implemented the program at all. You need to understand terminology/framework before you use the CD.*

For teachers who had been working on CMIT for some time the novelty of the CD seemed to reinvigorate their enthusiasm for the project. The high quality presentation of such a wide range of useful resources gathered together in the CD set the tone for the teachers' own work. As one teacher stated, "It inspired us and set a professional tone".

Although these teachers were already familiar with the basic principles of CMIT, they found that the CD helped to cement their understanding.

> *It reinforced our knowledge of the framework and refocused us on the aspect of 'Where to next' in our teaching.*

However, there were other experienced teachers who conveyed a strong sense that the CD was "covering things that are already in place in the school" and that they had seen it all before so the materials "didn't offer anything that was new". These teachers did not regard their use of the CD as having improved their work with CMIT and felt it was far more beneficial for those teachers who were new to the program.

These comments suggest that the needs of teachers who are just beginning their association with the numeracy program are quite different from those who are more experienced in running groups and using CMIT activities in the classroom. There needs to be a reasonable number of experienced teachers in a school to assist the relative newcomers and guide

them through 'basic training' in the *Learning Framework in Number* and other aspects of the program, but a mixture of beginning and experienced teachers is also important. As will be seen in Part B of the report, a blend of teachers at different stages in their development of CMIT can act as a catalyst for more robust and meaningful exchanges on the discussion board.

3. Knowledge and skills

The second question on the evaluation form dealt with the knowledge and skills the teachers felt they had gained by participating in the online project. Most gave a very positive response to this question and acknowledged some general benefits as well as a number of specific aspects of the project that they found particularly valuable. These are discussed in the following sections, as well as factors which teachers identified as hindering their progress in developing the intended outcomes of the project.

3.1   General aspects

Teachers from one school described the project as "informative, useful and presented in an interesting and stimulating way". There were other broad benefits identified by the teachers too. In particular, these related to the ways in which the project assisted teams operating within individual schools in their implementation of CMIT. The project provided momentum for beginning teachers and encouraged team members into action.

> *Participating in this pushed us along and made us get started. We got on with our SENA tests and the group meetings triggered us into doing something.*

Even in schools where CMIT had been operating for some time, the project seemed to reinvigorate the teaching staff and refresh their commitment to CMIT. As the combined response from one school reported,

> *The project has helped to re-motivate and inspire teachers and CMIT as it has been running for at least five years.*

Participation in the project also gave the members of the team a focus for their discussions and provided a structure through which they could improve their understanding of CMIT through professional dialogue with each other.

> *Teachers gained a lot through group discussion regarding CMIT. It reinforced and developed our knowledge of CMIT and enthusiasm to maintain this approach in teaching maths.*

Perhaps the most valuable aspect of the project was the way in which it engendered an esprit de corps among participants who worked together and supported each other.

> *Although we had good background knowledge of CMIT, it was good to form and work as a team. We collaboratively planned and programmed.*

Individual teachers also reported that their knowledge of pedagogy in numeracy had improved: "It gave me some insight as to how students learn and how I can assist their learning". Insights into the teaching and learning process gained by participating in the project could then be transformed in very practical ways, "I feel I have more confidence now to achieve outcomes with the children". For some teachers, collaborative involvement

with colleagues was "invaluable" and their involvement in the project had a transforming effect on their classroom practice.

> *Very useful and practical knowledge which has dramatically changed my teaching of maths in the classroom from quiet textbook maths to enjoyable, hands-on "noisy" productive maths.*

3.2 Specific features

Two particular characteristics of the project were singled out for special mention by the teachers. Again, the SENA Wizard was prominent as the most important tool that the teachers were pleased to have studied and used. Even teachers who claimed to have limited computing skills reported that they had learnt to use the SENA Wizard feature of the CD to assess their students, save the data on the computer and produce spreadsheets of the results. Mastering the SENA Wizard made it much easier for teachers to record information about students' number abilities and to keep track of the progress of each individual child. The SENA skills acquired by some teachers also highlighted the importance of continuous assessment within the CMIT program.

> *I am now aware of the usefulness of continuous assessment and tracking.*

The approach embodied in the SENA also alerted some teachers to the need to focus on the particular strategies used by each child. Many teachers reported that they were more confident in their ability to assess students and place them on the Learning Framework so that programs could be developed for student's needs. One teacher noted how she had learnt to "listen to the strategies they are using, not just the answers they are giving".

The other specific feature referred to by teachers was the DENS materials. As noted before, teachers saw a direct link between the use of the SENA to assess the position of their students on the *Learning Framework in Number* and the appropriate selection of DENS activities to meet the particular needs of individual students in their classes.

> *It made it easier to cater for every child, with specific activities for each stage of development.*

Teachers clearly valued these teaching activities and were pleased to have the opportunity to investigate the DENS activities more closely during their participation in the project.

3.3 Inhibiting factors

Although most teachers discussed the knowledge and skills they had acquired from their involvement in the project, some teachers noted that certain things made it more difficult for them to obtain a sufficient level of expertise.

The most important aspect of the project for many teachers was the chance to work together and share ideas as a team and it seemed that the extent to which this collaborative sharing took place was critical in helping teachers to develop as CMIT practitioners.

> *I think teachers who use CMIT need to have opportunities to share new activities that develop the understandings. This was quite limited in the project.*

Many teachers simply prefer to develop their skills in an environment where they have direct contact with others who are also part of the project. If the school plan did not afford

regular opportunities for teachers to meet together and share their experiences, then the teachers did not appear to gain significant advantages from the project.

Some teachers misinterpreted the aims of the project so that it "wasn't exactly what I thought it would be". These teachers were under the impression that the project would provide online tasks for students to do by themselves, such as the games and activities that can be found on the CMIT web site.

Beginners sometimes felt that they would have gained more from the program if they were more familiar with CMIT and had more time to absorb all of the information contained within the CD. Some teachers did gain some knowledge and skills but "only with a lot of help from other teachers with experience teaching CMIT". Others made limited progress, but only because of assistance from consultants who were often not directly involved in this project.

Teachers who were already familiar with CMIT and had been using it for a number of years occasionally remarked that they were not challenged by anything new in the project. They did not gain any new knowledge or skills as a result of their participation. One experienced teacher responded to the question about whether the intended knowledge and skills had been acquired as follows:

> I do not believe I did. I have not changed the way my CMIT program runs in my classroom.

Some of these veteran teachers felt that the structure of the professional development program was primarily directed at less experienced teachers and they wanted this made clearer from the beginning. One teacher commented that "the intended target group was unclear when applying" and the project may need to be more closely aimed at teachers who are reasonably familiar with CMIT but are not yet proficient with it.

Having described the particular knowledge and skills they had obtained through the project, the teachers then discussed the maintenance of CMIT in their school, with particular reference to the school plan. The role of the school plan is outlined in the next section.

4. The school plan

As part of their involvement in the online project, the teaching team in each school was required to develop a management plan for the maintenance and future directions of CMIT within the school. In devising their plan, the team might have considered points such as the teachers and Stages to be involved in the program, proposals for professional development, budget allocations, coordination and passing on of assessment results and a timeline for implementing these ideas. The third question on the evaluation form asked teachers to describe the ways in which their school plan had contributed to maintaining CMIT in the school.

4.1 A critical factor

It is clear from many of the survey responses that the school plan is a critical factor in the implementation of CMIT. In fact, there appears to be a direct relationship between the level of detail and sophistication of the school plan and the degree to which CMIT flourished in the school. In places where the school plan had been thoughtfully developed and carefully

administered, CMIT was reported as "a priority within the school" and "an accepted part of the curriculum". The high profile of CMIT within these schools made it easier for teachers to secure additional funding and resources for the project.

> *Our school plan helped a lot. The school is committed to CMIT and consequently we have support, funding and resources made available.*

Teachers clearly recognised the importance of the school plan in improving learning outcomes for students, via the implementation of CMIT.

> *CMIT is a part of our plan and the targets keep us on track and accountable, and our Basic Skills Test results are now showing the effectiveness of the CMIT program.*

4.2   Professional development

There were a number of essential elements that were common to all of the successful school plans. However, the issue which survey respondents rated as most important related to funding and how the money allocated for CMIT was spent. Teachers regarded their own professional development in the CMIT program as vitally important for its success. Many reported that their school plan "allocated time and resources for professional development" and "ensured that all teachers are trained in CMIT". One teacher made a recommendation for "each school plan to include professional development time to assist teachers with CMIT".

According to the teachers surveyed, the most significant feature of professional development was the opportunity to work with fellow teachers and the best way for them to use their release time allocation was in sharing their experiences and ideas with their peers. Teachers consistently called for "constant communication with other CMIT teachers" and suggested "meetings as a group to discuss CMIT".

Face-to-face contacts were an especially important part of inducting new teachers into CMIT, allaying any concerns they might have about it, and maintaining their initial enthusiasm for the program. Where there was a mix of beginners and more practised teachers in the same school, the novices felt supported through the training and mentoring of their more senior colleagues. The untrained teachers valued the practical advice they received from those who spoke with the authority of experience. One school reported that "We have used experienced teachers to assist new teachers in setting up CMIT in their classrooms".

Team meetings were a key part of maintaining momentum for CMIT because they helped keep teachers informed about each other's work. Teachers were encouraged by hearing what their peers were doing and used this knowledge to inform their own classroom practice. These meetings also "gave a focus for each term" and "assisted in planning" so that clear objectives could be identified and the means by which they might be achieved could be discussed. Team meetings were also used to provide ongoing support for less experienced teachers to "keep them on track". More importantly, gathering together gave teachers a sense of ownership of the CMIT program in their school because this "allowed staff to have their say".

4.3   Assessment and reporting

The school plan supported CMIT by providing a strong focus on improved learning outcomes for students through a variety of means. Principal among these was the assessment of individual students, both by using the SENA at the start of the program and through continuous assessment during classroom activities.

Teachers considered the initial assessment of students a vital part of implementing CMIT and their survey comments about how the school plan helped to sustain the program reflected this. Teachers observed that SENA testing was a time-consuming task and that one of the best ways the school plan helped to maintain the momentum of CMIT was by providing teachers with release time away from their normal duties so they could properly assess students on an individual basis. Even though the testing of each child entailed time and effort on the part of the teachers, they appreciated that the process should not be rushed because the results needed to be an accurate reflection of each student's position on the *Learning Framework in Number*. Teachers felt that having release time for testing included in the school plan made an accurate assessment of each student more likely.

Assessment was closely linked to notions of improved learning outcomes for students because carefully conducted assessments providing reliable data about each student's position along the *Learning Framework in Number* helped teachers choose appropriate classroom activities.

> *Our school plan helped maintain CMIT in our school by allowing us to focus on the areas that the children needed further development in and choosing appropriate activities when covering the various concepts.*

Teachers were also clearly of the view that the school plan should include provision for on-going assessment and many teachers commented that specifying continuous assessment opportunities was an important way in which the school plan supported CMIT. As one school reported, the school plan incorporated "constant evaluation and testing".

The information gathered by means of monitoring student performance during lessons was another important aspect of the assessment process. Teachers noted that the school plan could therefore support the CMIT program by incorporating procedures for teachers to follow in keeping detailed records on each child's progress and ensuring that this information was effectively communicated to the class teacher of the following year. As noted previously, the SENA Wizard on the CD greatly assisted teachers in the task of recording results and tracking students' progress. One survey noted that "the spreadsheets will provide more in-depth information to pass on each year".

Teachers reported that one of the most important outcomes of the entire assessment process was to ensure that "children are appropriately grouped" for classroom activities. This was seen as fundamental to the development of improved numeracy skills for students and hence to the very success of CMIT within the school. The school plan was a critical element in achieving this outcome because it provided the resources to do so.

4.4 Grouping

Many teachers considered that the school plan supported CMIT by facilitating the formation of student groups for CMIT activities. However, before groups could be properly formed, it was necessary for teachers to conduct the initial student assessments carefully because the results of the SENA testing would be used to place individual students in their activity groups. If the SENA testing was done accurately then appropriate groups could be formed and CMIT could operate more effectively within the school.

There were a variety of approaches used by schools for grouping students. For some activities, students of similar mathematical ability were placed in the same group because more specialised activities could be designed for each group so that "maths groups target the area of learning the child needs". This allowed students to work together and helped teachers to focus on a particular concept or strategy so they could build understanding within the group. At other times, teachers might decide to use mixed-ability groups to provide opportunities for peer tutoring among the students. Teachers could specifically design the level of challenge in the activity for each child in the mixed group by changing the size or complexity of the numbers they used. Another approach used by teachers was to allow students to form their own groups so that they could work with their friends and support each other in their learning.

Some schools created inter-class groups with students from across a number of classes and year levels. This was an organisational structure designed to assist in the creation of groups that were "smaller and more specific" and "grouped according to ability" rather than according to year cohort. It could allow for more homogeneous groups because the numeracy skills of children were not necessarily related to their age, but it usually required significantly re-arranging the school schedule so that all classes in a particular Stage had mathematics lessons simultaneously. One school noted that restructuring the timetable to group students across classes raised the profile of CMIT because "grouping the children specifically keeps CMIT prominent within the school and keeps it relevant". This may have been an unintentional outcome of the grouping process outlined in the school plan, but it served as a reminder to everyone in the school about the program and the high priority accorded to it. It was an important way of maintaining enthusiasm and support for CMIT in the school.

However, it is possible to form homogeneous groups within a single class and most schools chose to create their CMIT groups in this way. The use of these intra-class groups did not require any rearrangement of the school's daily routines and permitted the program to operate more freely within the school. It was much easier to reorganise groups for different kinds of activities so that like-ability, mixed-ability or friendship-based groups could be employed with minimal disruption. There was also less strain on the school's CMIT resources because they would not always be required at the same time by all classes.

Classroom teachers have much closer relationships with their own students than with children they might only see for CMIT sessions and so grouping practices that allowed teachers to work in their own classes helped to alleviate classroom management concerns. Teachers were also more knowledgeable about the specific strengths and weaknesses of individual students and could tailor activities to meet the needs of each one. Teachers were also much better placed to monitor and record the progress of every member of the class because they were working with them constantly in their class every time a mathematics session occurred.

4.5   Preparing resources

A small number of teachers commented that their school plan helped to maintain CMIT by providing funding for new teaching resources to support the program. The funding was either used directly to acquire additional resources or to provide release time for teachers to work together in creating and maintaining the resources used in the school as part of CMIT.

> *The allocation of time to teachers for reflecting and creating resources was invaluable.*

It is clear from the evaluation responses that most teachers were enthusiastic about teaching CMIT and value it highly. The school plan contributed to maintaining the program in a variety of important ways that supported teachers as they implemented the curriculum and helped them focus on the learning needs of students. Even so, the teacher evaluations identified a number of ways in which the online project could be improved and CMIT maintained within the school. These matters are discussed in the next section.

5. Suggested improvements

The final two questions on the evaluation form offered teachers the opportunity to suggest improvements. Question 4 dealt with their experience of the online project and Question 5 with maintaining CMIT in the school.

5.1   Improving the online project

Comments about possible improvements to *Count Me In Too* Online ranged across all areas of the project. Some teachers felt that the project could have provided them with a greater variety of teaching resources. They wanted items like black-line master sheets that were mapped to specific elements of the *Learning Framework in Number* so that they could easily choose a sheet and copy it for the student group with whom they were working. Teachers also felt that the DENS materials supplied on the CD could be broadened by including a greater variety of activities and by incorporating more detailed teaching notes. One teacher suggested that "lesson plans linked to DENS activities with outcomes" would be helpful.

Improvements in the CD were also identified. While most teachers described the CD as well organised and user-friendly, a small number felt it was "too complicated" and while it was "impressive with the shifting graphics, a simple layout would have been OK". Teachers were pleased with the fact that the CD contained so much information, but some found it difficult to locate exactly what they wanted at times and suggested that the CD should include a contents page that integrated direct links to each item listed. There were also teachers who felt that the CD contained a lot of material not directly related to CMIT and that more specific information was required. Some teachers were disappointed that the CD did not provide "deeper" activities to extend Stage 3 students and brighter students.

Many teachers felt they would have gained much more from the project if they had been given more time. This included release time to undertake SENA testing, time for team meetings to plan the CMIT program and attend to the online project learning tasks, time to visit the web site and time to prepare resources. These comments no doubt reflect the very busy working lives of teachers but it is clear that time considerations were a major hurdle for many participants. It is also worth noting that a number of teachers from the second

run of the program in Terms 3 and 4 felt that this was "a difficult time of the year" to be involved because of all the other commitments they had at school. These teachers felt they would have increased their participation and achieved more if they had started earlier in the year since "starting in Term 1 would be better". One teacher put it like this:

> The timeframe was difficult to maintain as we are all so very busy as teachers in the 2nd semester. I was unable to complete this due to time restraints.

The other often repeated suggestion for improvements to the project was a call for more personal interaction with others. Many teachers stated that there was a need for training sessions where they could meet with consultants and spend some time with them. These teachers felt that meeting a consultant would "provide more direction" for their involvement in the project because this contact would "address any questions or queries" and help to keep teachers "on track", but the key request was for more personal contact.

> I believe it would be beneficial to have a consultant visit the school and spend some face-to-face time with participants.

Regular contact with other teachers was also seen as a means by which participants could "work together" and "share ideas and resources" in a "more hands on approach" so that they could implement CMIT more successfully. Teachers wanted to meet with colleagues from neighbouring schools and discuss how they were using CMIT. The need for "more interaction between schools" was a common refrain in the evaluation forms and was often expressed as the desire for an alternative to the teleconference and the online discussion board. Here too, many teachers wished for "face-to-face" contact with "real people" as opposed to the virtual environment of the telephone or the internet.

Some teachers observed that they "had trouble with the conference call" mainly due to the poor sound quality of the telephone link which made it "difficult to communicate" and follow what was being said, but most comments related to the relevance of the teleconference.

> The initial phone conference did not require the whole team and did not raise any pressing issues – could this be more interactive?

Similarly, another survey commented that the teleconference "didn't require the presence of the whole team" which possibly also points to a dissatisfaction with the content discussed during the teleconference. For instance, one of the aims of the teleconference was to provide an outline of the project, but a number of teachers wrote that the project should "have a purpose that is clearly stated" and that they wanted "more specific information about the project" so they clearly did not feel that they had achieved a great deal from participating in the telephone communications at the beginning of the project.

Teachers also suggested improvements to the online discussion board. Some felt that accessing and using it was "time consuming" but most comments about the online discussion related to the paucity of ideas that it generated. One teacher noted that "although I had good intentions, I didn't get as many ideas from it as I would have liked". Another teacher remarked that there needed to be "more discussion ideas from the project coordinator" to keep the momentum of the online discussions going, although the analysis of the online discussion threads in Part B of the report shows that this assertion is not supported by the data. However, the most commonly discussed factor was the lack of input from the participating schools. For many teachers, this was "disappointing" and they often "found our own group discussions more useful than the online discussion".

Many of the comments about the ineffectiveness of the online discussion board and the need for more personal contact with others can be attributed to the varying needs of the teachers who participated in the project. As already described in Section 2.4, they were a diverse group in terms of their prior experiences with CMIT and this impacted heavily on the kind of support they were looking for in the online discussion. Beginning teachers often felt lost and wanted assistance to help them make sense of the messages posted on the web site.

> *We really needed someone to come and work with us as we felt we lacked the CMIT expertise to properly benefit from the online project.*

On the other hand, more experienced teachers did not often feel sufficiently challenged by what they read on the discussion board and regarded it as "often dealing with issues that are no longer relevant" to their particular needs.

> *The online material didn't give us any new ideas of implementing the program. We would prefer to talk to other teachers.*

These two comments highlight the need for more careful selection of participating schools so that the teachers involved are able to make a positive contribution to the discussion site and benefit from reading messages posted by others. The online discussion board is examined in greater detail in Part B of the report.

The program for the online learning tasks set out in the teacher booklet was also raised as an issue. The main concern expressed by teachers was what they regarded as the lack of any clear guidelines about when each task should be discussed and reported via the online forum. Without a definite date the teachers sometimes found it easier to postpone their team meetings and the project assumed a lower priority in the school. One school reported that the "project tended to leave us to our own devices and at times things were put off".

5.2   Maintaining CMIT

Teachers noted the importance of maintaining CMIT in their school because doing so would help them meet the requirements of the syllabus. At the same time, there was some recognition that CMIT is a major commitment for schools and they need support if they are to implement and maintain it successfully.

> *CMIT in general is a **very** time consuming program to use. More funding from DET would ensure that teachers felt supported with testing, implementing and retesting of this program.*

The evaluation surveys consistently identified three key factors that would assist teachers in running CMIT successfully: money, time and support. In essence, funding is the critical issue because it is required so that release time and professional development can occur. Some teachers nominated time for preparing and taking care of resources because "release time to make games would be a huge help as students tend to get bored of the same games" and "it is difficult to find the required time to update our games". However, most teachers wanted classroom release to conduct SENA testing because they recognised that it took considerable time and there were many advantages if they were able to do it properly.

> *Having release days available to carry out testing would be ideal. We learn so much about how the individual children in our classes go about solving the mathematical problems.*

There was also a call for more collaboration and support in CMIT. Teachers were very keen that there should be opportunities for them to meet together informally with colleagues from other schools and share their experiences of CMIT. One teacher asked for "collegial network meetings to maintain momentum and interest in CMIT", while another suggested "having gatherings of people and bringing and sharing resources". Teachers also wanted these meetings to be "on-going" because their needs were constantly changing as they developed their understanding of CMIT and used it with their students.

As well as informal gatherings, some teachers also wanted to see greater opportunities for professional development in CMIT and there was a strong call for more school visits by consultants. According to the teachers, professional development should include opportunities for sharing of ideas and resources as well as more structured activities. Among these were demonstration lessons so that participants could observe good classroom practice and reflect on the effectiveness of the teaching strategies employed. The dichotomy between the requirements of experienced and beginning teachers was evidenced in how teachers envisaged the focus of these professional development sessions. For some, it was to improve their understanding of CMIT and ensure they were "implementing it properly", while for others "refresher and extender courses" were required to renew their enthusiasm.

Finally, some teachers suggested that the process of handing on information about individual students at the beginning of each year could be improved. These teachers felt that providing more detail in the SENA sheets and developing some accompanying data sheets would greatly assist in maintaining CMIT in the school.

> *A tried and proven way of passing on CMIT results to teachers the next year. Not just the SENA tests, one or two sheets would also provide the new teacher with a very good indication of where each child is at.*

6. Summary

The teachers' responses on the evaluation forms indicate that the project *Count Me In Too* Online was largely successful in providing professional development to support the participants in their implementation of CMIT. This was particularly due to the team meetings that were an integral part of the project.

> *The project created a lot of professional dialogue, which kept us motivated and challenged.*

Teachers valued the *123 Count with me* CD-ROM and regarded it as a very useful resource that contained many practical tools they could use to increase their understanding of CMIT and improve the quality of their classroom instruction. They appreciated having all of the resources they needed in a single, easily accessible and user-friendly package. The teachers were particularly impressed with the SENA Wizard and used it frequently. They also found it practical to access the DENS activities via the CD, even though these were usually available in printed form as well. To a lesser extent, the teachers also saw the video vignettes as valuable in providing realistic demonstrations of CMIT in the classroom. A significant number of teachers commented that they would continue to use the CD in the future.

The teachers described how their CMIT knowledge and skills improved as a direct result of their participation in the online project. It helped to inspire and reinvigorate those who had been involved in CMIT for a number of years and it provided a focus for those who were relatively new. The participants gained much from the team approach adopted in the project and many noted the importance of working collaboratively as this encouraged everyone to contribute and learn from the experiences of others. Team meetings helped maintain the momentum of CMIT in the school because there was always someone who was ready to take up the challenge and encourage colleagues to do the same. In many schools, the project "caused great discussion and sharing of viewpoints and opinions."

The school plan was a crucial element of the project and an important factor in determining the degree to which CMIT was successfully implemented. Effective school plans allocated sufficient resources for professional development and release time for SENA testing, both of which were regarded by teachers as vital in maintaining CMIT. These plans also included provision for timetabling and staffing changes that allowed students to be grouped together for instruction across classes and years. Groups formed in this way were more homogeneous, leading to improved learning outcomes for students. Restructuring the school schedule also raised the profile of CMIT so that it became an accepted part of the curriculum.

Teachers also reported that some parts of the project needed improvement. A minority felt that the aims of the project needed to be made clearer and that it should have been more carefully targeted to teachers with basic experience of CMIT. Some teachers called for lesson plans and black-line master sheets to be included among the materials, and they wanted greater variety of DENS activities, particularly those that would be suitable for students working beyond Stage 2 of the syllabus. Teachers also wanted more time to prepare and maintain the resources they already had. Many felt that they did not have sufficient release time to assess their students and called for increased funding for this aspect of CMIT. However, the most common suggestion made by the teachers was for more face-to-face contact with consultants and colleagues so that they could share their ideas and resources, and gain more advice and support.

Some teachers did not find the teleconference particularly useful and felt that the issues discussed did not justify the attendance of all team members. Many teachers described their disappointment at the limited amount of information they found on the discussion board. They noted that the lack of relevant ideas generated by the online discussion often acted as a disincentive to contribute and led to limited participation from some schools. The contents of the online discussion board are analysed in the next part of the report.

Part B

The Online Discussion Board

1. Introduction

The CMIT Online project was designed to offer participating teachers on-going professional development as they worked in school teams to implement CMIT with their students. Teachers were initially supplied with a *123 Count with me* CD-ROM containing various tools and resources to improve their understanding of the *Learning Framework in Number* and support CMIT in the classroom. Another important component of the project was the use of *WebBoard* software to establish an online learning community via an asynchronous web-based discussion board which also offered opportunities for file sharing among the teachers and the online mentor. The aim of the online discussion board was to provide a means by which teachers from schools across the state could "communicate informally as well as ask questions, receive support and guidance and very importantly, learn with and from each other" (Curriculum K–12 Directorate, 2005, p. 9).

The support document provided to all teachers who participated in the online project (Curriculum K–12 Directorate, 2005) made it clear that they were expected to access and participate in the online discussion during the course of the project. To this end, four of the ten learning tasks were specifically designed to include an online component:

- Task 3 required team coordinators to introduce their school team to the other participants via the discussion board. The coordinators were asked to provide information about their school team, discuss their school's involvement with CMIT, and raise any questions or concerns they had regarding the online project.

- Task 6 was for all teachers and involved a discussion of the SENA Wizard and the value of recording student results and saving them to a spreadsheet as a means of maintaining CMIT in their school. Teachers were then to post a comment on the discussion board summarising their thoughts.

- Task 7 focused on a team meeting to discuss the role of continuous assessment in the school's mathematics program. Teachers needed to reflect on their deliberations and share their ideas about the issues raised with other schools via the discussion site.

- Task 9 asked teachers to work either as a school team or individually to think about a favourite classroom activity suitable for students at different levels of the learning framework. Teachers were asked to share the activity with their colleagues on the bulletin board.

Teachers were encouraged to take turns in posting responses to these tasks on the discussion board so that as many participants as possible would access the site throughout the project. As well as completing these learning tasks, teachers could add other comments and questions they wished to share with their colleagues at any time. The teachers' support document made it clear that such participation was an essential element of CMIT Online.

> *The site is dependent on the participation of teachers and it is expected that teachers will access and participate in the online discussion during the course of the project.* (Curriculum K–12 Directorate, 2005, p. 12)

The purpose of this part of the review is to examine the nature and extent of the teachers' participation in the discussion site and consider whether the aim of developing an online community of learners was achieved. Recommendations for improving the online discussion board are also included. The following section sets out a theoretical framework for the analysis used in the report.

2. Evaluating online discussion

Online discussion groups are now used widely for delivery of education and training as well as for professional development and there is increasing interest in the means by which the effectiveness of online learning can be evaluated. McKenzie and Murphy (2000) note that various methods such as surveys, interviews and focus groups have all been used to determine participants' views on their online experience in a particular course or project. Harasim, Hiltz, Teles and Turoff (1995) suggest that the unique features of online environments, particularly the fact that messages can be automatically archived on the web site and thus made available for analysis, offer the possibility of other approaches to evaluation. According to Harasim, Hiltz, Teles and Turoff (1995), statistics about the number of users, frequency of access, the number of messages posted by participants, the number of threads, the number of messages per thread, and so on can be used to provide valuable information about the level of engagement in the online discussion forum.

However, Mason (1992) cautions that although the kind of raw statistical data described here has its value, there is a danger in automatically equating such measures of the level of activity among the participants with the degree of learning that has taken place. Mason's (1992) approach is to analyse the content of the messages in terms of the educational values they display. This method involves thoroughly reading the messages posted on the discussion site in an attempt to discover the kinds of skills and abilities the participants are displaying or developing. The focus of such an analysis is to consider aspects such as collaboration and interaction among the group, evidence of critical thinking, and the degree to which participants are able to reflect on their own experience. To this end, Mason (1992) poses a series of questions that a researcher might bear in mind when conducting a review of online activity. These questions will form the basis of the analysis in Section 4.

Henri (1992) also focuses on the level of knowledge and skills evident in the participants' messages. She suggests that a researcher can develop categories for analysis of individual messages and use these as the basis for coding the raw data. She proposed that transcripts are analysed according to five dimensions, these being participative, interactive, social, cognitive and metacognitive. The model developed by Henri (1992) has been influential in content analysis and has been adopted or expanded on by other researchers interested in identifying the level of engagement and critical thinking in online discussion groups (e.g., Newman, Johnson, Webb, & Cochrane, 1997, Goos & Bennison, 2005, Ng & Murphy, 2005).

Henri (1992) also argues that a single message may contain different kinds of information and so a simple count of the total number of messages that may be classified in each dimension does not necessarily provide a true measure of the different kinds of participation evidenced. She argues that one must first break the transcript down into small 'message units' and then classify these according to their content. Henri (1992) does not specify precisely what a message unit is, but for the purposes of this report it will be regarded as a piece of text that constitutes a single idea. In practice, most discussion board messages

are organised in paragraphs, as this is the way people tend to construct their written communication, and most paragraphs correspond to one message unit. The use of the message unit as the basis for analysis of each posting to the discussion board allows for a more detailed analysis of differences between teachers that communicated little or much information in a single message.

The methodology used in the analysis and the results obtained are outlined in the following sections of the report. A framework similar to that proposed by Mason (1992) and Henri (1992) is used to evaluate the effectiveness of the online discussion board because it allows for analysis of a broad range of characteristics of the posted messages including both quantitative and qualitative data. Participation levels can be measured in terms of usage statistics, the nature of the interactions among the teachers and the online mentor are able to be described using analysis categories, and the message content units can be used to determine the kinds of learning that had taken place.

Salmon (2000) developed a five stage research based model for what she refers to as 'e-moderation'. Her model of online teaching and learning includes a range of suggestions for online instructors and mentors in a variety of settings. The model identifies the key role played by online moderators and describes characteristics of effective online mentoring at different phases in the development of an online learning community. Some of the ideas developed by Salmon are applied in describing the role of the online mentor in Section 4.5.

3. Data sources and analysis methods

A frequency count of all messages posted on the online discussion board was conducted to determine the distribution of messages posted by the online mentor or by a school. A count was also made of the total number of messages placed by each school. The number of threads was counted as was the number of messages in each thread and the number of individual schools involved in each thread. The number of times that each message had been read by one of the participants was also noted as a further measure of activity on the discussion board.

All message texts in the discussion board were organised according to the topic threads and printed in hard copy for analysis. Henri's (1992) five dimensions were trialed in a small sample of transcripts but were found to be unsuitable for the present investigation. This was due to the fact that this report includes statistical evidence of usage not employed by Henri (1992) and because the nature of online professional development is somewhat different to that of computer conferencing which Henri (1992) examined in her research paper. However, Henri's (1992) work did form the basis of the coding dimensions that were developed for this evaluation.

Five categories were used to describe the content of the message units. These are *advice*, *information*, *resources*, *encouragement* and *social*. Advice message units occurred when participants posed questions on the discussion board and sought advice about CMIT or the online project. Information message units were either direct responses to these questions or comments about the CMIT program or the CMIT Online project. Teachers often shared resources or teaching ideas that could be used in the implementation of CMIT and these were coded as resources message units. Comments that encouraged or valued contributions posted to the discussion board by others were regarded as encouragement units, while

social message units were those where school teams introduced themselves and provided information about themselves and their school.

The message unit codes were used to analyse the kinds of interaction that took place via the online discussion board. The proportion of message units coded as seeking advice was 5% with about half of these related to questions about the implementation of CMIT. The following comment from one teacher is typical of those which were coded as advice.

> I'm not exactly sure how to run my groups … Is it OK to do rotating groups with a CMIT activity with me whilst the other groups complete other maths work or activities?

Another 5% of message units were concerned with the sharing of resources or classroom activities and about three-quarters of these were posted by schools. The following comment from a teacher is an example of those which were coded as resources units.

> Other games I have used in the past are 3 or 4 in a row where there is a base board with numbers (like a bingo board) in which the children roll the dice …

Social message units accounted for about 10% of the total. These were either concerned with school teams introducing themselves (two-thirds of these units) or responses from others to these introductions (approximately one-third of these units). Typically, the response would come from the online mentor rather than another school as the following example of a social message unit and response shows.

> Hi. [School name] is a small school of four classes. We have two teachers who are trained in CMIT Stage 1, one of whom is also trained in Stage 2. We have two teachers (ES1 & Stage 2) who are experiencing formal CMIT training for the first time.

> Hi to the [school name] team … good to see you on board.

Message units classified as encouragement made up 20% of all coded units. Most of the units coded as encouragement (three-fifths of these units) originated from the online mentor who regularly tried to encourage debate among the participants. This comment from the online mentor is an example of an encouragement message unit.

> I hope you will work as a team to discuss different issues and share your experiences with other schools in the project.

The majority of message units (60%) were related to information about content. Of these, 42% were judged to be relevant to the online project. They might be directly concerned with aspects of the CD or the learning tasks that schools were required to complete, such as this comment from one of the schools.

> The CD is helpful and informative. We think it's great how you can enter the stage that the group of students are at and click and see loads of examples of activities. There are lots of great teaching ideas and activities.

Another 49% of the information units related to CMIT implementation in the classroom. These message units contained comments about various practical aspects of running the CMIT program in a classroom setting, such as this comment from one school:

> New students and all Kindergarten students are assessed twice a year. We find this much more manageable than assessing every student twice a year. We

constantly assess our students throughout the year during CMIT groups making observations with our focus group.

The remaining 9% of the information units concerned the technical aspects of the project, such as computer difficulties, as the following comment from one school illustrates.

If you are reading this it means I am one step closer to being less technologically challenged.

A total of 597 message units were coded. The number of message units for each coding category is summarised in Table 1.

4. The emergence of an online community of learners

One of the outcomes for participants engaged in the CMIT Online project is that they contribute to "an online community of learners" (Curriculum K–12 Directorate, 2005, p. 8). The online community is envisaged as an environment where teachers can share their experiences and support each other in learning how to implement CMIT in the classroom. This section of the report considers the degree to which such an online learning community was established and sustained during the course of the CMIT Online project. Mason (1992) poses a series of questions that might be used in order to determine the quality of the online activity taking place in a computer conferencing application such as a discussion board. Mason's (1992) questions are used and augmented as the basis for analysing the effectiveness of the online discussion board in this section of the report.

Category	Message unit code	Message unit count
Advice (5%)	Pose a question about CMIT Online (AO)	8
	Pose a question about CMIT (AC)	16
	Pose a question about technology (AT)	4
Information (60%)	Respond to a question about CMIT Online (RO)	30
	Respond to a question about CMIT (RC)	58
	Respond to a question about technology (RT)	4
	Make a comment about CMIT Online (CO)	121
	Make a comment about CMIT (CC)	119
	Make a comment about technology (CT)	28
Resources (5%)	School shares a resource or teaching idea (SR)	22
	DET mentor shares a resource or teaching idea (DR)	6
Encouragement (20%)	School encourages participation from others (SP)	43
	DET mentor encourages participation from others (DP)	74
Social (10%)	School team introduces itself (SI)	39
	Respond to a school team introduction (RI)	22

Table 1. The coding categories and message unit counts

4.1   Did the teachers use the discussion board?

There are two ways that the members of a school team might have used the online discussion board, namely to read messages posted by others or to post messages themselves. These two aspects of involvement in the online forum are examined here.

4.1.1 Reading messages

The number of times that each message was read was counted for the 172 messages for which this data was available. The count shows that the total number of readings for these messages was 7 619, while the number of times that each individual message was read ranged from 4 to 149 with a mean of 44 and a standard deviation of 31. There is a wide variation in the number of times messages were read and clearly some messages were read significantly more often than others.

The *WebBoard* software does not provide information about who may have read a particular message so it is not possible to analyse how individual schools were involved in reading the information on the discussion forum. However, the results for the number of times each message was read by any of the registered users do indicate that there was a relatively high level of activity in this regard, particularly for messages that possessed certain characteristics.

The four threads that were most read were titled *Tracking sheets* (3 messages posted, read an average of 125 times each), *Using continuous assessment* (7 messages posted, read an average of 91 times each), *School planning for CMIT* (13 messages posted, read an average of 83 times each) and *SENA testing* (4 messages posted, read an average of 71 times each).

The five threads that were least read were titled *Welcome to Asquith* (3 messages posted, read an average of 18 times each), *Favourite activity* (2 messages posted, read an average of 13 times each), *Blocks* (2 messages posted, read an average of 13 times each), *Shortland Public School* (2 messages posted, read an average of 10 times each) and *Racing cars* (2 messages posted, read an average of 9 times each).

It appears that thread topics and message headings referring to practical ideas, such as how to use the materials supplied as part of the CMIT Online project or how to organise students for learning in CMIT activities, were generally read more often. On the other hand, topic headings which did not indicate that the message contained a great deal of practical information, such as the *Welcome to schools* introductions, were generally read fewer times. Teachers were clearly more interested in reading about realistic and useful ideas for implementing CMIT in their schools. This suggests that one way of improving participation in the discussion board could be to encourage more messages in topic areas that are relevant to teachers' daily experiences of CMIT in the classroom.

Three of the least read threads were contained within a group titled *Activities to cater for different student abilities* and all were posted to the web board in November. This highlights another feature of the way that messages were read, namely that messages posted early in the year were read more often than those placed on the discussion board late in the year. This trend was evident in 90% of threads where each subsequent message was read fewer times than the first message of the thread. This may indicate a level of fatigue in the teachers towards the end of the project when the pressures of completing

the school year are also high, or it might be that they had absorbed as much information as they needed and did not deem it necessary to read any further. In either case, it is clear that important message topics should be dealt with in the early part of the project when teachers have more time and energy to devote to the discussion board.

For some teachers and schools, it appears that reading and reflecting on the ideas of others was sufficient for them to feel that they had gained something valuable from the project. One teacher from a school which placed just three messages on the discussion board included this comment in her final message:

> *I have really enjoyed reading other schools' contributions and have found some great ideas to help us with our continued implementation of CMIT. Thanks.☺*

The phenomenon of online forum users who participate solely by reading messages posted by others is common in the literature. Salmon (2000) refers to 'browsers' while Barab, Makinster, Moore and Cunningham (2001) distinguish between 'observers' and 'contributing members'. Such people are often described as those who 'learn by viewing other members' comments' (Barab, et al., 2001, p. 86) and, although such participation is somewhat limited, the value of browsing as a means of expanding a user's knowledge of a particular domain should not be underestimated.

Many other schools did not post any messages to the discussion board but there is evidence in their evaluation forms that at least some of these schools visited the web site regularly and benefited from the experience. Teachers from one school made a comment in their evaluation form that they "used the online discussion for accessing many ideas from other teachers". Another evaluation form contained this comment from the school principal:

> *Some of my staff are reluctant to participate in the discussion online, but they enjoy reading what other schools have done for ideas.*

Observations like these reinforce the idea that some participants were content to limit their involvement in the discussion board to browsing the messages of others and that they found value in doing so. The large proportion of information message units which related information about teachers' knowledge and experience of teaching with the CMIT program would have provided a rich source of ideas for these teachers to consider. The relatively high number of readings for messages dealing with practical issues indicates that the discussion board was successful in providing an online forum for the sharing of ideas and experiences about CMIT among some of the participants.

The school principal quoted above did not elaborate on why some teachers at the school did not feel comfortable in adding their own messages to the site. However, reluctance to participate in online discussions by posting messages is not new and it is not uncommon for people to spend a long time browsing before they feel ready to make a more active contribution (Salmon, 2000). The reasons why so many schools did not post messages to the discussion site are discussed in the following section.

4.1.2 Posting messages

A total of 67 schools participated in the CMIT Online project and of these, 40 schools (60%) posted messages to the online discussion board. While some messages were 'signed' by teachers, many were not and the *WebBoard* software only indicates the name of the

school from which the message originated rather than the individual(s) who posted it, so it is not possible to provide a message count for individual teachers.

The number of messages posted by schools is shown in Figure 3. It can be seen that most schools either did not post any messages to the discussion board or posted only a single message. The data in Figure 3 also indicates that 88% of those schools that did contribute to the online discussion board placed between 1 and 4 messages and that the median number of messages posted by each participating school was 2 messages. The other interesting feature of this data is the fact that one school posted significantly more messages than any other.

The online mentor posted 52% of all messages placed on the discussion board and the teachers contributed the remaining 48% of messages. This figure compares somewhat poorly with results from other studies which analysed levels of involvement in online discussion groups. For example, McKenzie and Murphy (2000) reported that 26% of the messages in their study originated from the organisers and 74% from participants, while Goos and Bennison (2005) found a 28% and 72% split of messages posted by organisers and participants. These statistics suggest a relatively low level of participation among the participating teachers in the CMIT Online project.

A total of 258 posted messages were organised into 101 topic threads and a total of 597 message units were defined according to the five categories already described. On average, each message contained 2.3 units, each unit being usually about 40 or 50 words. This compares favourably with other studies such as McKenzie and Murphy (2000) who found that messages contained an average of 1.8 units. It suggests that there was a good deal of information in each message posted to the online discussion board.
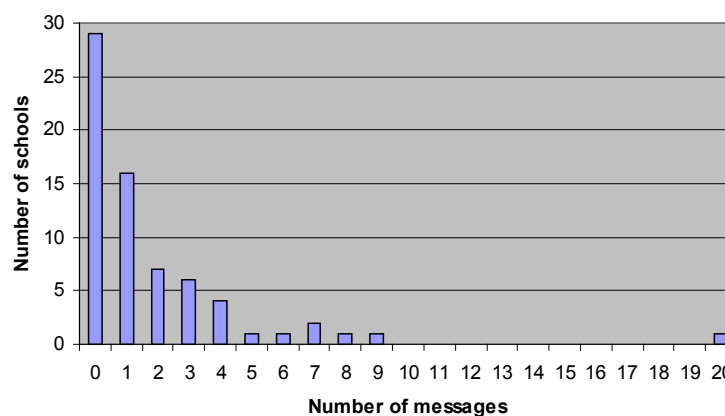

Figure 3. The number of messages posted by schools

The number of schools posting messages to the discussion site was quite low and the challenge is to find ways of shifting teachers from mainly browsing the comments of others to a more active involvement in the discussion board for themselves. Some teachers clearly had every intention of participating fully in the online discussion but, despite their initial keenness, this did not occur. The teachers from one school wrote enthusiastically in their first message that "we will keep you all updated with how we are going as the semester continues" but this school posted only one more message to the discussion board during the entire course of the project.

For many teachers, the most significant barrier to posting messages was a lack of time. One teacher wrote the following comment in her only message, posted on October 25 in the final term of the project.

> *Sorry it is only now that I am doing this [introducing myself] but I have just been so run off my feet I forgot about it. I have however kept up to date with everything else.*

It appears that the online forum was a relatively low priority for some teachers and they were inclined to disengage from the discussion board whenever pressures from work or other places impinged on them. This may be because online participation was something left largely to the discretion of individual teachers and not as tightly structured or group-oriented as other aspects of the project such as the team meetings. The balance between spontaneity and formality is not always easy to maintain but the project may need a tighter framework with regular times for teachers to post specific messages to the web site.

As noted in Part A of the report, finding the time to access the discussion board was a particular challenge for those teachers who took part in the project in Terms 3 and 4.

> *We are finding time a real factor in getting together and discussing/working through the stuff. Term 3 has been extremely busy with a lot of new items/ disruptions we didn't count on.*

The online mentor was also aware that there were times during the course of the project when teachers were simply too busy to have time for the online discussion and posted this message on November 8.

> *The discussion site has been a bit quiet of late. I guess that means that you are all flat out at school, doing reports and preparing for end of year activities.*

Clearly there are certain times during the school year when the demands on teachers to complete work commitments are significant and this may need to be taken into account when designing future timetables for posting contributions to the discussion board. In particular, it is probably unreasonable to expect that teachers will contribute meaningfully to the discussion board during the second half of Term 4 when assessment and reporting activity is at its height.

Some teachers felt excluded from the online discussion because of their limited classroom experience with CMIT as demonstrated by this comment from one school's evaluation form.

> *We found the on-line course wasn't accessible. All staff felt the same. We didn't have the knowledge to ask the questions.*

As noted in Part A of the report, the online project appears to have been largely unsuccessful in schools where many or all of the teachers were relative novices and had little familiarity with CMIT, and schools need at least some veteran CMIT teachers if they are to benefit from the project. A balance between beginners and advanced teachers is important as a means of generating discussion and sharing of ideas but schools need a critical mass of experienced CMIT teachers if they are to participate fully in the project and gain the desired outcomes from it. In particular, the role of senior teachers in leading group discussions and encouraging all members of the school team to use the discussion board cannot be underestimated. Staffing changes occur regularly and tighter controls may be needed to

ensure that all schools admitted to the project have a sufficient number of experienced CMIT teachers to guide and coordinate the school's involvement.

Many teachers involved in the project appeared to have limited computing experience and found it difficult to master some of the spreadsheet functions associated with the SENA Wizard while at the same time learning to access and navigate the online site. For some teachers, this may have been a case of technology overload. A number of the comments posted on the discussion board indicated that teachers occasionally had trouble logging on to the site due to problems with their computer hardware and this limited their involvement in the online communications. One message included the comment that "our group has not spent as much time online as we would have liked to due to computer problems". And, as often happens, technology-related problems caused quite a bit of frustration for some.

> *Well, I have finally been able to navigate my way successfully to getting into this forum … Previously last term I had been unsuccessful due to ??? technology problems, etc. Quite frustrating really!*

One of the messages posted by the online coordinator was also indicative of problems some schools were having when trying to access the discussion board.

> *We had a problem on Friday with one of the schools not being able to get onto the discussion site even though they were doing everything correctly.*

Such a situation could well be very annoying for teachers and may well have acted as a disincentive to participate in the online forum. One message noted "we have had a few hiccups at accessing the site directly" while another teacher used an ingenious method to ensure that his message appeared.

> *Well I couldn't work out how to write a message so I had to reply to one in order to introduce myself.*

It seems reasonable to assume that for every teacher who experienced technological problems and persevered, there were others who did not have the patience or the determination to continue. These teachers may have decided that it was just as well to adopt a read-only approach to their involvement in the online forum rather than keep trying to post their own messages or seek assistance from others.

While it is impossible to safeguard against technological problems at the participating schools, there might be value in an initial training session for teachers that focuses on using and accessing the online discussion board. This would not only build technical expertise but increase teachers' confidence as well, and teachers who feel more comfortable with the technology may be more inclined to use it. It is perhaps not surprising that the school which posted significantly more messages on the discussion board than any other had an intranet site and perhaps these teachers were simply more accustomed to using technology as a means of sharing ideas.

For teachers who were not as familiar with communicating information about their professional knowledge and practice via the medium of a computer, the discussion board seemed rather remote and impersonal and this sometimes inhibited their participation. One of the consistent themes in teachers' evaluation comments was their preference for direct engagement with colleagues and the need for face-to-face contact and the same kinds of concerns were raised in some of the web site messages.

We have found the CMIT online project to be an interesting idea but we feel a little overwhelmed by the facelessness of the process. Although the ideas behind the project are wonderful and we are using many aspects of the SENA wizard for assessment and planning, we still feel we prefer the guidance of face to face professional development. [The online mentor] has been wonderful and very supportive (on the telephone!). We just wish she was here with us.☺

Other messages referred to the need to put a "human face" to the discussions so that issues and concerns could be dealt with personally.

We would have appreciated some initial face to face opportunities to network with others who could introduce us to the program in a more personal way.

The emphasis on *initial* contact is important and there is some evidence that people may be more inclined to participate in an online forum if they have previously had personal contact with the other users (Goos & Bennison, 2005). The teleconference was incorporated into the program as a means of achieving some form of personal contact among the participants at the beginning of the project. However, while some teachers commented favourably on their experience of the teleconference, many others reported difficulties and would have preferred to meet with each other. So, despite the instruction in the support document to "use the discussion in the same way as you would use face-to-face meetings" (Curriculum K–12 Directorate, 2005, p. 9), it is apparent that many teachers did not regard the discussion board in the same way as they would a more personal contact with colleagues. Budget limitations notwithstanding, there could be considerable value in coordinating face-to-face meetings for participants prior to the opening of the discussion board.

4.2   Did the online participants initiate new ideas for discussion?

This question focuses more closely on schools which actively participated in the discussion board by placing at least one message on it. The ways that schools introduced new ideas to the online forum and initiated discussion threads is analysed here.

Of the 101 subject threads on the discussion site, 73 threads were initiated by schools and the remaining 28 were commenced by the online mentor. This is perhaps not surprising given that four of the learning tasks required school teams to record a summary of their meetings on the discussion site. However, a significant number of schools only posted the introductory message mandated as part of Task 3 and did not complete the discussion board requirements of the remaining tasks. It has already been noted that many of the 'Welcome to schools' threads terminated quickly due to a lack of replies from participants other than the online mentor. So, even though the welcomes were commenced by schools, these threads could not be said to initiate any substantial new ideas for discussion.

It was not uncommon for schools to make comments such as "Look forward to chatting with everyone and sharing some great ideas" in their introductory messages that set an encouraging tone for the discussion site, but such comments were too general to initiate any immediate replies from other schools. At other times, teachers included a question or call for assistance in one of their messages that had the potential to stimulate discussion among the group. These were also quite general in nature such as the comment from one teacher, "any help or assistance would be greatly appreciated" but this did not elicit any

response from colleagues, again perhaps because it was too vague a request.

There were other occasions when teachers made very specific appeals for information and these messages did initiate some (limited) discussion among the group. For example,

> *Hi all! I'm writing in regards to testing … I would really love to hear if you have a method that works for year to year continuation.*

Calls by participants for the sharing of teaching resources or practical help about aspects of the online project that related directly to the implementation of CMIT (e.g. SENA testing, recording of results, tracking students from year to year, games and activities suitable for children at different points in the learning framework) were largely successful in generating meaningful discussion among the group. The following message is typical of one that engendered a fruitful sharing of ideas.

> *We would like some ideas for minimum resource games for things such as decks of cards and dice. We seem to be using the same ones for a while and the kids are getting a little bored. Also, I have some good ideas for bingo variations …*

The fact that the online participants included a blend of teachers at various stages in their implementation of CMIT was an important element in stimulating discussions because relatively new teachers often had questions to ask and their more senior colleagues were sometimes prepared to provide some answers.

> *Would really appreciate any useful tips or other feedback from other more experienced CMIT teachers/schools …*

The combination of teachers at various stages in their CMIT careers has been noted previously in the report. So long as the quite different needs of beginners and veterans are accounted for in the project, there are many benefits to be gained from such a mix. One school made a clever attempt to break down some of the formality of the discussions and draw others onto the web site by proposing a 'footy team' name for themselves (the masterminds) and daring other schools do the same. However, as was often the case on the discussion board, the only other person to do so was the online mentor.

In summary, some schools did occasionally initiate new ideas for discussion. These were based mainly around asking for guidance and assistance in practical ways to implement CMIT. General requests for help were less likely to initiate responses from others than those which called for a more particular response. Participation in the online discussion might therefore be increased if more learning tasks were created to address practical aspects of CMIT.

4.3   Did the online participants build on previous messages?

The threads were analysed in terms of the number of replies each message generated to give a measure of participation. Most topic threads were either responded to only once (55%) or never referenced further (23%) and for those messages which were responded to once, these replies were almost always contributed by the online mentor (52 out of 55 times). In other words, just over half of all threads could be described as a message from a school followed by a single reply from the online mentor. The number of replies in each thread is shown in Figure 4.
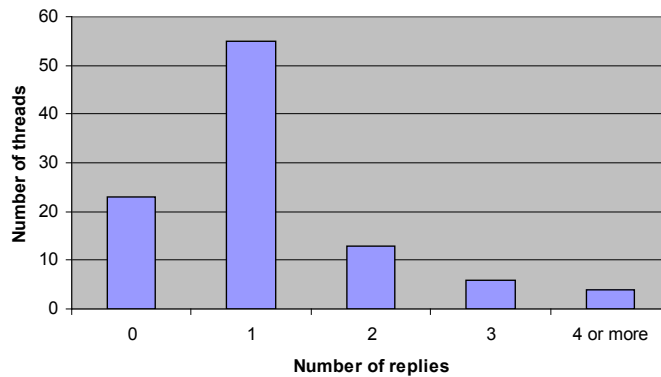
Figure 4. The number of replies posted in each thread

The number of schools taking part in each thread was also analysed to give a further indication of the level of participation. A small number of threads (11%) did not involve any schools at all as these were threads initiated by the online mentor to which no one ever replied. However, the majority of threads (76%) involved participation by only one school, either in conversation with the online mentor or in a thread which was not replied to by anyone else. The number of schools posting replies in each thread is shown in Figure 5.

As a rule, messages that introduced the school team and were essentially concerned with how the school was implementing CMIT were not built on by others, probably because they did not expressly invite a response. The 'Welcome to Schools' messages play an important part in easing teachers into the online discussion but there is clearly a need to find ways of developing other topic areas that invite greater sharing of ideas and resources.

Another characteristic of the messages posted on the discussion board was that they were often addressed directly to the online mentor who, in turn, addressed her reply to the individual teachers. Whether intended or not, this gave the threads the appearance of a more private and closed conversation which may have inhibited other teachers from becoming involved in the discussion. It might be useful to find ways of encouraging participants to make their message greetings more inclusive so that they encourage responses from others.
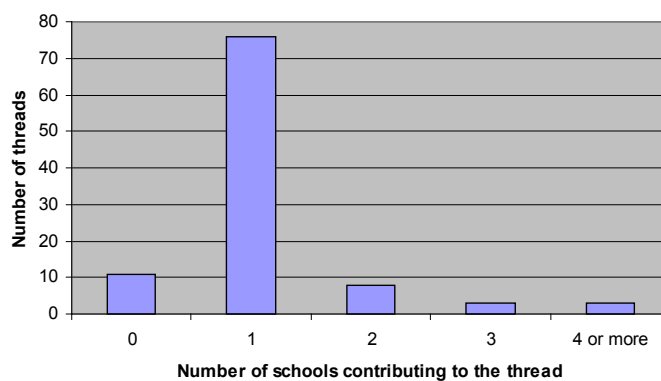

Figure 5. The number of schools contributing to each thread

The longest threads were titled School Planning for CMIT (13 messages involving 6 schools and the online mentor), Welcome to Schools (7 messages involving 4 schools and the online mentor) and Using Continuous Assessment (7 messages involving 4 schools and the online mentor). The 'welcome' thread referred to here was posted right at the beginning of the project and was the only thread of that kind to generate significant response. The common element in the other two threads is the fact that they incorporated a lot of sharing of resources as a direct result of requests from teachers who asked for ideas from others. For example,

> We like [school name]'s idea of using the assessment tasks in the DENS book as they are quick and easy activities. We will give this a go next term. Another good resource we use in our groups …

What often occurred in these threads is that teachers would build on preceding ideas and then make a request for other schools to contribute further:

> Hi everyone. As an adaptation of [school name's] game matching numbers 1 to 10, I have made a memory game … any others with good ideas???

This sort of exchange was by far the most productive in developing interactive threads among the teachers. Participation in the online discussion board is likely to be increased if ways can be found to include more communication of this type.

In summary, the message counts show that the teachers did not build on each other's contributions since most initial messages were either responded to only by the online mentor or did not produce any replies at all. In other words, the number of genuinely interactive messages was very limited.

4.4 Did the online participants draw on their own experience?

One of the important characteristics of any successful online forum is the degree to which participants are able to relate what they are reading and discussing to their own experience (Salmon, 2000) and this aspect of the discussion board is examined here. Generally speaking, participants used the discussion board to draw on their own experience in two broad areas: in discussing practical ways they had implemented CMIT in their teaching practice and in describing how they had participated in the online project. Many of the comments posted by teachers concentrated on reports of their experience since, as noted previously in Section 3, the majority of message units (60%) were coded as providing information either about CMIT or the online project itself.

Many of the introductory messages posted by teachers in the 'Welcome to Schools' threads contained general descriptions of the history of CMIT in the school and what they thought about the program. These messages were a basic means by which teachers could draw on their experiences and share them with the other participants. For example,

> We have 7 classes K–2 and 8 classes 3–6. K–4 use CMIT strategies as part of their maths program. We have been involved with CMIT for about 5 years now and we were very happy to see how well the new Maths syllabus fits in with CMIT.

Messages like this one allowed teachers to compare situations in different schools and gain a sense of each other professionally. These messages could also act as a point of reference

for other participants as they interpreted what these teachers subsequently posted to the online forum. Teachers often collect a lot of background information about each other when they meet together informally and use that knowledge as a kind of filter through which to interpret what is being said by others. Given the lack of face-to-face meetings that took place as part of the online project, messages like the one above were particularly valuable because they could be said to provide a context for later comments made by teachers from the school.

At the next level of interaction, teachers started to draw on their experiences in running CMIT with their students and made general comments about what they had done. These comments reflected concerns about things like time management and the development of resources.

> *We are involved and pleased with the CMIT approach to the teaching of Maths. Our main problem has been finding time to individually assess students using the SENA – time is the issue, our school is reluctant to release teachers for the testing. We are very interested in finding other ways to assess our students but still place them on the Learning Framework in Number.*

Comments like this could be used by teachers in other schools as a yardstick against which they could assess their own issues and struggles in implementing CMIT, an important consideration given the geographic isolation of some schools involved in the project. Teachers who were relatively new to CMIT or felt unsure about what they were doing would no doubt have appreciated messages of this kind and could have used them to generate discussions in their own school.

> *I'm glad I read this section! … I feel we are heading in the right direction … My staff were very pleased to hear we are right on target.*

More detailed and specific comments were made in some messages where teachers shared their knowledge about practical ways they had used CMIT with their students. These comments often related to issues such as assessing students in order to place them on the number learning hierarchy or how to organise and run groups for classroom instruction. These comments often generated relatively lengthy threads because teachers tended to use them to build on the ideas of others and share their own experiences.

> *I agree with [name]. The full SENA only needs to be given once. At our school after that we use the assessment tasks that you find at the end of each section in the DENS book to determine if a child has moved into the next stage/phase. They are quick and can be given while the rest of the class group is playing their maths games.*

As well as commenting on specific aspects of CMIT, many discussion board messages reported the progress of the school teams as they completed the learning tasks associated with the online project. Here too, comments ranged from those that were fairly general in nature to some that set out in quite specific detail what had been discussed and what the school team was planning to do next. In either case, it is clear from the discussion board contents that team meetings in many schools were a valuable way of sharing ideas among participants.

> *We spent our time this week discussing how continuous assessment is used in our classrooms … This discussion led us to look at the assessment tasks in the DENS book. For our next meeting the group has decided to present three ideas each on*

activities which help to track our students, suitable for continuous assessment and not too complicated or time consuming.

Some of the learning tasks required teachers to post their discussion summaries to the web site and this often led to a very fruitful sharing of ideas and resources among the participants.

We looked at continuous assessment in Maths and then went one step further, creating our very own tracking sheet from K–6. This is also thanks to [school name] who attached their tracking sheet to this site. I downloaded it, showed it to K–2 and our many new wonderful staff brought in their copies of different tracking sheets. We adapted these and voila.. came up with our own!

The fact that some teachers were able to report their progress like this was an important part of the discussion board interactions and benefited those who read these messages as well as those who responded to them. These messages also played an important role in validating what other schools were doing in CMIT. As one teacher wrote,

I read this discussion and it has reaffirmed my knowledge and what we have been discussing while undertaking tasks.

There were two essential supports which facilitated the kind of sharing of experience among the teachers described here. First was the mix of beginning and experienced teachers. As noted already, this combination meant that there were always teachers who wanted to learn more and had questions to ask, as well as those who had the necessary breadth of knowledge and expertise to feel confident in providing answers. This comment from one beginning teacher is typical of how group sharing might begin:

I am first year out from uni so the CMIT is quite new to me. I am not exactly sure how I should run my groups.

The fact that there were teachers whose knowledge and experience of CMIT was limited, and that some of these teachers were willing to seek help from the group via the discussion site made for a richer sharing of ideas. It gave more experienced teachers opportunities to draw on their own experience and communicate this to others.

The structure of some of the learning tasks also provided opportunities for teachers to draw on their experiences and share them. The learning tasks focused largely on practical concerns for teachers using CMIT in the classroom and this was generally successful in providing teachers with a framework to guide the school team discussions. In addition, the fact that schools were required to report a summary of their discussions at regular intervals throughout the project made it more likely that teachers would share their experiences.

4.5   Did the online mentor facilitate the discussion?

Salmon (2000) suggests that one of the important roles for the 'e-moderator' of an online forum in the initial stages of the discussion forum is to welcome and encourage the participants. It is the time to greet participants and offer them support, and it is clear from reading the transcripts of the messages posted by the online mentor that she did precisely that. The following response from the online mentor to a school's first message typifies her approach.

Welcome aboard. I look forward to working with you. You are doing well to get onto the discussion site. … If you have any difficulty please contact me and I can see if I can be of further assistance to you. Have a good week.

As participants begin to make greater use of the discussion board, the e-moderator needs to make sure that they feel respected and are able to gain respect for their views (Salmon, 2000). While it was uncommon for teachers to make criticisms of the project on the discussion board, some did occasionally and the online mentor always dealt with these comments in a very professional manner. She would respond to these teachers with comments such as "I take your point" and often provided a brief explanation to justify the situation while still acknowledging the value of the teacher's critique.

Another important element at this stage of an online forum is to ensure that participants' questions are dealt with in an appropriate timeframe. The online mentor almost always replied promptly to messages and helped to create an informal tone for the discussions, taking the lead in promoting mutual respect among the participants. There were a number of comments from teachers on the discussion site and in the evaluation forms thanking the online mentor for her guidance and assistance that show how the participants appreciated these efforts.

The online mentor also encouraged participants to become involved in the discussions by reminding teachers of the benefits to be gained from actively engaging in the discussion board.

Keep in touch and don't forget, you get most out of the discussion site if you participate regularly and share your experiences with other schools.

It has already been noted that specific requests for information or assistance were generally more likely to elicit responses from participants and the online mentor often made direct attempts to encourage discussion.

The last task that is due before the final evaluation is to reflect on a favourite activity that can cater for differing abilities and share it with your colleagues via the discussion site. It would be wonderful if all schools were able to share an activity. Hope to get some great ideas from you all.

Salmon (2000) also notes that an e-moderator should guide the construction of knowledge on the discussion site by stimulating fresh ideas and themes. In this regard, the online mentor encouraged discussion by making comments, sharing her own experiences with CMIT and posing questions for the group. The mentor also used the strategy of building on the messages of others and encouraging further participation. This comment initiated some discussion and sharing of ideas:

I was also interested in what you use on the data base to pass on the results. Have you developed a tracking sheet for this? Are you able to share this with us?

Yet, despite the online mentor's efforts, a high degree of participation was not achieved among the group. One possible reason might be related to the speed with which the online mentor replied to messages from schools. As noted above, the online mentor was generally prompt in responding to messages and answering questions, but perhaps if she had waited for a longer time the reply might have come instead from someone else. For example, teachers from a school ended their message one afternoon with the comment "love to hear

from anyone" and the online mentor was the first to reply on the very next morning. This clearly did not allow enough time for other schools to read the message and consider a reply of their own. It is likely that, having seen the mentor's reply to the original message, other teachers did not feel the need to respond themselves and the discussion was closed off right from the start.

In another instance, a school posted a message on August 23. The online mentor did not send an immediate reply and another school eventually responded to the message on August 31. The delay seems to have allowed space for teachers from this school to make their contribution. In this instance, the online mentor replied to the second message within an hour and that was the end of the thread.

The question of how long the online mentor should wait before posting a reply is a delicate one because schools need to feel that their contributions are valued and that their questions will receive a swift response. On the other hand, the temptation to provide automatic replies should be avoided as it is unlikely to encourage communication from other participants. The challenge is to find a way of reconciling these seemingly opposing considerations and recommendations to this end are made in Section 6 of the report.

5. Summary

Part B of the report has focused on the online discussion board used in the CMIT Online project. A review of relevant literature led to the development of an analysis model based on three key ideas. First, a statistical count of the messages and message threads was undertaken according to who posted each one, how many responses it generated and how many schools contributed. Secondly, as suggested by Henri (1992), the content of each message was broken down into message units which were coded according to five domains: *advice, information, resources, encouragement* and *social*. The message units were also counted and examined to provide further information about the nature of the online discussion. Thirdly, the work of Mason (1992) and Salmon (2000) provided a frame for investigating the extent to which the teachers and the online mentor had achieved certain participation criteria.

The message counts showed minimal levels of participation by the teachers. Although the majority of message threads were initiated by schools, most of these received a single reply from the online mentor. Only a small number of threads involved more than one school and most of the interaction centered on messages or replies posted by the online mentor. So although teachers did initiate message threads, they generally did not respond to or build on the messages of others. Most of the message units involved the sharing of information about CMIT and the online program. Other domains receiving significant message unit counts were those coded as encouragement, particularly in messages from the DET mentor aimed at increasing online participation, and social messages where teachers introduced themselves in their school setting.

There are several reasons that might explain the relatively small number of messages posted by teachers. Many teachers, particularly those involved in the project during Terms 3 and 4, complained that they were too busy with work commitments to find the time to visit the site and the relatively small number of messages posted from late October onwards would appear to support this view. Some teachers didn't feel confident enough to place messages on the site because they considered that their lack of CMIT experience meant

they didn't have as much to offer as others. These teachers preferred to confine their engagement with the discussion board to reading others' messages.

There were also occasional technology-related problems that made it more difficult for teachers to post messages. Network failures in a couple of schools restricted access at times and some teachers found the steps involved in accessing the discussion board difficult to master. While a few teachers persevered and were eventually able to post a message to the site, others did not. Some commented on what they regarded as the impersonal nature of online communications and expressed the desire for professional development that was face-to-face and led by a consultant. For these teachers, the idea of sharing with and learning from others via the discussion board was problematic and the generally low levels of participation reinforced their view that this was not the best way for teachers to develop their understanding of CMIT.

Despite the limited participation by many teachers in the online discussion board there was still some important sharing of practical information and classroom experience of CMIT. The most productive message threads centered on the learning tasks that required school teams to summarise their meetings and involved teachers who were willing to initiate an exchange of ideas by asking questions of their colleagues.

The role of the online mentor was a critical element in supporting the discussion board interactions. The online mentor responded warmly to teachers' messages and encouraged discussion by posing questions for the group and inviting people to share their ideas and resources. Even when some teachers occasionally made negative comments about the project, the online mentor acknowledged the teacher's views and maintained a professional tone. The online mentor responded quickly to teachers' messages and this may have inadvertently suppressed participation among the group by not allowing sufficient time for other teachers to consider posting their own replies.

6. Recommendations

This section of the report recommends changes to the CMIT Online project that are principally designed to increase teachers' participation on the discussion board.

Some of the participants were confused about the aims of the project and others felt it could have been better targeted to their individual needs. Therefore the objectives and the target group need to be made more explicit. Schools which indicate a willingness to become involved should be given specific information about the nature of the project and what will be expected of them. Even though this information is currently listed in the support document it still needs to be reinforced. In particular, schools where there are not at least some teachers who are experienced CMIT practitioners should not be permitted to enroll until after they have completed CMIT training sessions with a consultant.

One of the consistent themes emerging from the teachers' comments is their wish for more face-to-face contact with other participants and there would be considerable value in replacing the teleconference with an initial meeting. The gathering would serve a number of important purposes. It would allow teachers to meet informally and establish a rapport which is important because knowing the other participants personally allows one to link comments with faces, voices and personalities and gives a context for understanding and interpreting messages. It also means that messages are probably valued more and more likely to receive a reply.

An initial teacher meeting could also be used to demonstrate the CD-ROM and allow teachers to begin exploring it while there is technical support on hand if they need it. Teachers could also be introduced to the discussion board and the mentor could explain the importance of the web site as a means of sharing ideas and experiences. It is vital for teachers to have a positive first experience of the discussion board and the meeting would be a great opportunity for teachers to post a message and read some of the contributions made by others on the day. This activity could serve as a model for the kind of online sharing anticipated later in the project and help to iron out any technical difficulties teachers might encounter.

If the budget does not permit a single meeting for all participants then there might be value in using a videoconference instead of the teleconference as this would at least allow teachers to see each other during the introductions of the school teams.

Participants in an online forum usually begin their interaction with it by browsing messages posted by others. The support document could highlight the value in reading messages as a way of confirming of one's ideas or providing an opportunity to re-think them. The support document could also explain that teachers also need to post their own messages to ensure the flow of worthwhile information among the group.

The four learning tasks that required teachers to post a summary of their deliberations to the web site were the genesis of some useful interactions among the participants and there could be value in introducing a similar requirement for other tasks. This could be easily done for tasks 4, 5 and 8 as these already include a team meeting component. New tasks might also be developed. One possible early task could be to post a reply to someone else's message discussing an issue they have raised or developing one of their ideas further. Tasks which have an obvious connection to teachers' daily concerns in running CMIT in the classroom are more likely to generate online discussion.

The current project timetable does not specify precisely the dates either by which the learning tasks should be completed or items posted to the discussion board. This may have contributed to the feeling expressed by some teachers that they were drifting along and needed more direction. A completion date for the tasks might also encourage teachers to keep up with the program each week.

It is critical that schools post their first message early in the project as schools which fail to do so inevitably drop out and are less likely to contribute to the discussion board. The online mentor should contact all schools that do not contribute their introductory message by the due date and gently remind them to do so.

Most people regularly check their email and more use could be made of email in the project. Participants could be asked for a contact email address at the start of the project and the online mentor could send regular reminders to participants as a way of motivating and encouraging them to visit the web site. The mentor could send an email to teachers after they've posted their first message thanking them for their contribution and perhaps suggesting an area that they could elaborate on in a subsequent message.

Another advantage of following up a school's welcome message with a private email rather than a web posting is that it might help to avoid the common pattern of closed discussions between individual schools and the online mentor. The school would still have their contribution acknowledged but other participants would also have time to post a reply

as well. This could increase peer interactions among the group and reduce the number of threads confined to the online mentor and one school.

Emails could also be used to alert teachers to key aspects of the discussion as they unfold on the web site so that they can read and respond to new messages. This could be particularly useful when schools are sharing CMIT ideas and resources and an email alert couched in terms of the information on offer could be used to increase the likelihood of discussions among the group. The online mentor could improve participation by bringing together some of these browsers who were interested in similar ideas and encouraging them to share their thoughts by posting messages to the web site.

The online mentor could also use email to contact schools that have not posted messages to the discussion board for some time. These emails should not be admonishing in tone but might instead draw teachers' attention to some of the important ideas being discussed on the site and encourage them to make a contribution of their own.

When a school posts a message asking for help, the online mentor should avoid being the first one to reply. Instead, the mentor could contact teachers in another school, alert them to the message and ask them to post a reply.

Teachers should be discouraged from addressing their discussion board communications directly to the online mentor since messages that have an open salutation are probably more likely to provoke responses from other participants.

Operating the project in Term 4 is problematic and online participation is far more likely earlier in the year. One solution is to run the project just once each year, either in Terms 1 and 2 or in Terms 2 and 3. However, if it is felt necessary to run the project twice in each school year, then it would be better to start the second group in Term 2 and have the two groups overlap for a term. The second cohort for 2005 had access to messages posted by the first group and this did not appear to cause any difficulties so schools should be able to operate at the same time for a term if needs be.

The teachers from one school did post significantly many more messages than any other and it might be beneficial to inquire into why this occurred. Interviews with these teachers may identify key characteristics of the group that might be used to improve participation by other teachers.

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Appendix

Count Me In Too Online Evaluation.

1. How did the *123 Count with me* CD-ROM help to support *Count Me In Too* in your school and will you continue to use it?

2. Did you as a teacher acquire the intended knowledge and skills from the project?

3. How did your school plan help with maintaining CMIT in your school?

4. How can the project be improved?

5. What other help would assist you in maintaining CMIT in your school?