



Report on the Count Me In Too Indigenous Project during 2002

A report prepared for the New South Wales
Department of Education and Training,
Professional Support and Curriculum Directorate.

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GLOSSARY

AEA	Aboriginal Education Assistant
AECG	Aboriginal Education Consultative Group
AERT	Aboriginal Education Resource Teacher
AP	Assistant Principal
ASSPA	Aboriginal Student Support and Parents Awareness
CDEP	Community Development Employment Projects
CT	Classroom Teacher
<i>CMIT</i>	<i>Count Me In Too</i>
<i>CMITI</i>	<i>Count Me In Too Indigenous</i>
DEST	Department of Education, Science and Technology
DMC	District Mathematics Consultant
DP	Deputy Principal
NSW AECG	NSW Aboriginal Education Consultative Group Inc
SENA	Schedule of Early Number Assessment

EXECUTIVE SUMMARY

Count Me In Too Indigenous (CMITI) is a numeracy research project being implemented in five schools in 2001–2002. The project aims to investigate teaching strategies that support effective numeracy learning for Aboriginal students from preschool to Year 2. Count Me In Too Indigenous is funded by the Quality Teaching Program. The project focuses on the professional development of teachers in their teaching of numeracy to Aboriginal students in urban and rural locations.

This year (2002) the schools were given funding to release each teacher involved in the project for three days. This release time will assist teachers to complete pre and post assessments using the Extended SENA and will also provide time for preparing and organising teaching materials. Funding was also provided for teachers to travel to Sydney for the Sharing Day.

(NSW Department of Education and Training, 2002)

CMITI was introduced into five primary schools in NSW during 2001 and provided an opportunity for teachers, Aboriginal educators, parents and communities to develop a local program of numeracy development.

An evaluation of the implementation of CMITI in these five schools was carried out by Bob Perry, University of Western Sydney and Peter Howard, Australian Catholic University who also completed an evaluation in 2001. For 2002, the major foci of the evaluation were:

- an emphasis on identifying factors affecting the continuity of CMITI in each of the schools and the success of student learning outcomes and programs;
- the continuing professional development of teachers, Aboriginal educators and community members in mathematics;
- a greater emphasis on the teacher use of the *Learning Framework in Number*.

FINDINGS

Continuity of CMITI

Factors which will affect the continuity of the CMITI program include:

- Program leadership in the school
- Continuity of staff
- Preschool to school links
- Effective relationships between Aboriginal and non-Aboriginal educators
- The use of CMITI in homework centres

Student learning outcomes

The data analysis of students' responses to the pre- and post-applications of the extended SENA show that, in general, the students have improved in the six constructs of the learning framework over the period of instruction.

The quantum of improvement in 2002 is greater than that in 2001 in the areas of numeral identification, forward number word sequence, backward number word sequence and early arithmetical strategies. There is no doubt that the techniques, activities and procedures implemented through the program are associated with improved student learning outcomes.

Continuing professional development of educators and community

The importance of extensive and sustained professional development for the educators involved in *CMITI* was clearly evident in the evaluation. The success of *CMITI* in the five schools seems to be quite closely correlated with the level of professional development able to be implemented.

The Learning Framework in Number

In 2001, a common focus for schools involved in *CMITI* was the development of materials depicting Aboriginal designs. In 2002, at least in some of the schools, this focus has moved on to include an understanding of the Learning Framework in Number, on which the program is based. In these schools, there is evidence of the teachers and AEAs using and understanding the language of the framework. There is a much greater (than in 2001) appreciation of it in the analysis of students' work and the development of activities which were closely aligned with the framework stages.

CONCLUSION

In 2001, *CMITI* commenced in the five schools with great enthusiasm from all concerned. This level of enthusiasm has been maintained during 2002 in most of the schools and enhanced in one or two of them. Those schools who have managed to get their resources and programs organised around the approaches of *CMITI*, have developed enthusiastic and coherent teams of educators and who have involved their Aboriginal communities, have provided continuing success for their students in terms of learning outcomes. *CMITI* obviously has a great deal to offer in the numeracy education of young Aboriginal students. It is hoped that the program can be expanded in the forthcoming years.

RECOMMENDATIONS

In the 2001 progress report, the evaluators made a total of 14 recommendations, most of which seem to have been implemented. *CMITI* has provided a continuing impetus in 2002 for schools with Aboriginal students to discuss and implement appropriate teaching strategies and learning activities which support the early numeracy learning of Aboriginal students. Given this, the following three recommendations are made as a result of the 2002 evaluation.

1. That the *CMITI* program be extended to all NSW Department of Education and Training primary schools with an enrolment of Aboriginal students.
2. That the NSW Department of Education and Training provide professional development to the classroom teachers, AEAs and

AERTs in these schools in using the Learning Framework in Number as a means of assessing and analysing Aboriginal students' early numeracy achievement and in planning and implementing culturally appropriate learning experiences.

3. That the NSW Department of Education and Training assist Aboriginal communities by providing opportunities to increase awareness of their children's early numeracy learning through culturally appropriate information sessions and materials.

OVERVIEW OF THE COUNT ME IN TOO INDIGENOUS PROGRAM

The following extracts from the *Count Me In Too Indigenous* support materials provide background to the project for 2002.

Count Me In Too Indigenous (CMITI) is a numeracy research project being implemented in five schools in 2001–2002. The project aims to investigate teaching strategies that support effective numeracy learning for Aboriginal students from preschool to Year 2. Count Me In Too Indigenous is funded by the Quality Teaching Program. The project focuses on the professional development of teachers in their teaching of numeracy to Aboriginal students in urban and rural locations.

This year (2002) the schools were given funding to release each teacher involved in the project for three days. This release time will assist teachers to complete pre and post assessments using the Extended SENA and will also provide time for preparing and organising teaching materials. Funding was also provided for teachers to travel to Sydney for the Sharing Day.

(Department of Education and Training, 2002)

CMITI is designed to build upon the successes of the *Count Me In Too* (CMIT) program by making it more culturally and contextually appropriate for Aboriginal children in preschool to Year 2.

CMITI was introduced into five primary schools in NSW during 2001 and provided an opportunity for teachers, Aboriginal educators, parents and communities to develop a local program of numeracy development. The key to the program was the extended Schedule for Early Number Assessment (SENA) which provided a useful way for listening to Aboriginal children and learning about how they undertake certain mathematical problems. Adapting the SENA as well as the activities in the program to meet the local needs of Aboriginal children and their communities increased the potential for sound learning in a meaningful and relevant way.

The following summary of the results from the 2001 evaluation of CMITI provides an indication of the successes of the project.

Aboriginal student learning outcomes

Partial assessment data from 108 students [59 female and 49 male] were available to the researchers. Data on the extended SENA was analysed for the six constructs of subitising, sharing, numeral identification, forward number word sequence, backward number word sequence and early arithmetical strategies. In general, the implementation of CMITI has resulted in improved learning outcomes across all constructs for those Aboriginal students involved in the program.

Professional development

The CMITI materials including the extended SENA (the assessment schedule by which Aboriginal student strategies could be analysed), teaching activities and the Learning Framework provided a basis for the professional development of teachers. The implementation of CMITI through the associated Sharing Days, support from the District Mathematics Consultants and the facilitation visits undertaken by the evaluation team and staff from the Professional Support and

Curriculum Directorate provided further professional development support for teachers.

Involvement of Aboriginal staff

CMITI provided the impetus for Aboriginal and non-Aboriginal staff, at each school, to work co-operatively in the program's development and implementation. Many schools indicated that this was the first time that the school had placed an emphasis on the numeracy needs of Aboriginal students in Stage 1.

Involvement of Aboriginal communities

In each school, CMITI provided an opportunity for the local Aboriginal community to become involved in the development of mathematical resources and, in some cases, assisting teachers in classrooms with the implementation of the program. This involvement varied from school to school, but, in each case, it was the CMITI program that was pivotal in fostering the Aboriginal community's involvement.

(Howard & Perry, 2002, pp. 4–5)

TERMS OF REFERENCE FOR THIS STUDY

In 2001, the researchers were required to:

- facilitate and advise the *Count Me In Too Indigenous* project through visits to each participating school community, attendance at Advisory Committee meetings and the sharing days
- research and prepare case study reports of the *Count Me In Too Indigenous* project schools, to document teaching strategies and programs which support effective numeracy learning for Aboriginal students
- prepare a progress report which evaluates the effectiveness of the *Count Me In Too Indigenous* project in identifying and implementing teaching strategies, including data from:
 - the individual case studies
 - student results on the extended SENA
 - notes from local advisers.

For 2002, the major foci of the evaluation were:

- an emphasis on identifying factors affecting the continuity of *CMITI* in each of the schools and the success of student learning outcomes and programs
- the continuing professional development of teachers, Aboriginal educators and community members in mathematics
- a greater emphasis on the teacher use of the *Learning Framework in Number*.

PROJECT METHODOLOGY

Data were gathered in 2002 from school visits by the researchers, one sharing day and student assessments on the extended SENA which were implemented by the teachers on two occasions during the year. An overview of each of these sources of data is given below.

School visits

In 2001, each of the five schools was visited by one or both researchers on at least three occasions. In 2002, visitation was restricted to once or twice to each school by only one of the researchers on each occasion. In view of fact that an almost complete turnover of teaching staff had occurred at the beginning of 2002 in the North-West school and because of its remoteness, it was determined that the proposed visit to this school would be cancelled. Details of the visits in 2002 are given in Table 1 below.

Site number	Location	Visit 1	Visit 2
1	South Coast	May 6 Bob Perry	November 1 Bob Perry
2	North Coast	October 31 Bob Perry	
3	Western Sydney	November 1 Peter Howard	
4	Eastern Sydney	October 31 Peter Howard	
5	North West	Visit scheduled for November 4 postponed	

Table 1 Details of site visits to CMITI schools

SHARING DAYS

A sharing day was held for the *CMITI* program in Sydney on June 5, 2002. There were several purposes for the sharing day. Primarily, it provided an opportunity for representatives from the five school communities to come together to meet. Through these meetings, each school was able to share with the others the specific contextual developments that have been generated as a result of their involvement in *CMITI*.

The sharing day was a critical professional development component of the implementation of *CMITI*. It provided an impetus in bringing together focused groups of representatives of Aboriginal communities and educators to discuss mathematics learning issues affecting Preschool to Year 2 Aboriginal students in public schools in NSW.

Count Me In Too Indigenous Sharing Day Wednesday, June 5, 2002 PROGRAM	
8.30 am—9.00 am	Registration
9.00 am—10.30 am	Welcome to Country Revisiting framework Analysing an Extended SENA Discussion on activities for students and how they fit into the framework
10.30 am—11.00 am	Morning tea
11.00 am—12.30 pm	School sharing of activities Share an activity and explain where it fits in the Framework Explain how to adapt the activity for different levels
12.30 pm—1.20 pm	Lunch
1.20 pm—3.00 pm	Findings from 2001 Community involvement Questions/concerns Housekeeping Summing up

Table 2 Program for Sharing Day

STUDENT ASSESSMENT

A condition for the involvement of each of the schools was that they were required to submit the complete results of their Extended SENA assessments to the *CMITI* Project Officer. Three of the schools provided relatively complete data. This has been analysed using SPSS-X to provide some quantitative measures of the impact of *CMITI* on student learning outcomes.

STUDENT RESULTS FROM EXTENDED SENA

At least partial data from 115 students in the five schools were made available to the researchers. Complete data was available for 74 of these students (64%).

Class	Female	Male	Total
Preschool	7	2	9
Kindergarten	25	21	50
Year 1	19	11	31
Year 2	7	12	20
Year 3	1	0	1
Year 4	3	1	4
Total	62	47	115

Table 3 Class groups for CMITI students (Year 3, 4 students from one K–4 school; six students of undisclosed sex)

For this report, we have determined that only data summarising the students' performance on the extended SENA will be presented. Data on six constructs—subitising, sharing, numeral identification, forward number word sequence, backward number word sequence and early arithmetical strategies—are available. Tables 4 to 9 present the levels in the learning framework which have been assigned to students in their initial and final extended SENA interviews.

Level	Initial Extended SENA		Final Extended SENA	
	Number	Percentage	Number	Percentage
Emergent	58	56.9	25	29.4
Perceptual	35	34.3	35	41.2
Conceptual	9	8.8	25	29.4
Total	102		85	

Table 4 Learning framework levels in subitising on initial and final extended SENA

Level	Initial Extended SENA		Final Extended SENA	
	Number	Percentage	Number	Percentage
Unable to form groups	15	16.3	2	2.4
Able to form groups	18	19.6	12	14.1
Able to reform groups	59	64.1	71	83.6
Total	92		85	

Table 5 Learning framework levels in sharing on initial and final extended SENA

Level	Initial Extended SENA		Final Extended SENA	
	Number	Percentage	Number	Percentage
Emergent	41	40.2	10	11.8
I-10	32	31.4	21	24.7
I-20	9	8.8	13	15.3
I-100	20	19.6	41	48.3
Total	102		85	

Table 6 Learning framework levels in numeral identification on initial and final extended SENA

Level	Initial Extended SENA		Final Extended SENA	
	Number	Percentage	Number	Percentage
Emergent	17	16.7	1	1.2
Initial (10)	36	35.3	7	8.2
Intermediate (10)	11	10.8	4	4.7
Facile (10)	20	19.6	24	28.2
Facile (30)	7	6.9	25	29.4
Facile (100)	11	10.8	24	28.2
Total	102		85	

Table 7 Learning framework levels in forward number word sequence on initial and final extended SENA

Level	Initial Extended SENA		Final Extended SENA	
	Number	Percentage	Number	Percentage
Emergent	47	46.1	11	12.9
Initial (10)	16	15.7	13	15.3
Intermediate (10)	11	10.8	7	8.2
Facile (10)	16	15.7	24	28.2
Facile (30)	5	4.9	11	12.9
Facile (100)	7	6.9	19	22.4
Total	102		85	

Table 8 Learning framework levels in backward number word sequence on initial and final extended SENA

Level	Initial Extended SENA		Final Extended SENA	
	Number	Percentage	Number	Percentage
Emergent	43	42.2	13	15.3
Perceptual	36	35.3	30	35.3
Figurative	11	10.8	19	22.4
Counting-on and back	9	8.8	18	21.2
Facile	3	2.9	5	5.9
Total	102		85	

Table 9 Learning framework levels in early arithmetical strategies on initial and final extended SENA

The application of a two-way contingency table analysis on the initial and final levels for each of the six constructs shows that the growth in these levels is highly significant for all the constructs.

Table 10 presents the growth in the levels assigned to each factor for each student for whom we have results from both extended SENA interviews.

Construct	Percentage showing growth in construct levels							
	-2	-1	0	1	2	3	4	5
Subitising		1.4	62.2	31.1	5.4			
Sharing	2.7	5.4	67.6	17.6	6.8			
Numeral identification			40.5	35.1	16.2	6.8	1.4	
Forward number word sequence		1.4	23.0	25.7	23.0	17.6	9.5	
Backward number word sequence	1.4	1.4	28.4	27.0	14.9	20.3	5.4	1.4
Early arithmetical strategies			48.6	31.1	14.9	5.4		

Table 10 Growth in learning framework levels for the six constructs

When growth in the construct levels was considered across the gender of the students, no statistically significant results emerged.

REPORT ON SCHOOL 1

INTRODUCTION

School 1 is a primary school situated in a south coast town in NSW. The school had an enrolment of approximately 360, with approximately 65 Koori students in classes across the school. In general, the school staff has been at the school for some time and is relatively stable.

In 2002, the school moved from its central business district site in the town to a relatively isolated site on the other side of the river. The new school was purpose built on a greenfields site.

CMITI is coordinated by the AERT. The school has a long-term Aboriginal Education Assistant (AEA) who has lived in the community for 15 years, is the Chair of the local AECG and is a major player in Aboriginal affairs in the community. As well, there are three other Aboriginal workers involved with literacy and numeracy programs.

The school has a very strong Aboriginal Student Support and Parent Awareness (ASSPA) group and strong links to the local Aboriginal Education Consultative Group (AECG). A major initiative of the ASSPA is the Homework Centre. It is run by the AEA with support from the AERT, the other Aboriginal education workers and community members but has had a chequered life during 2002 because of funding cuts which caused it to close down for some time. In general, community support for the school is high although the move to the new site has caused some friction with the Aboriginal community. The AERT feels that this will eventually be resolved.

CMITI 2002, AN OVERVIEW

The school had introduced *CMITI* into its Kindergarten to Year 1 classes in 2001. The major aim for 2002 was to extend this into Year 2. There had been some resistance to this from the Year 2 teachers but this has gradually eased and *CMITI* is being implemented in some of the Year 2 classes.

The development of “Indigenised” resources continued during 2002 with many more materials being produced using Aboriginal motifs and ideas. There was, as well, the continued realisation that these materials should be designed and used for the teaching of mathematics in line with the *Learning Framework in Number*. Hence, there has been a much stronger attempt in 2002 than there was in 2001 to link the activities developed with the learning framework. This has resulted in a much better understanding of the structure behind the learning framework, especially on the AERT’s part.

SUPPORT ROLES

CMITI is well supported within the school and is seen as an integral part of the school's mathematics program. The Principal has been very supportive of *CMITI* over the two years of its implementation in the school. He started off very well in the community and quickly established himself as a helper in the community.

There have been a couple of issues which have arisen as part of the move to the new school.

Firstly, the AERT and the AEA share a small room at the back of the school hall which needed further work when the *CMITI* visit was made to the school in October, 2002.

Secondly, there has been a great deal of controversy over the promised Aboriginal resource room within the school. Instead of a dedicated room, the allocation has been two glass cases in a small space at the back of the library.

CMITI is implemented in the classroom by the classroom teacher, the AERT and other Aboriginal assistants. Just as it was in the old school, support for *CMITI* in the new school is very high among the classroom teachers.

In this school, *CMITI* has been coordinated by the AERT. She is the driving force behind the organisation of the program and its acceptance by teachers in Kindergarten and Year 2. Since she is a trained teacher, she has equal status with the classroom teachers and is able to argue for certain approaches and processes from the experience and education of a teacher. In this school, the AERT is acknowledged by all concerned as the *CMITI* leader.

PROFESSIONAL DEVELOPMENT SUPPORT

The move to the new school in 2002 was a long-term disruption to many facets of normal school life. Professional development of staff was one of these facets. However, the AERT and AEA have managed to continue with their professional development of staff through *CMITI*. Irregular meetings and workshops have introduced many of the staff to the approach and many of the activities and games which have been developed under the auspices of *CMITI* are being used by non-Indigenous staff to develop the mathematical ideas in their classes with both Aboriginal and non-Indigenous students.

It is worth noting that it is this school which was chosen by the *CMITI* Project Officer to assist in the development of the recently completed *CMITI* videotape. Hence, the staff and students involved with *CMITI* at this school will have a major impact on the thinking of many of their colleagues about the mathematics education of Aboriginal students.

SUMMARY

CMITI has been implemented in this school with a minimum of both fanfare and fuss. It has been accepted as an appropriate approach to the mathematics education of the Aboriginal students in the school and has been adopted by some teachers for non-Aboriginal children.

The materials which have been produced by the members of the *CMITI* team at this school are widely sought after by both teachers and students. The materials depict local motifs and stories and help students to view the activities as culturally endorsed.

While the implementation of *CMITI* in this school has to be seen as a marvellous success, the AERT and AEA will not leave it there. They both are determined to move a *CMITI* approach into the higher grades in the school and have gathered some allies among their colleagues at the school.

The results achieved have been outstanding over the two years of the project's existence. In this school, *CMITI* has been given a real chance to show its potential as a change agent. The program has been enthusiastically and expertly implemented and seems to have made substantial difference to student outcomes, staff approaches to their teaching of mathematics and to community involvement in the mathematics learning of their children.

REPORT ON SCHOOL 2

INTRODUCTION

This school is a small school situated in an isolated community on the north coast of New South Wales. The school consists of one K–4 class of 18 Aboriginal students and a four day per week preschool with an enrolment of 15 children. The Principal of the school, who is also the K–4 teacher, is Aboriginal but the preschool teacher is not. There are two Aboriginal Education Assistants (AEA) employed at the school; one in the K–4 class and one untrained assistant in the preschool. The school is pleasantly situated on the banks of an island in a major river. It consists of two buildings—one housing the preschool and the other the primary classes, staff office and amenities. These buildings are linked by a covered walkway. The school seems to be well-resourced, with a high technology presence. It is growing in size and stature, having been a K–2 school until 2000. Building enhancements undertaken during 2002 have provided extra rooms, especially in terms of office space and a staffroom.

The community in which the school is situated was historically an Aboriginal mission. It has been rebuilt with modern housing but not expanded in terms of the number of houses. Facilities within the community include a medical post which operates on Tuesdays, Land Council office, Community Development Employment Projects (CDEP) office, canteen, church, fruit and vegetable stall, as well as the school. The entire settlement is surrounded by fields cultivated with sugar cane. Access to the settlement is via a narrow road and across a one-lane bridge. The entire island is flood prone.

The school principal and the two AEAs attended the school as children. Neither teacher lives within the community but the two AEAs do. There is an informal atmosphere at the school; the principal is known as *Uncle* ... to most of the students, and is, in fact, a blood relative to many of them. There is a Homework Centre run at the school on two days per week by the AEAs. This is attended by most of the students from the school and a number of children from the settlement who go to school in other towns.

The school is proud of its Aboriginal heritage and extols the advantages of such heritage at every opportunity. There is a lot of artwork depicting local history on the school walls. This was commissioned from local Aboriginal artists.

CMITI 2002, AN OVERVIEW

The school introduced *CMITI* into its Kindergarten to Year 1 classes in 2001. However, as the K–3 students in 2001 all worked in the one classroom with the one teacher, all of these students were exposed to the games and activities of the program, if not the assessment. These arrangements were extended in 2002 to include the Year 4 students. As well, the SENA 2 from *CMIT* was used for the assessment of the older students.

The development of “Indigenised” resources, which was begun most successfully in this school in 2001, continued during 2002 with many more materials and games being produced using Aboriginal motifs and ideas. These materials are a highlight of the school’s involvement in *CMITI*. However, there does not seem to be any sign to suggest that the *Learning Framework in Number* was being used as an organiser of the ideas behind these materials and games. Often the materials and games, which have undoubted merit in their own right, were seen as inherently beneficial because of their cultural images rather than their links to the learning framework. Partly, this apparent lack of understanding is a reflection of the “busyness” of the school.

Small schools can be very difficult places in which to teach, let alone introduce innovative numeracy programs. There is a close link between the preschool and the school for example, Kindergarten students join with preschool children in their *CMITI* experiences, and this certainly enhances the probability of the continuity of teaching approach introduced by the program. However, the challenges confronting the teaching principal in the primary class mean that while some of the *CMITI* activities are being used, an understanding of the theoretical background of the program is lacking. This does not augur well for the continuation of the total program in this school.

SUPPORT ROLES

The program is well supported within the school in terms of time and resourcing. Many very useful activities and games have been devised. The emphasis has been on localising and Indigenising the contexts for these. The two AEA’s have played a major role in the actual construction of these resources. There has been some support from local artists in the resource development. The principal is also an accomplished artist who has lent his talents to the resource production program. The preschool teacher has been the coordinator and driving force behind their development.

There is little community involvement in the educational programs of the school. The principal has tried to entice parents and grandparents into the school by paying them through ASSPA funds. Even this has resulted in only minor gains.

CMITI is supported in the classroom by all the staff of the school. In both the preschool and the primary classrooms, both teachers and AEA’s are involved. The AEA-run Homework Centre also uses the resources and ideas developed through the program.

In this school, *CMITI* is coordinated by the teaching principal. This has meant that *CMITI* has often been not the highest priority because of the myriad of other things a teaching principal has to do.

PROFESSIONAL DEVELOPMENT SUPPORT

Professional development is key to the establishment of a program like *CMITI* in a school. There has been a lot of support to the school from the *CMITI* Project Officer. However, given the other responsibilities of this

officer, insufficient time has been available to assist as much as has been needed. Changes in consultancy personnel and illness of the DMC has also interrupted the professional development of the school's staff. The *CMITI* Sharing Day was seen as particularly important by this school. However, the return to the reality of their school meant that many of the ideas, especially about assessment and the underpinning of the *Learning Framework in Number*, were subsumed by the everyday challenges of the school. If *CMITI* is to survive and even flourish in this school, there will be a need for a sustained, regular and intensive professional development program on the theoretical underpinnings of the program as well as on the practicalities of managing it in a challenging classroom situation.

SUMMARY

In the report of the implementation of *CMITI* in this school in 2001, the following conclusion was written:

The implementation of CMITI in this school is in an embryonic stage. The Principal of the school has opted to hasten slowly through the first year of the program and, as a consequence, the school is not as far advanced in terms of implementation of the program or involvement of the community as some of the other schools. Particular issues have arisen in this context because of the nature of opportunities and time constraints in a small school and because of the rapid growth of the preschool. In spite of this, progress has been made and the teachers are at least consciously aware of many of the challenges which face them as they move to implement CMITI in 2002.

Unfortunately, one must conclude from the observations of the implementation of *CMITI* in this school in 2002 that little has changed. This is not to say that the teachers and AEA's in the school are not making valiant attempts to improve the situation of educational disadvantage experienced by their students. Certainly, the physical changes in the school, the development of excellent resources and the enthusiasm of the staff for an appropriate education for all students have assisted in moving forward. However, in the overall context of the school, *CMITI* is still a very small part.

The highlight for 2002, as it was in 2001, has been the continued development of resources which depict local motifs and stories that help students to view the activities as culturally endorsed. The materials are certainly in high demand from other teachers who have seen them and there is some talk of commercialisation. However, the lack of a theoretical understanding of the underpinning learning framework is disappointing after two years.

The issue of time is central in the above critique of the implementation of *CMITI* in School 2. The teaching principal of the school and the four day a week preschool teacher simply do not have time in their busy schedules to devote the time needed to develop their understanding of the underpinnings of *CMITI*. This issue for small schools needs to be addressed specifically in order for such programs to succeed.

REPORT ON SCHOOL 3

School 3 is a primary school in the western suburbs of Sydney. The school has two classes in each year, a Special Education class and an Aboriginal preschool. There is one AEA in the preschool and another across Years K–6. The primary AEA assists with all classes during the week but is not involved in planning classroom activities. The AEA is a critical link between the school and the Aboriginal community. The local Aboriginal community is involved in *CMITI* with Aboriginal parents involved in making resources and assisting teachers in the lessons.

CMITI 2002, AN OVERVIEW

In 2001 the *CMITI* program at the school seemed to be a separate program to *Count Me In Too*. This situation has changed in 2002 because there is a greater understanding of the *CMITI* program and there is now a whole-school focus. This was a process of change and integration that the staff experienced with the implementation of a new program. *The thing that I like about it now is that it is not two separate programs—Count Me In Too and CMITI—you know, we are all heading for a common goal for all the kids across all communities. I think that is great.* [AEA]

CMITI has brought about change in the relationships between teachers and Aboriginal parents with the parents being welcomed into and actively involved in the K–1 mathematics classrooms. As a result of *CMITI* Aboriginal parents are more empowered in the language of mathematics, the mathematics itself and in teaching. *CMITI* has been seen as another avenue for reconciliation in that, *it has taught the kids to be more aware, the teachers as well. There is more calm there.* [AEA]

SUPPORT ROLES

The principal's role in communicating with various school groups [P&C, school council, parent committees] breaks down the barriers and assists the process of reconciliation. The assistant principal is the new co-ordinator of *CMITI* in 2002 and she has *learned a lot more this year by having to be involved in it. It's great.* As well the whole staff is now much more aware of the program. The assistant principal sees her role as one of maintaining the links between Indigenous and non-Indigenous parents so that it runs as a program bringing the community together. *I just oversee the program and help out with any difficulties associated with time and resources.* [AP]

It was thought that the mathematics consultant could come to the school in Term 1 each year and spend the day, repeating the assessment schedule process for new teachers and reshuffled staff enabling them to become immersed and understand the *CMITI* learning framework. In 2002 this occurred and *just sitting there and watching him go through all that stuff for all the teachers, that was a real eye-opener for me. I understood it after that. It was very clear. I think that is what the parents need.* [AEA]

The *CMITI* Project Officer's visits to the school ... *reinforced the fact that the program has been really positive and it has been given support. It didn't make us think that we needed to redirect or anything.* [AP]

RESOURCE SUPPORT

The Aboriginal community has continued to develop resources and these are made for all the children at the school to learn and share. *This is a program that was developed for Aboriginal kids to understand the language and make maths more user friendly but it has to be good for other kids too. We have made it fun for the kids and it is the non-Koori kids who want to get in and do the games.* [AEA]

During 2002 the school has *had some days for people to share and spend some time with parents going through some of the games and activities. In the early stages we did need the \$500 in 2001 to make the resources but now it's just a case of keeping those resources up to date and supplementing and trying to make a couple of new ones.* [AEA]

LINKS WITH THE PRESCHOOL

Having the preschool as part of the school assists with the transition to Kindergarten. In 2003 about 20 or so of the preschool kids will be *in our kindy next year and that is positive because they are already involved in the school.* [AP] However, through circumstances of staff and so on, . [2002 has not seen the preschool as involved in *CMITI*, as in the previous year. It is expected that in 2003 the preschool will be more involved] ... *because the staff member who was very much into it is back and becoming involved. It wasn't a reluctance on anyone's part but it was just a lack of knowledge. The previous teacher had built up a link with the community and then when the person goes it can take a long time for that trust to build up again.* [AP]

In 2001 the school had spent some time on developing *PowerPoint* activities that could be utilised in the classroom program. The school *would love to see this as a greater focus because it would provide more opportunities for all of the children in linking more things.* [AEA]

SUMMARY

The staff believes that *CMITI* has enhanced the mathematics learning outcomes of the Aboriginal students. The teachers are more aware of the *CMITI* learning framework and use the terminology in assessing children's levels of numeracy understanding. As well, there have been a number of other outcomes emanating from the implementation of *CMITI*. The potential use of technology, Aboriginal parental involvement, the professional growth of the AEA and the clarification of the roles of other support people in the development of mathematics have been the strengths of *CMITI* at the school. There is a greater professional understanding of *CMITI*, particularly in the use of the *Learning Framework* and awareness of how two programs, *Count Me In Too* and *CMITI* can come together and inter-relate. The school's explanation of the connection between *CMITI* and reconciliation opens people's minds to the potential that mathematics can have in playing a role in the reconciliation process.

REPORT ON SCHOOL 4

School 4 is a K–6 primary school in the eastern suburbs of Sydney. In 2002 there were 100 students in the school, 65% of whom are Aboriginal. The school has an AEA and an AERT. There are four primary classes in the school: K/1; 2/3; 4/5; 5/6.

CMITI 2002, AN OVERVIEW

During 2002 the school has continued with the *CMITI* program in the same way that they had structured it in 2001. *CMITI* has made a difference to the mathematics' learning environment within Kindergarten and Stage 1.

The way we had CMITI when we started the program, we have basically kept that same structure and framework from what we used last year and we've applied the same things this year so there hasn't been that much change. One thing that we did do differently is that because we only started in Kindergarten in the middle of 2001, my Kindergarten children this year we started straight up. I think by the third week we had assessed all the children and timetabled with XXX and XXX and straight into the classroom and we kicked off right at the beginning of the year. I expressed my view that the top group in Kindergarten, bright little buttons, were actually being catered for. They were being catered for at the right level and they have been wonderful. They are up to completing SENA one and are up to the counting on stage. They are little mathematicians. [CT]

The AEA works across the primary grades and is able to provide an anecdotal comment on the mathematics levels of those children who have been involved in *CMITI* and those who were not. *Because I work from Kindy up to Year 4, I am seeing those children who didn't have CMITI in Kindergarten that they don't have some of those concepts that the kids who have done the program have, even different formulas to 10. The top group in Kindergarten can do that and the Year 3s and 4s, sometimes they can't do that. [AEA]* For the classroom teacher there has evolved a greater appreciation for the numeracy knowledge that children bring to school with them. *Mind you they have come to school with a lot of knowledge but we have just been able to top that knowledge up. I would have been working with those children with 1 to 5, or maybe 1 to 10, in a normal maths program. I was amazed at how much knowledge they came in with and we were just able to put them in a program [CMITI] that challenged them and they are lapping it up. They are really enjoying it. [CT]*

CMITI has a focus on small group work. The parents know that their children are getting this time each day to work in small groups in maths and reading. *A lot of the parents like that because literacy and numeracy are the main things—the main idea of school. [AEA]* For the classroom teacher *CMITI* has impacted upon her pedagogy. *In fact I've now changed my reading groups and based them around the maths groups so in my kinder group the reading groups, we start our lessons with planning and then we move into sight words and then reading, then the little worksheet. So I've actually changed the structure to be more like the maths group and it is definitely working and they have a greater understanding. [CT]*

The school acknowledges that a key factor to the program's success has been the consistency with the structure used for *CMITI* and the staff involved.

We are very lucky and have good resources and have a very good principal. If we want to try something new he is very supportive. [CT]

SUPPORT ROLES

The principal approved the involvement of the AEA as the transition person for the *CMITI* program between the primary and the preschool. Without this support the program would not have eventuated.

There was strong support for the essential role of the Aboriginal educators. *If it wasn't for the AEA and the AERT then we couldn't keep running the program properly. We've had the consistency because we've all had the same goals and all worked towards maths groups and we give it a go and we are all in the classroom at the same time. [CT]*

The AEA has grown in her confidence with the program because she completed a *two day in-service with the AEAs from all around. Just going to that workshop gave me a better understanding, a bit more in-depth understanding of it. I was able to go into the classroom and work with the kids and it's hands-on and you learn as you go along. [AEA]* As a result of *CMITI* the AEA has a greater role in the children's learning of mathematics and has been able to witness the learning benefits of the program. The AEA believes strongly that all AEAs should be included in any *CMITI* professional development. *I think if they are going to be included in the implementation then they should be included in the training as well. It is really hard to be able to go into a classroom and work with a group ... I know you've got the cards but you don't know the outcomes or what the teacher really wants so to be able to understand that you need to be able to understand where you are coming from and those outcomes. [AEA]*

During 2002 the AERT took maternity leave and this has created a time factor difficulty for *CMITI*. *We would like to make a lot more resources, especially with an Aboriginal message. The preschool has made two sensational games, which are related to the preschool. There is a preschool bus that picks up the children. The preschool teacher drew a big bus and you have to role a dice and you have to put six children's smiling faces in the bus windows. I thought that was very clever. That was the first game and the second was with an old Koori calendar and she actually used the pictures and made them into bingo boards. Then the counters are shells, beautiful pebbles, gum nuts. All collected from around the area. [CT]* There has not been the time in the primary school to make resources and to implement *CMITI* into Stage 2. However, Stage 2 is harder because there are more concepts for the children to learn and that means that it's harder to group them. [CT]

PROFESSIONAL DEVELOPMENT SUPPORT

The professional development for *CMITI* has helped the teachers and the Aboriginal educators *to ask the children how they worked it out and they just try to help them with a few strategies and things like that. You are not telling them but you are asking them and getting the children to tell you how they work things out. It has really opened my eyes because you think there is only one way to do something but you realise there are so many different ways. [AEA]* Appreciating and knowing the learning framework has changed the interaction between the children and the teachers. Before *CMITI* I think that I just picked up a

maths book and went with it. Now we are actually focusing on particular skills like counting on as a strategy. Before we just expected every child to come out with the right answer and now we are asking them how they got that answer. [CT]

The AEA commented on how important it is for Koori children to be able to tell their teachers how they reached an answer. *To be able to understand how they are getting to that point. Sometimes a lot of Koori kids don't see the point in what they are doing or the reason behind it but when you are asking them and they are able to tell you then they feel better about it and about themselves and it gives them confidence. [AEA]*

LINKS WITH THE PRESCHOOL

The school's involvement with the local preschool has been the great success of *CMITI* in 2002. After the last sharing day in 2001 the educators involved in *CMITI* approached the school principal and with approval contacted the local preschool and invited them up to see Kindergarten in action, doing *CMITI*. The teachers then organised some funding, through the two schools, and in-serviced one preschool teacher and the teacher's aide in *CMITI*.

The *CMITI* assessment was completed at the preschool at the end of Term 1 2002. However, it took longer than expected because the preschoolers did not know and thus had no relationship with the primary teachers. *We went down there with just the thought that we would end up assessing all the preschool children but as it turned out they were all so shy that they wouldn't even talk to us. So we had to quickly change our way of thinking so we taught the staff there how to do it and we sat there with them and they were able to assess the children. There are twelve Koori children down there and that took a day. [CT]* As a result of the assessment two groups were formed. *There were three that we placed in numbers 1 to 3, and the others we decided we would work with them from 0 to 5, so on those concepts. [CT]*

The primary school AEA would go to the preschool every Tuesday to help with bringing the twelve preschool children to the primary school. Early childhood legislation requires one adult to supervise every four children when they leave the preschool. Every Tuesday the AEA *would go down and assist them bringing the kids up and in the classroom I would take a kindergarten group and then I would travel back down with the preschool kids. On a Thursday I was timetabled from here to go down there and work with the preschool kids. [AEA]* The children arrived at 10.30 am. The Kindergarten and preschool children would *do a few songs and nursery rhymes and get them to break up into five groups for CMITI. There were three groups in Kindergarten and two preschool groups. [CT]*

During the *CMITI* lesson at the primary school there are 32 children, 12 from the preschool and 20 from Kindergarten. There are five adults: the classroom teacher, the AEA, the AERT and the two teachers from the preschool.

There have been *a lot of preschool children who have moved from the 1 to 3 concepts up to the 0 to 5 and the 0 to 5 have gone to 1 to 10. They are counting forwards and backwards and they are grouping. We made a caterpillar game up and they had numbers on them and little bottle tops, 1 to 6 or 1 to 10, and the preschool teacher*

said there was no way that they could do that at the beginning. [AEA]

The teachers believe that these preschool children on entering Kindergarten in 2003 will be at a more advanced level of mathematics than usually encountered. *They will come in with concepts 1 to 10, not so much writing because we haven't concentrated on that but definitely on the numbers and the grouping and knowing what numbers come after and before, they will have that groundwork. [CT] They are learning the value of the number, not just that it is a number 10 but they are learning the value of that. In the beginning they just count and they don't really understand what they are doing but as they are playing the games they are understanding what the numbers mean and that they have some kind of value and I think that is so important for them to be able to take the next step. [AEA]*

The *CMITI* structure implemented at the school helps. *We set up CMITI when we first implemented it in the school, we broke it up into small groups and we sat in a circle and we went forwards and backwards, what comes before and what comes after, then playing games—that whole structure has been applied with the preschool. The preschool has been doing exactly the same format. Especially the older ones, the 1 to 10 group, they are concentrating so well in the classroom, there is a huge improvement there, just in their attention span. [CT]*

Further, as a result of their involvement in *CMITI*, there has been a marked improvement in the preschool children's numeracy. *CMITI is working at their level and when they move on they can and they aren't being held up. They are working at a pace that suits them. They are still getting the same work done and they are working up to the next level. [AEA]*

CMITI has been another way in which closer links are being formed between the preschool and the primary school. The preschool staff and children *have become familiar with the school, the classroom, and the teachers so that when they start next year they are going to be so comfortable. [AEA]*

SUMMARY

CMITI continues to be well implemented in this school. The staff acknowledge the learning impact of the strategies upon the numeracy learning of the Aboriginal children. The positive collaboration between the primary and preschool provides a potential model for other schools to follow. Consistency in the model used to implement the program and the stability of the staff involved is seen as a critical element within the program's success. It seems appropriate to use the words of the AEA to sum up the impact of *CMITI* at this school.

CMITI is a really good program for Koori kids because it's hands-on and they are able to understand what it is and what the end result is going to be. Some of them find it hard to imagine maths in their minds and until they can see it in front of them and that's when they understand. I think it is really important, not just for Koori kids but for all children. Being able to work in smaller groups then they are getting more attention and more help and rather than having the teachers rushing around. A lot of their home life is practical. It is trial and error. If they can't see it then they won't even give it a go. We have one child who sometimes has an attendance problem but he is also in the top group and just loves maths. They are all enjoying it and want to know every day when they are going to do it. That is just amazing. They love playing the maths games. [AEA]

REPORT ON SCHOOL 5

School 5 is a geographically remote K–12 central school in north-west New South Wales described by staff to be extremely isolated. There are approximately 250 students with five primary classes and a preschool. Approximately 45% of the students are Aboriginal, with a much higher proportion (around 60%) in Kindergarten in 2002. In 2002, there was almost a complete renewal of staff in the primary school as teachers who had “done their time” in the school transferred out at the end of 2001.

There is one AEA for the K–12 classes who assists classroom teachers when possible. However, due to the heavy demand on the AEA’s time she is unable to provide any classroom assistance for *CMITI*.

It was determined that the researchers would not visit this school in 2002 because of the changes in the staff and the isolation of the school. Hence, no further report was prepared for the evaluation.

DISCUSSION AND RECOMMENDATIONS

INTRODUCTION

This evaluation covers the second year of a planned two-year implementation of *CMITI* in five NSW government primary schools. The key terms of reference for the evaluation in this second year were:

- an emphasis on identifying factors affecting the continuity of *CMITI* in each of the schools and the success of student learning outcomes and programs
- the continuing professional development of teachers, Aboriginal educators and community members in mathematics
- a greater emphasis on the teacher use of the *Learning Framework in Number*.

This discussion is built around each of these terms of reference.

CONTINUITY OF *CMITI* AND STUDENT LEARNING OUTCOMES

The likelihood of the *CMITI* program continuing in the five schools in which it was implemented in 2001–2002 clearly varies from school to school. An analysis of the different schools' responses to the program gives some assistance in identifying factors which may affect that continuity.

Program leadership in the school

It is obviously very important to have someone in the school who see herself or himself as the leader responsible for the development of the program. In Schools 1 and 4, the two schools where *CMITI* seems to have been most successfully implemented, this leader is the AERT. In both cases, however, the AERT is very capably assisted by the AEA(s) and enjoys the support of the school principal. In School 3, the strong leadership from the AP in 2001 was not fully developed in 2002, with a subsequent loss in the momentum of the program.

Continuity of staff

As with any initiative based on the professional development of teachers and other school staff, the impetus is gradually developed over long periods of time by the staff who remain at the school. If teachers move, their expertise, and particularly their experience and understanding of the program being implemented, is lost to the school. New teachers need professional development in the program before they can begin to implement it and the impetus may again be lost. In this evaluation, the effect of such staff changes is best illustrated by School 5 which lost almost all of its primary staff at the end of 2001 and School 3 which lost its *CMITI* leader at the end of 2001 and its *CMITI* aware preschool teacher during 2002 on maternity leave. The schools where there was continuity of staff, in general, managed to continue the program in 2002 with most success.

Preschool to school links

With everything else equal, *CMITI* seems to work best in the situations where there is a close link between the school and the preschool(s) serving it. In Schools 2, 3 and 5, there are DET preschools on the school site. Close links through *CMITI* have been developed in School 2 with, for example, the Kindergarten students undertaking their *CMITI* lessons with the preschool children. This certainly seems to have had some effect on the preschool students willingness to be involved in numeracy experiences. Staff changes have affected the implementation of *CMITI* in School 5, so no comment can be made here about that setting. In School 3, staff changes have also affected the relationship between the preschool and school as can be seen from the following comment:

... through circumstances of staff and so on, [2002 has not seen the preschool as involved in CMITI, as in the previous year. It is expected that in 2003 the preschool will be more involved] because the staff member who was very much into it is back and becoming involved. It wasn't a reluctance on anyone's part but it was just a lack of knowledge. The previous teacher had built up a link with the community and then when the person goes it can take a long time for that trust to build up again. [AP, School 3]

In School 4, there is no on-site DET preschool but one of the major successes of the *CMITI* implementation has been the development of strong links between the school and the local community preschool. This has resulted in claims that the preschools children's levels of numeracy have developed well beyond those of earlier cohorts, there are much closer links between the two settings and that children's transition to school has been enhanced. The strength of the links between School 5 and the local preschool are testimony to the importance of professionals being willing to work outside their own zone and to share their skills, knowledge and expertise for the continuing benefit of the children in their care.

Effective relationships between Aboriginal and non-Aboriginal educators

The success of *CMITI* depends on its implementation by Aboriginal educators with the support of their Aboriginal communities. However, in most schools, such implementation will also depend on the relationships built between these Aboriginal educators and non-Aboriginal colleagues in the school and beyond. Where such strong relationships exist, for example, School 1 and School 4, the program has flourished. The support which can be given by a non-Aboriginal principal or consultant to the AERT and AEA as they lead the implementation of *CMITI* can be critical.

CMITI and homework centres

The lack of reinforcement of the work undertaken in schools in after-school homework centres is a long term concern to teachers. In the case of the schools implementing *CMITI*, this has not been a concern because of the continuity of staff who have major roles in the implementation of the program into these homework centres. For example, in School 1, the AERT and AEA run the homework centre and use the prepared *CMITI* materials with the students. Similarly, in School 2, the homework centres are

run by the two AEA's who have an intimate knowledge of the activities and resources developed for *CMITI* and use them in their after-school work.

In the first year of a two-year pilot implementation the *CMITI* program has been a success to varying degrees in the five pilot schools. The individual case study reports identify the contextual supports and constraints in each of the schools. The development and implementation of *CMITI*, a structured numeracy program, enables teachers to identify the levels at which Aboriginal children are achieving in selected areas of subitising, sharing, numeral identification, forward number word sequences, backward number word sequences and early arithmetical strategies. The individual assessment procedures using an extended SENA provide data on the strategies that students are using in their thinking. The analysis of the individual student performances acts as an instrument to provide a comparative analysis of performance indicating the progress of the Aboriginal students.

CMITI has focused attention on Aboriginal students' levels of achievement in numeracy. This appears to be the first time for such a focus in some of the schools. *CMITI* provides an opportunity, the first for all schools, where Aboriginal educators in partnership with teachers and, in some cases, the local Aboriginal community have worked collaboratively to develop a culturally appropriate mathematics program for Aboriginal students in preschool to Year 2. A number of points have emerged from the study that require highlighting and further discussion.

Student learning outcomes

The data analysis of students' responses to the pre- and post-administrations of the extended SENA show that, in general, the students have improved in the six constructs of the learning framework over the period of instruction. The quantum of improvement in 2002 is greater than that in 2001 in the areas of numeral identification, forward number sequence, backward number word sequence and early arithmetical strategies. There is no doubt that the techniques, activities and procedures implemented through the program are associated with improved student learning outcomes.

Continuing professional development of educators and community

The importance of extensive and sustained professional development for the educators involved in *CMITI* can be seen from the schools in which the program has been more successful. For example, in School 1, ongoing professional development has been undertaken in spite of the move to a new school. In School 4, such professional development, especially for the preschool educators and those in the middle years of primary school have facilitated the continuity of learning experienced by the children. In School 3, the change of leadership for the program has meant a change in direction and the need for further professional development. In the other schools, challenges of the particular locations have meant that continuing professional development has been problematic. The success of *CMITI* in the five schools seems to be quite closely correlated with the level of professional development able to be implemented.

A particular mention of the role of the *CMITI* project officer in the continuing professional development of educators needs to be made. This

officer has been instrumental in the provision of professional development in each of the schools, sometimes in the absence of district consultancy support. All the participants in *CMITI* who have spoken with the evaluators have been very praising of the project officer's work in holding together the professional development aspects of the program. Without this officer's work, the program would certainly not have been the success it has been in most of the schools.

One of the highlights of the 2002 phase of the *CMITI* implementation has been the development of a professional development videotape. Under the guidance and leadership of the project officer and with the full cooperation of School 1 and school 4, this videotape will provide not only a record of the project but also a very helpful professional development resource for the future.

THE LEARNING FRAMEWORK IN NUMBER

In 2001, the major thrust of *CMITI* was the Indigenisation of the resources and materials to be used. In 2002, at least in some of the schools, this focus has moved on to include an understanding of the *Learning Framework in Number*, on which the program is based. Particularly in Schools 1, 3 and 4, there is evidence of the teachers and AEAs using and understanding the language of the framework. There is a much greater (than in 2001) appreciation of it in the analysis of students' work and the development of activities which were closely aligned with the framework stages. Again, credit must be given to the project officer who has facilitated these gains through professional development experiences such as the sharing day and in-school workshops. The level of understanding of the learning framework among the educators in Schools 1, 3 and 4 seems to be much higher than it was in 2001. In School 2, this does not seem to have become a priority just yet, and in School 5 most of the staff have been too busy learning about the program to have appreciated fully the theoretical underpinnings.

CONCLUSION

In 2001, *CMITI* commenced in the five schools with great enthusiasm from all concerned. This level of enthusiasm has been maintained during 2002 in most of the schools and enhanced in one or two of them. Those schools who have managed to get their resources and programs organised around the approaches of *CMITI*, have developed enthusiastic and coherent teams of educators and who have involved their Aboriginal communities, have provided continuing success for their students in terms of learning outcomes. *CMITI* obviously has a great deal to offer in the numeracy education of young Aboriginal students. It is hoped that the program can be expanded in the forthcoming years.

The importance of the role played by the project officer for *CMITI* to the successful implementation of the program must not be underestimated. Her work in the in-school professional development of teachers and other school staff is seen as critical to this success. Her work with the videotape about the program will facilitate the longevity of the project.

The evaluators congratulate her on the success of *CMITI* in at least some of the five schools.

Finally, the evaluation of the *CMITI* program has convinced the evaluators that it is definitely a two-year program. The two-year implementation is necessary because of:

- the relationships which need to be developed in the communities
- the conceptual understanding of the *Learning Framework in Number* and cultural aspects of numeracy development which are needed by the educators
- the need for the development of a common language
- the development of the teachers' analytical skills in assessment.

Recommendations

In the 2001 progress report, the evaluators made a total of fourteen recommendations, most of which seem to have been implemented. *CMITI* has provided a continuing impetus in 2002 for schools with Aboriginal students to discuss and implement appropriate teaching strategies and learning activities which support the early numeracy learning of Aboriginal students. Given this, the following three recommendations are made as a result of the 2002 evaluation.

1. That the *CMITI* program be extended to all NSW Department of Education and Training primary schools with a enrolment of Aboriginal students.
2. That the NSW Department of Education and Training provide professional development to the classroom teachers, AEs and AERTs in these schools in using the *Learning Framework in Number* as a means of assessing and analysing Aboriginal students' early numeracy achievement and in planning and implementing culturally appropriate learning experiences.
3. That the NSW Department of Education and Training assist Aboriginal communities by providing opportunities to increase awareness of their children's early numeracy learning through culturally appropriate information sessions and materials.

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